University of Arkansas at Monticello
Academic Unit Annual Report

Unit: Mathematics and Natural Sciences

Academic Year: 2021 - 2022

What is the Unit Vision, Mission and Strategic Plan including goals, actions and key performance indicators (KPI)? Please identify new goals from continuing goals. (insert strategic plan, goals and KPIs below)

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

KPI	Assessment of Progress	Implications for Future Planning/Change
1A Get the Math and Science faculty up to speed with the new assessment process	Had discussions to discuss the process. Team talked about possible exercises and discussed rubrics. Most seemed up to speed; however, in the end some were not able to complete the assessment and grade according to the rubrics.	Some faculty had no problems implementing new assessment process while others are not as far along in the process. Additional work is needed one on one with those faculty. More work is needed.
1B. Review scheduling for the Quantitative Literacy with Review (QLwR) and College Algebra with Review (CAwR) courses and improve offering times	We reviewed the 5 day per week linear format of the QL with Review course. Everyone agreed the linear format is best for the students, but adding some flexibility would benefit some students.	One section now has lab that meets immediately after lecture on M W instead of at the same time on T Th. Another online section was added for the students needing the online option. We also allowed students with conflicts to sign up for a section of lab that was not the same section number as their lecture. Reports were that it went okay; however, there was at least one instance where two courses were not in sync. The instructor was able to adjust accordingly.
1C. Make sure our courses match up to the Arkansas Course Transfer System (ACTS) syllabi in terms of content	Principles of Biology I and II remains a problem, and needs to be fixed with ADHE. Common course numbering system could provide an avenue to help with this issue. If that doesn't progress, we must submit paperwork to get our courses recognized appropriately in ACTS.	Paperwork will be submitted to ADHE in the future to correct the content listing and transferability (both into and out of UAM) of those courses.

KPI	Assessment of Progress	Implications for Future Planning/Change
1D. Review open source and electronic book options for courses in order to reduce cost to students	Math continues to expand MyOpenMath software, which is free to students. It worked great with the older version of Blackboard, but did have some issues with Blackboard Ultra, which seem to be resolved at this point. Some biology courses reviewed electronic material and some was adopted despite contract issues with the providers.	As faculty become more comfortable with electronic and open source materials, more will be adopted in the future.
2A Upgrade/repair lab equipment	A new NMR was purchased. The Infrared Spectrophotometer was repaired. The computer that operates the Gas Chromatograph was repaired, but the instrument is still having issues. No work was done on the Atomic Absorption Spectrophotometer, but plans are to continue with that in the future.	Repairs will be made to equipment that can be repaired. Other pieces will have to be replaced as money is available.
2B. Undergo a major Science Center cleanup	The two old NMR's were removed, which provided a lot of additional space. Other old instruments have been tagged for removal	This process will continue
3A. Replace vacancies with properly trained and experienced faculty if enrollment allows	Lasts year several faculty were replaced. The new faculty have done fairly well in the classroom, and are continually improving. This year those faculty will take on academic advising duties and most likely get more involved with scholarly activity. This year, one faculty left UAM in December (Dr. Andrew Williams, Chemistry). That position was filled with Dr. Bramlett. Dr. Bramlett stepped down as dean on August 1 to become a full time faculty member, and Dr. Shuneize Slater filled the Dean position. Jessie Chappell retired at the end of the spring term; however, a replacement was not sought for her position.	Continue looking for young faculty talent that will work on the lower end of the pay scale. We do need to have real discussions with the administration on the current salaries of faculty.
4A Recruit local school districts	One school was visited for 7 class days in Chemistry. Another school requested a visit; however, the teaching schedule of the faculty member prevented the visit from occurring. Teacher workshops were held at the SEARK Educational Coop on two occasions in which Science teachers from 7 school districts were present. Information about our programs was shared. The Science Fair was cancelled due to very low participation by the school districts. Several school districts made museum and planetarium visits.	As schedules allow, make earlier contact with the school districts to get involved earlier in the year. Do a better job of getting the UAM Math and Science story out to the schools. Get people on campus for museum tours and planetarium shows as much as possible. Meet with principals to discuss the future of the science fair. Re-establish the Math contest.

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

Table 2: Unit Student Learning Outcomes

University Student Learning Outcome	Unit Student Learning Outcome (may have more than one unit SLOs related to each University SLO; List each one)	Alignment with UAM/University Vision, Mission and Strategic Plan	Alignment with Unit Vision, Mission, and Strategic Plan
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.	Be able to clearly express mathematical and/or scientific ideas in oral and written communication	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.
Critical Thinking: Students will demonstrate critical thinking in evaluating all forms of persuasion and/or ideas, in formulating innovative strategies, and in solving problems.	Have a core knowledge of the major discipline Be able to demonstrate the ability to apply scientific and/or mathematical concepts to real world situations.	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.
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.	Be prepared for immediate employment in a scientific, technical, medical, or educational environment. Be prepared to enter graduate or professional school in the appropriate area	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	Math and Sciences wants to educate students to better understand the role of science in events around the world and locally.

University Student Learning Outcome	Unit Student Learning Outcome (may have more than one unit SLOs related to each University SLO; List each one)	Alignment with UAM/University Vision, Mission and Strategic Plan	Alignment with Unit Vision, Mission, and Strategic Plan
Teamwork: Students will work collaboratively to reach a common goal and will demonstrate the characteristics of productive citizens.	Be prepared for immediate employment in a scientific, technical, medical, or educational environment Be prepared to enter graduate or professional school in the appropriate area Be able to clearly express mathematical and/or scientific ideas in oral and written communication	The world is becoming more technical in nature and our graduates must be prepared to fill the technology related roles in the community. A major factor in quality of life in any community is the quality of the health care system which is a team oriented system in our society. Our programs are very successful at preparing students for all health care professional programs.	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. 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. This year due to COVID, some of the professional programs removed the requirement of the standardized test score, like the PCAT for pharmacy. Other professional schools limited the number of students that could take the exams on given dates, and some students have elected to take the MCAT this summer, after graduation, instead of prior to their senior year. They will now have a gap year between graduating from undergraduate school and entering medical school. This year, we have 2/4 students accepted to medical school, 1/1 applicant accepted into pharmacy school, several others accepted into allied health and graduate programs. There were no applicants to optometry or dental school.

Beginning this year the courses identified for assessment were reviewed, and each course instructor selected an assignment or group of assignments that would be used to assess the category selected. Using the appropriate rubric, information would be provided on students in those courses. The courses mapped and the rubrics used are shown below:

Course	Rubric	Status
CHEM 4742 Advanced Lab Techniques	Communication; Oral	Course not offered in 2021-22
BIOL 3223 Biological Statistics	Critical Thinking	No data collected this year
CHEM 3414 Organic Chemistry II	Critical Thinking	Completed
MATH 3495 Calculus II	Critical Thinking	Completed
MATH 3545 Calculus III	Critical Thinking	Completed
BIOL 2143 Botany	Global Learning; Global Self-Awareness	No data collected this year
BIOL 3484 General Ecology	Team Work	Completed
CHEM 1121 Gen Chem I Lab (for either Chem or Natural Science major)	Team Work	Completed

With the number of students that were placed in quarantine during the semester, many of the faculty essentially had to teach the courses twice; once face to face and again online for those in quarantine. Because of the extra duties, some faculty simply weren't able to complete the assigned assessment as planned. Others were assessed, but only partially. Since this was the first official time using this method of assessment we can hopefully improve each year.

UNIVERSITY ASSESSMENT: AACU RUBRIC DATA
Oral Communication

Chem 4742 Advanced Lab Techniques, which assessed Oral Communication, was not offered in the Spring 2022 term.

If the dimension is not assessed, leave blank.

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Organization							
Language							
Delivery							
Supporting Material							
Central Message							

What do the data indicate about strengths, weaknesses, opportunities for growth and threats to effectiveness regarding student performance?

Strengths

-

Weaknesses

-

Opportunities for Growth

-

Threats to Effectiveness

-

What actions, if any, do you recommend to improve student performance in this learning outcome?

What revisions, if any, to the assessment process do you recommend to acquire more useful data in this learning outcome?

Written Communication

No Math and Science courses were selected to assess Written Communication.

If dimension not assessed, leave blank.

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Context and Purpose for Writing							
Content Development							
Genre and Disciplinary Conventions							
Sources and Evidence							
Control of Syntax and Mechanics							

What do the data indicate about strengths, weaknesses, opportunities for growth and threats to effectiveness regarding student performance?

Strengths

-

Weaknesses

-

Opportunities for Growth

-

Threats to Effectiveness

-

What actions, if any, do you recommend that might improve student performance in this learning outcome?

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?

Organic Chem I Spectroscopy exercises were used to measure critical thinking. None of the students had any experience with spectroscopy prior to this course.

Critical Thinking

If dimension not assessed, leave blank.

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Explanation of Issues	3	3	6	2	1	2.33	15
Evidence	4	2	6	3	0	2.47	15
Influence of Context and Assumptions	3	3	7	2	0	2.47	15
Student's Position (Perspective, Thesis/Hypothesis)	5	4	5	2	0	2.93	15
Conclusion and Related Outcomes (Implications and Consequences}	5	4	5	2	0	2.93	15

What do the data indicate about strengths, weaknesses, opportunities for growth and threats to effectiveness regarding student performance?

Strengths

- Very pleased with number of students that became quite good at determining structure using only spectral data
- Students put several layers of information together to arrive a full or partial structures
- Most became comfortable with the process by the end

Weaknesses

- Students who had taken Organic I partially or totally online during COVID had less hands on experience with spectroscopy
- Students who had not taken Organic I immediately prior to enrolling in Organic II had more of a struggle

Opportunities for Growth

- Introduce more spectroscopy during Organic Chem I

Threats to Effectiveness

- Experimentation so expensive to purchase and maintain
- Fewer students interested in graduate programs in chemistry

What actions, if any, do you recommend that might improve student performance in this learning outcome?

- Introduce some spectroscopy in Organic Chem I
- Get students more hands-on experience on the spectroscopic equipment

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?

- Several areas of organic chemistry could be used as a basis for critical thinking assessment

Calculus II

Critical Thinking

If dimension not assessed, leave blank.

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Explanation of Issues	0	0	3	1	0	1.75	4
Evidence	0	0	1	3	0	1.25	4
Influence of Context and Assumptions	0	0	2	2	0	1.5	4
Student's Position (Perspective, Thesis/Hypothesis)	0	0	2	2	0	1.5	4
Conclusion and Related Outcomes (Implications and Consequences}	0	0	3	1	0	1.75	4

What do the data indicate about strengths, weaknesses, opportunities for growth and threats to effectiveness regarding student performance?

Strengths

- The students were consistent on all exercises chosen for assessment
- Every student showed improvement from the beginning of the semester to the end of the term

Weaknesses

- Not enough math majors to give a broad distribution of results. One good or bad student could greatly affect the results

Opportunities for Growth

- Have students more involved with presenting work in class in order to make it easier to assess each student on an individual basis

Threats to Effectiveness

- Small numbers in the math major
- COVID seems to have STEM areas in the high schools. Fewer students pursuing this area in college

What actions, if any, do you recommend that might improve student performance in this learning outcome?

- Spend more time in class working problems of this type

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?

- Calculus is filled with topics that could be used as an assessment model for Critical Thinking. May try different topic in the future.

Calculus III

Critical Thinking

If dimension not assessed, leave blank.

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Explanation of Issues	0	2	0	0	0	3	2
Evidence	1	1	0	0	0	3.5	2
Influence of Context and Assumptions	1	1	1	0	0	3.5	2
Student's Position (Perspective, Thesis/Hypothesis)	1	1	0	0	0	3.5	2
Conclusion and Related Outcomes (Implications and Consequences}	2	0	0	0	0	4	2

What do the data indicate about strengths, weaknesses, opportunities for growth and threats to effectiveness regarding student performance?

Strengths

- The students were consistent on all exercises chosen for assessment
- Students showed improvement since Calculus II

Weaknesses

- Not enough math majors to give a broad distribution of results. One good or bad student could greatly affect the results

Opportunities for Growth

- Have students more involved with presenting work in class in order to make it easier to assess each student on an individual basis

Threats to Effectiveness

- Small numbers in the math major
- COVID seems to have STEM areas in the high schools. Fewer students pursuing this area in college

What actions, if any, do you recommend that might improve student performance in this learning outcome?

- Spend more time in class working problems of this type

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?

- Calculus is filled with topics that could be used as an assessment model for Critical Thinking. May try different topic in the future.

Global Learning

If dimension not assessed, leave blank.

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Global Self-Awareness							
Perspective Taking							
Cultural Diversity							
Personal and Social Responsibility							
Understanding Global Systems							
Applying Knowledge to Contemporary Global Contexts							

What do the data indicate about strengths, weaknesses, opportunities for growth and threats to effectiveness regarding student performance?

Strengths

-

Weaknesses

-

Opportunities for Growth

-

Threats to Effectiveness

What actions, if any, do you recommend that might improve student performance in this learning outcome?

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?

BIOL 3484 Ecology

Teamwork Assesssment

If dimension not assessed, leave blank.

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Contributes to Team Meetings	8	0	0	0	0	4	8
Facilitates the Contributions of Team Members	4	2	2	0	0	3.25	8
Individual Contributions Outside of Team Meetings	6	1	1	0	0	3.63	8
Fosters Constructive Team Climate	8	0	0	0	0	4	8
Responds to Conflict	NA	NA	NA	NA	NA	NA	8

What do the data indicate about strengths, weaknesses, opportunities for growth and threats to effectiveness regarding student performance?

Strengths

- Upper level class, so students are more accustomed to working as part of a team. Everyone contributed

Weaknesses

- Small class, so did much of the work was done in a single group

Opportunities for Growth

- Introduce more varied lab exercises

Threats to Effectiveness

- Online exercises working on a more individual bases
- COVID preventing students from working closely in groups

What actions, if any, do you recommend that might improve student performance in this learning outcome?

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?

CHEM 1121 Lab Gen Chem I

Teamwork Assesssment

If dimension not assessed, leave blank.

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Contributes to Team Meetings	0	3	15	1	0	2.11	19
Facilitates the Contributions of Team Members	0	3	14	2	0	2.05	19
Individual Contributions Outside of Team Meetings	0	0	0	16	3	0.84	19

Dimension	# of students scoring 4	# of students scoring 3	# of students scoring 2	# of students scoring 1	# of students scoring 0	Average score for unit	Total # of students assessed in unit
Fosters Constructive Team Climate	0	5	11	3	0	2.11	19
Responds to Conflict	0	3	10	6	0	1.84	19

What do the data indicate about strengths, weaknesses, opportunities for growth and threats to effectiveness regarding student performance?

Strengths

- Very few students had experience in labs, so most students started at 0 or 1, and true growth was observed
- Those with hands-on skills rose to the forefront of the class

Weaknesses

- Many had not worked as part of a team in an academic setting.
- Some students seemed to allow others to take the lead and they follow
- Many students had the knowledge but lacked confidence

Opportunities for Growth

- Introduce more varied lab exercises
- Do more with instrumentation that would provide immediate feedback

Threats to Effectiveness

- Online exercises and working on a more individual bases
- COVID preventing students from working closely in groups

What actions, if any, do you recommend that might improve student performance in this learning outcome?
No major changes needed. Perhaps more focus on presenting lab results would be beneficial

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?

Possibly do a pre and post review to get a better feel of how the students would rank coming into the course.

Overall, I was not pleased with the assessment process. Some faculty did not collect data in the courses that were previously identified. I strongly recommend the new dean and Assessment Committee member from the School of Math and Sciences select better courses for evaluation and also pick courses with larger numbers. There also needs to be more variety of lower and upper level courses to be provide a meaningful timeline of improvement.

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 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	3-Year Total & Average	10-Year Total & Average
Freshman	16	16	29	19	31	36	20	43	30	27	100 / 33.3	267 / 26.7
Sophomore	10	5	8	16	10	18	20	19	15	18	52 /17.3	139 / 13.9
Junior	6	11	5	6	19	9	23	20	13	16	49 / 18.3	128 / 12.8
Senior	16	10	18	12	16	21	32	20	15	7	42 / 14	167 / 16.7
Post Bach	1	1	0	0	0	0	0	0	0	0	0 / 0	2 / 0.2
Total	49	43	60	53	77	85	95	102	73	68	243 / 81	703 / 70.3

UNDERGRADUATE PROGRAM MAJOR: Chemistry

Classification	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	3-Year Total & Average	10-Year Total & Average
Freshman	6	10	13	3	14	10	8	16	13	8	37 / 14	101 / 10.1
Sophomore	4	4	5	3	8	6	10	12	7	7	26 / 11	66 / 6.6
Junior	4	7	4	7	5	8	16	12	10	6	28 / 13.7	79 / 7.9
Senior	4	4	6	6	4	7	14	13	8	6	27 / 12	72 / 7.2
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	18	25	28	19	31	31	48	53	38	27	118 / 39.3	318 / 31.8

UNDERGRADUATE PROGRAM MAJOR: Mathematics

Classification	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	3-Year Total & Average	10-Year Total & Average
Freshman	8	6	8	5	8	9	3	10	4	1	15 / 5	62 / 6.2
Sophomore	5	2	2	2	6	4	5	2	3	3	8 / 2.7	34 / 3.4
Junior	3	9	4	3	2	3	0	3	1	5	9 / 3	33 / 3.3
Senior	3	4	3	6	1	4	4	0	2	1	3 / 1	28 / 2.8
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	19	21	17	16	17	20	12	15	10	10	35 / 11.7	157 / 15.7

UNDERGRADUATE PROGRAM MAJOR: Natural Science

Classification	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	3-Year Total & Average	10-Year Total & Average
Freshman	0	1	14	19	10	13	18	8	9	5	22 / 7.3	97 / 9.7
Sophomore	2	0	9	4	4	5	9	8	9	4	21 / 7	54 / 5.4
Junior	3	2	7	5	6	5	6	4	4	3	11 / 3.7	45 / 4.5
Senior	3	5	6	5	6	5	2	5	7	4	16 / 5.3	48 / 4.8
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	8	8	36	33	26	28	35	25	29	16	70 / 23.7	244 / 24.4

UNDERGRADUATE PROGRAM MAJOR: Pre-Engineering

Classification	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	3-Year Total & Average	10-Year Total & Average
Freshman	10	8	11	10	9	5	6	10	7	5	22 / 7.3	79 / 7.9
Sophomore	2	2	3	1	1	1	4	1	4	1	6 / 2	20 / 2.0
Junior	0	1	1	0	0	0	0	1	0	4	5 / 1.7	7 / 0.7
Senior	0	0	0	2	0	0	0	0	2	1	3 / 1	5 / 0.5
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	12	11	15	13	10	6	10	12	13	11	36 / 12	111 / 11.1

UNDERGRADUATE PROGRAM MAJOR: Pre-Medicine

Classification	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	3-Year Total & Average	10-Year Total & Average
Freshman	23	22	27	21	14	13	15	17	16	10	43 / 14.3	178 / 17.8
Sophomore	6	6	3	16	4	5	14	8	8	11	27 / 9	81 / 8.1
Junior	7	1	5	1	3	5	13	12	8	7	27 / 9	62 / 6.2
Senior	4	5	1	6	2	5	9	10	6	3	19 / 6.3	51 / 5.1
Post Bach	1	1	0	0	0	0	0	0	0	0	0 / 0	2 / 0.2
Total	41	35	36	44	23	28	51	47	38	31	116 / 38.7	374 / 37.4

UNDERGRADUATE PROGRAM MAJOR: Pre-Pharmacy

Classification	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	3-Year Total & Average	10-Year Total & Average
Freshman	18	15	11	11	6	4	7	9	9	6	24 / 8	96 / 9.6
Sophomore	5	8	6	6	4	5	3	4	4	2	10 / 3.3	47 / 4.7
Junior	5	3	9	7	2	3	7	4	2	1	7 / 2.3	43 / 4.3
Senior	4	0	0	3	1	2	3	3	4	1	8 / 2.7	21 / 2.1
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	32	26	26	27	13	14	20	20	19	10	49 / 16.3	207 / 20.7

UNDERGRADUATE PROGRAM MAJOR: Allied Health

Classification	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021	3-Year Total & Average	10-Year Total & Average
Freshman	30	16	0	0	9	14	18	10	11	7	28 / 9.3	114 / 11.4
Sophomore	11	9	0	0	2	0	10	8	8	5	21 / 7	53 / 5.3
Junior	6	3	0	0	1	2	3	3	3	4	10 / 3.3	25 / 2.5
Senior	2	1	0	0	1	0	3	2	5	3	10 / 3.3	18 / 1.8
Post Bach	0	0	0	0	0	0	0	0	0	0	0 / 0	0 / 0
Total	49	29	0	0	13	16	34	23	27	19	69 / 23	210 / 21

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 sometimes 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.

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

Strengths

- Biology continues to be the strength of the academic unit with its number of majors. Chemistry is still viable largely due to the number of double majors and the strength of the pre-professional programs.

Weaknesses

- Clearly Mathematics is in trouble in terms of viability. The current average of 3 per year over three years needs to be improved. Hopes of having more than four graduates in math were dashed when one student simply chose not to take the courses needed to finish, and another had some personal issues that prevented her from completing her coursework.
- Pre-Engineering is not a real program that we can offer. We lack facilities, faculty, and equipment to offer anything truly related to engineering. We currently sell the program by offering students opportunities to attend graduate engineering programs from any STEM major. The quality of student that is typical for the pre-engineering program is not the type of student that should be entering a four year engineering degree.

Opportunities for Growth

- Our classes are small enough that we have room to grow our majors significantly without the addition of new faculty members.

- With COVID restrictions easing up, we have more opportunity to recruit in the high schools

Threats to Effectiveness

- The number one threat is lack of students coming to UAM. There are several reasons this is a growing problem:
  - The student population in the UAM region is declining
  - UAM's facilities are poor compared to competitors
  - UAM's competitors are putting increased emphasis on recruiting the southeastern Arkansas public schools
  - The town and surrounding area offers little to attract young adults from outside the region
  - We are poorly marketed. Everyone hangs their hat on UAM being Arkansas' only school of forestry. The forestry program is a small part of UAM. Its stature doesn't help other units recruit.
  - Cost of attending college is increasing
- Losing faculty. Whether losing faculty to retirement or to other universities it is a huge problem because it is extremely difficult to hire new faculty to UAM because of low salary, location, facilities, and equipment.

Progression/Retention Data

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

Major: Biology	**Number**	**Percentage**
Number of majors classified as juniors (60-89 hours) in fall 2021	**16**	**100%**
Number and percentage graduated with a B.S degree in that major before or during 20-21 academic year	0	0
Number and percentage that graduated in that major during 21-22 academic year	3	19%

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

Strengths

- Many of the biology majors are double majors with chemistry
- All three that completed their degree started their career at UAM as a freshman

- Several of those not completing the B.S. degree have completed CP or AA degrees (8)
- Some listed as a junior were just completing their second year at UAM. They came in with hours from high school. Some of the hours do not help the student in this degree program

Weaknesses

- Six of the students are planning to apply for an allied health program, and may leave campus prior to completing their degree
- Several of those not finishing have changed their major one or more times during their career
- A few of the students listed as Biology-Pre-Med have essentially zero chance of ever attending medical school and need a shot of realism and be placed in major more appropriate for their skill level.

Opportunities for Growth

- Get more professional students prepared for transferring hours back when they get early acceptance. Under the rules for professional students many of these students can transfer hours back after their first year to get the UAM degree.
- Stronger academic advising in the middle and at end of their career. .

Threats to Effectiveness

- Letting non-academic situations guide academic decisions. Students decide to stay rather than take a slightly heavier load and graduate on time.
- Rising costs. College is becoming more expensive, but everything else such as rent, food, entertainment, vehicles, etc... are also increasing in price. It is putting a burden on our students trying to work enough hours to pay the bills and still be a college student.

Major: Chemistry	**Number**	**Percentage**
Number of majors classified as juniors (60-89 hours) in fall 2021	**6**	**100%**
Number and percentage graduated with a B.S degree in that major before or during 20-21 academic year	0	0
Number and percentage that graduated in that major during 21-22 academic year	0	0%

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

Strengths

- Many are double majors with biology

- Several of those not completing the B.S. degree have completed CP or AA degrees (3)
- Three of the students listed as a junior were just completing their second year at UAM. They came in with hours from high school. Some of the hours do not help the student in this degree program

Weaknesses

- Three of the students are planning to apply for an allied health program, and may leave campus prior to completing their degree
- Several of those not finishing have changed their major one or more times during their career
- A few of the students listed as Biology-Pre-Med have essentially zero chance of ever attending medical school and need a shot of realism and be placed in major more appropriate for their skill level.

Opportunities for Growth

- Get more professional students prepared for transferring hours back when they get early acceptance. Under the rules for professional students many of these students can transfer hours back after their first year to get the UAM degree.
- Stronger academic advising in the middle and at end of their career. .

Threats to Effectiveness

- Students making unwise decisions on career choices which are not appropriate for their skill set
- Letting non-academic situations guide academic decisions. Students decide to stay rather than take a slightly heavier load and graduate on time.
- Rising costs. College is becoming more expensive, but everything else such as rent, food, entertainment, vehicles, etc... are also increasing in price. It is putting a burden on our students trying to work enough hours to pay the bills and still be a college student.

Major: Natural Science	**Number**	**Percentage**
Number of majors classified as juniors (60-89 hours) in fall 2021	**2**	**100%**
Number and percentage graduated with a B.S degree in that major before or during 20-21 academic year	0	0
Number and percentage that graduated in that major during 21-22 academic year	1	50%

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

Strengths

- Excellent major for those seeking admission into an professional programs due to options within the degree and large number of electives
- Students completing the degree are often accepted into a professional program or enter the education field

Weaknesses

- Rarely does a student start in this major. Most transfer to this major after running into difficulties in another major
- Many students are in this major for financial aid purchases only and have no intention of being at UAM long enough to complete the degree.

Opportunities for Growth

- Get more professional students prepared for transferring hours back when they get early acceptance. Under the rules for professional students many of these students can transfer hours back after their first year to get the UAM degree.
- Stronger academic advising in the middle and at end of their career. .

Threats to Effectiveness

- Lack of a good back up plan for students who select a major they really aren't academically capable of completing.
- Rising costs. College is becoming more expensive, but everything else such as rent, food, entertainment, vehicles, etc... are also increasing in price. It is putting a burden on our students trying to work enough hours to pay the bills and still be a college student.

Major: Mathematics and Pre-Engineering	**Number**	**Percentage**
Number of majors classified as juniors (60-89 hours) in fall 2021	**6**	**100%**
Number and percentage graduated with a B.S degree in that major before or during 20-21 academic year	0	0
Number and percentage that graduated in that major during 21-22 academic year	1	17%

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

Strengths

- Faculty willingly teach courses out of sequence or provide independent study in order to help students finish on time

Weaknesses

- Essentially all the students in the program other than the one who graduated came into the major as a second, or even third choice of a major.
- COVID and lack of effective recruiting in 2015-16 have created situations with very low numbers.

Opportunities for Growth

- Addition of a Teaching Option of the Mathematics degree.
- Enhanced focus on data science by the state

Threats to Effectiveness

- Poor personal life decisions lead to students getting themselves into situations which require them to drop classes, skip semesters, etc...
- Rising costs. College is becoming more expensive, but everything else such as rent, food, entertainment, vehicles, etc... are also increasing in price. It is putting a burden on our students trying to work enough hours to pay the bills and still be a college student.

Major: Biology	**Number**	**Percentage**
Number of majors classified as sophomores (30-59 hours) in fall 2021	**12**	**100%**
Number and percentage graduated with a B.S degree in that major before or during 20-21 academic year	0	0
Number and percentage that graduated in that major during 21-22 academic year	0	0%

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

Strengths

- Many of the biology majors are double majors with chemistry

- Several have completed CP or AA degrees (3)
- Faculty generally feel that the sophomore class is stronger than the previous class

Weaknesses

- One of this group has already transferred to another institution

Opportunities for Growth

- Several will have the opportunity to add a second major

Threats to Effectiveness

- Letting non-academic situations guide academic decisions. Students decide to stay rather than take a slightly heavier load and graduate on time.
- Rising costs. College is becoming more expensive, but everything else such as rent, food, entertainment, vehicles, etc... are also increasing in price. It is putting a burden on our students trying to work enough hours to pay the bills and still be a college student.

Major: Chemistry	**Number**	**Percentage**
Number of majors classified as sophomores (30-59 hours) in fall 2021	**5**	**100%**
Number and percentage graduated with a B.S degree in that major before or during 20-21 academic year	0	0
Number and percentage that graduated in that major during 21-22 academic year	0	0%

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

Strengths

- Many are double majors with biology
- Several of those not completing the B.S. degree have completed CP or AA degrees (3)

- Three of the students listed as a junior were just completing their second year at UAM. They came in with hours from high school. Some of the hours do not help the student in this degree program

Weaknesses

- Three of the students are planning to apply for an allied health program, and may leave campus prior to completing their degree
- One student from this group has transferred to another institution due to athletic reasons

Opportunities for Growth

- Get more professional students prepared for transferring hours back when they get early acceptance. Under the rules for professional students many of these students can transfer hours back after their first year to get the UAM degree.
- Stronger academic advising in the middle and at end of their career. .

Threats to Effectiveness

- Students making unwise decisions on career choices which are not appropriate for their skill set
- Letting non-academic situations guide academic decisions. Students make decisions based on factors other than academics
- Rising costs. College is becoming more expensive, but everything else such as rent, food, entertainment, vehicles, etc... are also increasing in price. It is putting a burden on our students trying to work enough hours to pay the bills and still be a college student.

Major: Natural Science	**Number**	**Percentage**
Number of majors classified as sophomores (30-59 hours) in fall 2021	**3**	**100%**
Number and percentage graduated with a B.S degree in that major before or during 20-21 academic year	0	0
Number and percentage that graduated in that major during 21-22 academic year	0	0

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

Strengths

- Excellent major for those seeking admission into an professional programs due to options within the degree and large number of electives
- Students completing the degree are often accepted into a professional program or enter the education field

Weaknesses

- Rarely does a student start in this major. Most transfer to this major after running into difficulties in another major
- Many students are in this major for financial aid purchases only and have no intention of being at UAM long enough to complete the degree.

Opportunities for Growth

- Get more professional students prepared for transferring hours back when they get early acceptance. Under the rules for professional students many of these students can transfer hours back after their first year to get the UAM degree.
- Stronger academic advising in the middle and at end of their career. .

Threats to Effectiveness

- Lack of a good back up plan for students who select a major they really aren't academically capable of completing.
- Rising costs. College is becoming more expensive, but everything else such as rent, food, entertainment, vehicles, etc... are also increasing in price. It is putting a burden on our students trying to work enough hours to pay the bills and still be a college student.

Major: Mathematics and Pre-Engineering	**Number**	**Percentage**
Number of majors classified as sophomores (30-59 hours) in fall 2021	**3**	**100%**
Number and percentage graduated with a B.S degree in that major before or during 20-21 academic year	0	0
Number and percentage that graduated in that major during 21-22 academic year	0	0

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

Strengths

- Addition of a third math option allows students to select plan most aligned with their career goals

Weaknesses

- COVID and lack of effective recruiting in 2015-18 have created situations with very low numbers.

Opportunities for Growth

- Addition of a Teaching Option of the Mathematics degree.
- Enhanced focus on data science by the state

Threats to Effectiveness

- Many students in this program switch to Bachelors of Teaching and Learning in order to avoid upper level math courses
- Low pay is preventing students from entering the teaching field

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*

		2019-2020		2019-2020		2020-2021		2020-2021		2021-2022		2021-2022		3-Year Trend		3-Year Trend	
		*Passed		Failed		*Passed		Failed		*Passed		Failed		*Passed		Failed	
Course	Remediation	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
MATH 1003 Quantitative Lit	19 MATH ACT or Intermediate Algebra	130	67	64	33	109	64	62	36	100	59	70	41	339	63	196	37
MATH 1103 Q.L with Review	16 MATH ACT or Intro Algebra	81	54	69	46	83	44	106	56	79	35	145	65	243	43	320	57
MATH 1033 Trigonometry	19 MATH ACT or College Algebra	59	61	38	39	24	55	20	45	34	60	23	40	117	49	124	51
MATH 1043 College Algebra	22 MATH ACT or Intermediate Algebra	109	67	53	33	109	57	81	43	79	59	54	41	297	61	188	39
MATH 1143 Coll Alg w/Rev	19 MATH ACT or Intermediate Algebra	57	83	12	17	44	70	19	30	53	83	11	17	154	79	42	21
MATH 2255 Calculus I	MATH ACT 22 or College Algebra	26	59	18	41	30	73	11	27	12	57	9	43	68	64	38	36

*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 percentage of successful students in Calculus I has increased each year for the last 4 years.
- College Algebra with Review success percentages continue to be strong, increasing to 79% for the last three years

Weaknesses

- The number of students enrolled in math classes has declined each year over 4 years.
- Success rates were somewhat lower this year in Quantitative Literacy, Quantitative Literacy with Review, and Trigonometry. Faculty strongly feel this is a result of students from this group did largely virtual learning in high school during COVID.

Opportunities for Growth

- There is certainly room for improvement in the success rates in the corequisite courses, especially QL with Review.
- The increase in numbers of QL and QL with Review over the past few years will allow for more sections to be offered.
- Make changes in Intro to Algebra that are geared more for preparing students for QL with Review

Threats to Effectiveness

- Declining numbers will limit course offerings

Consideration in elimination of Intro to Algebra in order to meet 75% goal of those needing remediation to be in a co-requisite course. Allowing even lower MATH ACT scores into current co-requisite courses could create a broad level of abilities that would make the course difficult to teach. Lower skilled students would likely have a lower pass rate than the better students.

Completion (Graduation/Program Viability)

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

Number of Degrees Awarded:

Undergraduate Program/Major	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	Three-Year Total	Three-Year Average	Ten-Year Total	Ten Year Average
Biology	12	16	7	17	18	21	22	21	18	11	50	16.7	163	16.3
Chemistry	6	11	12	12	13	14	12	20	15	7	42	14	122	12.2
Mathematics	2	3	4	8	0	5	4	3	3	3	9	3	35	3.5
Natural Science	2	4	4	4	7	2	5	2	8	5	15	5	43	4.3
Total	22	34	27	41	38	42	43	46	44	26	116	38.6	363	36.3

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

Every major, besides Natural Science, experienced a drop in graduates in the three year average. Natural Science remained level.

We have actively recruited for all of our majors during the last year. We have visited schools and taken every opportunity to get students on campus to recruit them. Mathematics is in trouble. We have had issues with students simply choosing not to graduate when they could have by taking an additional course or two during a light load semester. We simply need more students at UAM,

and we also need more students interested in STEM areas. Most are interested in a pre-professional health major, and that doesn't help the mathematics graduate problem. The lack of industry in this area, and also the lack of an engineering program hurts mathematics. The students wanting to teach mathematics are now choosing to major in the Bachelor of Teaching and Learning then enter the MAT. Those students take far less mathematics, and they are not prepared for the Math Praxis exams. In response to this we have added the Math Teaching Option to the B.S. Mathematics degree. It should receive final approval this fall at the Board of Trustees meeting.

Faculty

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

Faculty Name	Status/ Rank	Highest Degree	Area(s) of Responsibility	Summer II	Fall	Spring	Summer I	Other Assignments
Barton, Laura	Instructor	M.S.	Mathematics	3 / 5	15 / 15	15 / 15	5 / 5	Director of the ACTM Math Contest
Fox, Victoria Lynn	Assoc. Prof	Ph.D.	Mathematics	6 / 6	9 /10	12 / 12	6 / 6	
Gavin, Jared	Assoc. Prof	Ph.D.	Math & Physics	6 / 6	12 / 12	12 / 13		
Goodding, Alan	Instructor	MAT	Mathematics		18 / 18	15 / 15	6 / 6	
Martin, Carole	Assoc. Prof	Ed.D.	Mathematics		14 / 14	11 / 11		
Sayyar, Hassan	Assoc. Prof	Ph.D.	Mathematics		12 / 12	12 / 12	6 / 6	
Cooper, Lura (McGehee)	Instructor	MAT	Mathematics	6 / 6	17 / 17	14 / 14	3 / 3	
Burrows, Ross	Asst Prof	Ph.D.	Physics		12 / 15	12 / 15		Director of the SE Ark Regional Sci Fair
Abbott, Richard	Asst Professor	Ph.D.	Biology		15 / 18	18 / 23		Director UAM Herbarium
Bacon, Ed	Instructor/Prof Emeritus	Ph.D.	Biology		13 / 15	13 / 15	5 / 6	Director Turner Neal Museum
Blount, Keith	Asst Prof	Ph.D.	Biology		11 / 12	11 / 12		Director, Research Program for Minority Students
Chappell, Jessie	Lab Instructor	M.S.	Biology		12 / 15	13 / 15		Stockroom manager for A&P Labs
Ferrar, Arturo Q	Asst Professor	Ph.D	Biology		7 / 9	15 / 16		
Hunt, John	Professor	Ph.D.	Biology	6 / 6	14 / 16	11 / 13		Director of Pre-Medicine Studies
Morgan, Lauren	Lab Instructor	B.S.	Biology	2 / 6	9 / 13	12 / 13	2 / 3	Stockroom manager for Gen Biology
Roser, Andrew	Vis Professor	MS / ABD	Biology		12 / 15	14 / 15	5 / 6	helped with Microbiology labs

Faculty Name	Status/ Rank	Highest Degree	Area(s) of Responsibility	Summer II	Fall	Spring	Summer I	Other Assignments
Sims, Christopher	Professor	Ph.D.	Biology		11 / 12	13 / 15	3 / 3	Assistant Dean for the Sciences
Grilliot, Matthew	Instructor (Adjunct)	Ph.D.	Biology		5 / 6	5 / 6		
Walker, Randall (McGehee)	Instructor	M.S.	Biology	4 / 6	13 / 15	10 / 12	5 / 6	
Bramlett, J. Morris	Professor	Ph.D.	Chemistry			8 / 9	5 / 6	Dean of Math and Sciences
Hatfield, Susan	Lab Instructor	M.S.	Chemistry	2 / 6	10 / 15	12 / 18	5 / 6	Stockroom manager for Intro and General Chemistry
Huang, Jinming	Assoc. Prof	Ph.D.	Chemistry		12 / 14	11 / 12	5 / 6	
Muhoza, Djamali	Asst Prof	Ph.D.	Chemistry		10 / 11	12 / 13		
Williams, Andrew	Assoc. Prof	Ph.D.	Chemistry	4 / 6	14 / 16			Asst Director of Research Program for Minority Students (RPMs)
Sayyar, Kelley	Instructor	M.S.	Earth Science	4 / 6	16 / 19	15 / 17		
Early College High School Faculty								
Cupples, James	ADJ Instructor	M.S.	Math – Parkers Chapel H.S		3 / 5			
Bridgforth, Cherie	ADJ Instructor	M.A.T.	Math-White Hall H.S.		6/ 10	3 / 3		
Shelvia Ross	ADJ Instructor	M.A.T.	Math-Hamburg H.S.		14 / 14	9 / 9		ECHS and part time at Crossett College of Technology

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

- Dr. Farrokh Abedi retired at prior to the start of the year, which allowed Lura Cooper to come back to the main campus from the McGehee campus. Dr. Abedi was the Asst. Dean of Mathematics.
- Dr. Lynn Fox has taken the position of Assistant Dean of Mathematics
- Dr. Andrew Williams left in December for a position at a two-year university in Indiana. He was the Assistant Director of the Minority Research Program, served as a Pre-Pharmacy advisor, served as the primary campus representative for the NASA-Arkansas Space Grant Consortium, and was the Advisor for the Sigma Zeta and UAM

Knights organizations.

- Dr. Bramlett taught a large load in the spring and summer terms to cover the courses vacated by Dr. Williams. Dr. Bramlett stepped down as dean to become a full-time faculty member beginning Fall 2022. He will assume the Pre-Pharmacy Advisor role and continue to serve on the Pre-Professional Committee. He will also become the primary representative for the NASA-Arkansas Space Grant Consortium.
- Dr. Shuneize Slater started the Dean of Math and Science position on August 1, 2022..
- Djamali Muhoza (Chemistry), Andrew Roser (Biology), and Arturo Quintero-Ferrer (Biology) were all first-year faculty. They will all be assuming advising duties in the upcoming year. Dr. Muhoza will advise Biochemistry students, and some Pre-Med students. Dr. Roser will take over the advising role of Physical Therapy, Occupational Therapy, PT-Assistant, and OT-Assistant. Dr. Quintero-Ferrer will advise several of the Allied Health fields, such as Medical Lab Technology, Respiratory Therapy, and Cytotechnology
- Jessie Chappell (Biology) retired at the end of Spring 2022. She mainly taught Anatomy and Physiology labs, and served as the Dental Hygiene advisor.
- Lauren Morgan will take over the Dental Hygiene advising duties vacated by Ms. Chappell

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

Academic Year	Total SSCH Production	Percentage Change	Comment
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
2020-21	9393	-9.7%	not including 369 concurrent enrollment
2021-22	8575	-8.7%	not including 384 concurrent enrollment

What significant change, if any, has occurred in unit SSCH during the past academic year and what might have impacted any change?

For the fourth consecutive year the School of Math and Sciences has experienced a decline of near 1000 SSCH. The decline was less this year than the other three years, so there is hopes that the trend is starting to turn around. The decline in UAM enrollment as a whole has greatly affected the SSCH through the Gen Ed mathematics, and science courses. The number of majors in Math and Sciences has declined by greater than 50% over the last 6 years.

Unit Agreements, MOUs, MOAs, Partnerships

The School of Math and Sciences has no current MOU's. The MOU with UAMS College of Pharmacy establishing UAM as the Early Admissions Rural Acceptance Program was dissolved at the request of UAMS due to decline in the number of applicants.

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

Faculty Scholarly Activity

Publications

- **Abbott, J.R**. 2021. 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.
- **Hunt, J. L., M. E. Grilliot**, T. L. Best, I. C. Castillo, P. E. Eddington, F. A. Johnson, T. L. Kilgore, and J. H. Courson. 2021. Energy content of seeds of Palmer's pigweed (*Amaranthus palmeri*) in the diet of scaled quail (*Callipepla squamata*) in southeastern New Mexico. *Journal of the Arkansas Academy of Science* 75:57-60.
- **Hunt, J. L**., and T. L. Best. *In Review.* Seven-year study of foods of mourning doves (*Zenaida macroura*) in southeastern New Mexico. *Southwestern Naturalist.*
- **Hunt, J. L., M. E. Grilliot**, T. L. Best, D. Lozano-Lopez, E. R. Neilson, and I. C. Castillo. 2020. Energy content of seeds of common sunflowers (*Helianthus annuus*) in the diet of scaled quail (*Callipepla squamata*) in southeastern New Mexico. *Journal of the Arkansas Academy of Science*, 74:41-44.
- **Hunt, J. L.** *In press*. Progress unchained: ideas of evolution, human history, and the future, by Peter J. Bowler (review). *Choice.*
- Best, T. L., and **J. L. Hunt**. *In press.* Mammals of the Southwestern United States. The final draft of the manuscript for this book has been completed. Range maps and skull photos have been prepared and are now in the final stages of editing. A tentative agreement for publication has been reached with the University of Alabama Press. Delays due to the pandemic have moved the estimated date of publication to 2023 or 2024.

- Payton Ashcraft, Jason Rodriguez, **Andrew Williams**"Determination of Fatty Acid Content in Algae." Arkansas Areospace Proceedings. *In Press*
- Schuman, A. J.; Raghavan, A.; Banziger, S. D.; Song, Y.; Hu, Z.-B.; Mash, B. L.; **Williams, A. L**.; Ren, T. Inorg. Chem. 2021, 60, in press; "Macrocyclic Chromium(III) Catecholate Complexes"; http://dx.doi.org/10.1021/acs.inorgchem.0c03224.
- Tran L, Green K, Rodriguez-Rodriguez M, Orellana G, Funke C, Nikolaeva OV, **Quintero-Ferrer A**, Chikh-Ali M, Woodell L, Olsen N, Karasev AV. Prevalence of recombinant strains of potato virus Y in seed potato planted in Idaho and Washington states between 2011 and 2021. Plant Dis. 2021 Oct 26. doi: 10.1094/PDIS-08-21-1852-SR. Epub ahead of print. PMID: 34698520.
- Rodriguez-Rodriguez M, **Quintero-Ferrer A**, Green KJ, Robles-Hernández L, Gonzalez-Franco AC, Karasev AV. Molecular and Biological Characterization of Recombinant Isolates of *Potato virus Y* Circulating in Potato Fields in Mexico. Plant Dis. 2021 Aug 5:PDIS10202215RE. doi: 10.1094/PDIS-10-20-2215-RE. Epub ahead of print. PMID: 33267640.
- Tran, Lisa T; Green, Kelsie J; Rodriguez Mariana; Orellana, Gardenia; Funke, Cassandra; Nikolaeva, Olga; **Quintero-Ferrer, Arturo**; Chikh-Ali, Mohamad; Prevelence of Recombinant Strains of Potato Virus Y in Seed Potato Planted in Idaho and Washington States Between 2011 and 2021. Plant Disease, Vol 106, No 3, March 2022.
- **Sims, Christopher**, "It starts on the second pull everytime!" submission pending to Arkansas Game and Fish magazine.
- **Muhoza, Djamali**; Targeting K-Ras Mutations Show Promise Towards Ending Ras's "Undruggable" Era. Manuscript # BMS-PPL-2022-122. Protein & Peptide Letters, Bentham Science Publishers, Submitted for publication 2022.

Presentations to Professional Organizations

- McCartha, G.L., C.M. Sims, B.J. Kosnik, **J.R. Abbott**, M.L. Jones, & T.D. Marsico. 2021. Flora of six Lower Mississippi River islands. SUPERB Scholarship Program 2021 Summer Institute, Lake Barkley State Resort Park, Cadiz, KY, 8–11 August. Poster.
- Abbott, J.R. 2021. Vines of Arkansas. Arkansas Native Plant Society, 4 September. Zoom Presentation.
- Abbott, J.R. 2021. Through the Eyes of a Botanist: a pictorial look at Arkansas's Natural Areas. WeDigBio, 16 October. Zoom Presentation.
- Abbott, J.R. 2021. Introduction to Practical Plant ID Patterns. WeDigBio, 17 October. Zoom Presentation.
- Bolick,C.N.,C.A.Knighten,and E.J.Bacon. Habitat Selection of macroinvertebrates in the Lower Saline River. Arkansas Academy of Sciences, 2021

- Ludwig, T.and E.J. Bacon. Macroinvertebrate diversity and abundance in the headwaters of the Little Missouri River. Arkansas Academy of Sciences, 2021
- Paige E. Eddington, John L. Hunt, Matthew E. Grilliot, Troy L. Best, Isaac C. Castillo, Faith A. Johnson, Tyneshia L. Kilgore, and Jacob H. Courson. Energy Content of Seeds of Palmer's Pigweed (*Amaranthus palmeri*) in the Diet of Scaled Quail (*Callipepla squamata*) in Southeastern New Mexico. Arkansas Academy of Science. April 9-10, 2021. This year's Arkansas Academy meeting was virtual due to the pandemic. The presentation was recorded, and may be viewed at this link: https://www.youtube.com/watch?v=Vp3F2EylLhA.
- Faith A. Johnson, John L. Hunt, Matthew E. Grilliot, Troy L. Best, Isaac C. Castillo, Paige E. Eddington, Tyneshia L. Kilgore, and Jacob H. Courson. Energy Content of Seeds of Palmer's Pigweed (*Amaranthus palmeri*) in the Diet of Scaled Quail (*Callipepla squamata*) in Southeastern New Mexico. Poster Presentation. Arkansas INBRE, Fayetteville, Arkansas, October 29-30, 2021.
- Lauren Taylor, Andrew Williams "Determination of Fatty Acid Content in Algae." Poster, Arkansas INBRE Research Symposium, October 2021, Fayetteville, AR.
- Alaina Glover, Andrew Williams "Extraction and Analysis of Medicinal Biomolecules in Witch Hazel." Poster, Arkansas INBRE Research Symposium, October 2021, Fayetteville, AR.
- Quintero-Ferrer, Arturo, 52nd Annual Idaho potato conference Pocatello Idaho. Spanish session Manejo integral del campo.
- Quintero-Ferrer, Arturo, International Colloquium of Biotechnology, Microbiology, and Covid-19. The use of Plant biotechnology to combat diseases in Agriculture.
- Quintero-Ferrer, Arturo, Semana del conocimiento Jalisco 2021 Ciencia, tecnologia e inovacion para la salud. El microbioma featuring Microcosmos.
- Glover, Alaina; Teague, Alyssa; Totty, Jacy; Taylor, Lauren; Gurney, Lexi; Extraction and Analysis of Biomolecules from Natural Products, NASA-Arkansas Space Grant Consortium Annual Symposium, Petit Jean, AR, April 2022.
- Ty Say, Mark Hairston, Keith Blount: A Survey of Native Ticks and Their Pathogens in Arkansas, Posters at the Capitol, Little Rock AR, February 2022
- Mark Hairston, Ty Say, Keith Blount, Ticks and Tick-Borne Pathogens in Feral Hogs in Southeast Arkansas, Posters at the Capitol, Little Rock AR, February 2022
- Ty Say, Mark Hairston, Keith Blount: A Survey of Native Ticks and Their Pathogens in Arkansas, Arkansas Academy of Sciences, Arkadelphia, AR, April 2022
- Mark Hairston, Ty Say, Keith Blount, Ticks and Tick-Borne Pathogens in Feral Hogs in Southeast Arkansas, Arkansas Academy of Sciences, Arkadelphia, AR, April 2022

Notable Faculty or Faculty/Service Projects

- Dr. Richard Abbott is the director of the UAM Herbarium. He has received adjunct graduate faculty status at Arkansas State

University and serves on graduate committees there. He has worked with students from ASU, Murray State, and SIU-Carbondale on projects. He also taught a five week field botany course at the Hancock Biological Station, through Murray State University. He has worked with the Arkansas Natural Heritage Commission at 20 different sites within the state.

- Dr. Lynn Fox serves as the Assistant Dean for Mathematics

- Dr Chris Sims serves as the Assistant Dean for the Sciences

- Dr. Ed Bacon is the coordinator for the local Arkansas Game and Fish Stream team and serves as the director of the Turner Neal Museum. He is the UAM coordinator for the USM Gulf Coast Research Lab, and director of the Ouachita River Basin Research Laboratory. The Saline River Stream Team was recognized as the longest active Stream Team in the Arkansas Game and Fish Program. The Saline River Stream Team was the first Stream Team recognized in a publication in the White River Current in a publication on March 16, 2021.

- Ms. Laura Barton is the coordinator of the Regional ACTM Mathematics Contest

- Dr. Keith Blount is the director of the Research Program for Minority Students, and is the Arkansas representative for the Tick-Borne Disease Research Consortium which operates out of Texas A&M University. Keith Blount's research group was invited to join the Western Gulf Center for Excellence for Vector Borne Diseases -Tick Research Project. UAM is the only Arkansas university in this project. We received over $40,000 in funding to support student research, and are part of a proposal requesting $250,000 from the National Institute of Health and Center for Disease Control. UAM has been working closely with the Arkansas Department of Health and the Center for Disease Control on this and similar projects over the past year.

- Dr. John Hunt is the chair of the Pre-Professional Committee, and he is also the campus representative for the Goldwater Scholarship Program, and is a member of the Ouachita Mountain Biological Station Board of Governors.

- Dr. Ross Burrows as the director of the Southeast Region of the Arkansas Science Fair.

- Dr. Morris Bramlett is the campus representative to the NASA-Arkansas Space Grant Consortium. He serves as the director of the Pomeroy Planetarium, and is a member of the Arkansas Dean's Association Board of Directors (Term ending Sept 2022)

- Ms. Lura Cooper is a consultant for the Dumas School District. She will help with AP Calculus and ACT Prep. Ms. Cooper has also been selected to be a national AP Calculus grader

Faculty Grant Awards

- Dr. Keith Blount, $40,000 for student research, Arkansas Department of Health and the Center for Disease Control for the Tick-borne disease project.
- Dr. Andrew Williams, $10,000, NASA RID Grant for Determining Fatty Acid Content for Nutritional Value. (To support Alaina Glover, Lauren Taylor, Jacey Totty, Lexi Gurnsey, and Alyssa Teague)
- Dr. John Hunt, $1,000 UAM Faculty Research Award, Mammals of the Southwestern United States
- Dr. Andrew Williams, $1500 Arkansas Space Grant Consortium STEM Grant, Research support for Lauren Van Dee
- Dr. Andrew Williams, $1500 Arkansas Space Grant Consortium STEM Grant, Research support for Alaina Glover
- Dr. Djamali Muhoza, Dr. John Hunt, $12,000 UAM Centennial Circle Grant Award, for construction of the pre-professional performance lab
- Dr. Arturo Quintero-Ferrer, $1000 UAM Faculty Research Award, Tissue culture and DNA Extraction projects

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

- A new Math Teaching Option was proposed for the B.S. Mathematics degree. It requires fewer upper-level theoretical math courses and includes more courses focused on math pedagogy. The new option has received campus approval and awaits approval by the UA Board of Trustees.

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

Several changes in Mathematics have been approved by Curriculum and Standards; however have not completed the approval process at the state level. These include:

- Adding Praxis Content Knowledge as a new course
- Changing the title of Methods of Teaching Mathematics to Methods of Teaching Mathematics I
- Adding Methods of Teaching Mathematics II as a new course
- Changing MAED courses to allow them to count toward the math major, specifically the newly proposed Math Teaching Option
- Established a new option in the B.S. Mathematics degree, Math Teaching Option

The above changes were made because many students that had the goal of teaching mathematics found the Bachelor of Teaching and Learning degree in the School of Education was a much easier route. They would take far fewer mathematics courses, and none of the upper-level courses. Students could graduate, then enter the MAT program. Some taking this route to teaching mathematics have struggled on the Praxis exam in mathematics content. We hope that students will find the Math Teaching pathway less stressful because it avoids some of the upper-level theoretical courses in mathematics, and will provide a stronger mathematics background than the Bachelors of Teaching and Learning, or the BIS general studies degree. Hopefully this will increase the number of majors above the viability cut-off of four graduates per year.

- CS 3003 Python Programming was deleted as a Computer Science course and added as a CIS course for the Computer Information Systems academic unit.

This was done to make the course more mainstream for those in CIS and allow their faculty to teach the course.

- BIOL 3xx3 Climate Change was submitted, moving it from a special topics course to a listed course in the catalog.

This course will be a popular elective among the Math and Science majors and possibly CFANR majors. It has not been reviewed by Dean's Council or Curriculum and Standards at this time.

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

- Several faculty members are recording lectures and developing Blackboard assignments to allow students that are quarantined to keep up with their classes.
- A new Nuclear Magnetic Resonance spectrophotometer was purchased and is being used in chemistry labs. There have been some problems with the building not having consistent heating and cooling to maintain a stable instrument, but the students enjoy using the machine to help determine the structure of unknown compounds and to check results in their research projects involving synthesis
- Some of the classrooms were upgraded with a wireless tablet that will allow faculty to write on the Powerpoint, projected document camera image, or anything else on the computer screen. This is especially used by math faculty.
- Materials to upgrade the Organic and Biochemistry labs is in the process of being ordered with extra funding provided by the Chancellor - Thanks Chancellor Doss!
- Equipment and materials are being purchased for Anatomy and Physiology lab, and Microbiology lab. Those labs received funds because they are the primary lab courses taken by nursing majors and the funding came from the Windgate Foundation.
- Faculty continue to look for ways to provide educational materials at lower cost to the students. Some have written in house workbooks, lab manuals, and are doing more in house produced homework that doesn't require the purchase of access to book packages. We have a large number of students that do not purchase books, even though they are needed to be successful in the courses.

- Plans are being made to upgrade the external surfaces of the Science Center with paint, possibly some siding, and window coverings. It should greatly improve the appearance and make the facility more inviting to students.

Other Unit Student Success Data

Include any additional information pertinent to this report. Please avoid using student information that is prohibited by FERPA.

Acceptances into Professional Programs July 1, 2020-June 30, 2021

%Indicates acceptance prior to earning a degree

***Indicates graduation prior to 2020-21 academic year**

Last	First Name	City	St	Confer Dt	Acad Plan 1	Acad Plan 2	Initial Placement
Hawkins%	Avery	Hamburg	AR		Biochem		UAMS College of Pharmacy
Rodriguez	Jason	Hamburg	AR	May 2021	Biology	Biochem	Ark College of Health Ed, DO Program
Bratton	Scott	Monticello	AR	May 2021	Biology		Ark College of Health Ed, PT Program
Haire	Mallory	Star City	AR	May 2021	Nat Sci -LS		OT Progam
Friday	Kenzie	Monticello	AR	May 2022	Nat Sci - LS		Ark College of Health Ed, PT Program
Taylor	Lauren	Sheridan	AR	May 2022	Biology	Biochem	Masters of Biomedical Sciences (ACHE)
Taylor	Lauren	Sheridan	AR	May 2022	Biology	Biochem	Vanderbilt Summer Research Program
Adair	Caroline	Monticello	AR	Dec 2021	Nat. Sci-LS		Master of Arts in Teaching UAM
Gurnsey%	Alexia	Rison	AR		Biology	Biochem	UAMS Summer Research Program
Boykin	Colby	Monticello	AR	May 2021	Biology	Biochem	Ark College of Health Ed, DO Program
Blevins	Spencer A	White Hall	AR	May 2021	Biology	Biochem	Masters of Biomedical Sciences (ACHE)
Rice	Mckenzie	Hamburg	AR	May 2022	Biology		Respiratory Therapy, UAMS

Math and Sciences Graduates July 1, 2020 – June 30, 2021

Last	First Name	City	St	Confer Dt	Acad Plan 1	Acad Plan 2	Initial Placement
Burmeister	Blaise	Monticello	AR	May 2022	Biology		
Chacon	Ojani	Harlingen	TX	May 2022	Mathematics		Minor league baseball
Friday	Kenzie	Monticello	AR	May 2022	Nat Sci -LS		Physical Therapy School (ACHE)
Glover	Alaina	Hermitage	AR	May 2022	Biology	Biochemistry	Preparing to take MCAT
Harrington	Morgan	Casa	AR	May 2022	Biolgoy	Biochemistry	Preparing to take MCAT - possibly grad program
Hooks	Keifer	Rison	AR	May 2022	Biology	Biochemistry	Applying to medical schools
Kilgore	Tynesia	Monticello	AR	May 2022	Biology		
Nichols	Benjamin	Monticello	AR	May 2022	Nat Sci -LS		
Pitts	Kanesia	Monticello	AR	May 2022	Nat Sci - LS		CNA at Chapel Woods
Preston	Cain	Monticello	AR	May 2022	Biology		Medical Equipment Sales (Prosthetics)
Rice	Mckenzie	Hamburg	AR	May 2022	Biology		Respiratory Therapy School
Smith	Noah Lee	Monticello	AR	May 2022	Mathematics		Seeking employment in data science at Wal Mart
Taylor	Lauren	Sheridan	AR	May 2022	Biology	Biochemistry	Graduate Program in Biomedical Sciences
King%	Grant	Rison	AR	June 2022	Biochemistry		Harding Univ. College of Pharmacy
Johnson	Faith	Vilonia	AR	Dec 2021	Biology	Biochemistry	Applying to Physician's Asst Program
Adair	Caroline	Monticello	AR	Dec 2021	Nat Sci-LS		MAT -Teaching
Hibbard	Jonathan	Star City	AR	Dec 2021	Biology		Biologist for private hunting club
Pettit%	Hannah	Fordyce	AR	Dec 2021	Biochem		UAMS College of Pharmacy
Sorrows	Alex	Stuttgart	AR	Aug 2021	Biology		Mack's Prairie Wings
Holloway	Matthew	Hampton	AR	Aug 2021	Mathematics		
Gulledge	Anna	Crossett	AR	Aug 2021	Nat Sci		

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.
  - Enhance and increase scholarly activity for undergraduate and graduate faculty/student research opportunities as well as creative endeavors.
  - Revitalize general education curriculum.
  - 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.
  - Develop an emerging student leadership program under direction of Chancellor's Office.
  - Enhance and increase real world engagement opportunities in coordination with ACT Work Ready Community initiatives.
  - 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.
  - Invest in quality technology and library resources and services.
  - Provide opportunities for faculty and staff professional development.
  - Invest in quality classroom and research space.
  - 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.
  - Create an Institute for Teaching and Learning Effectiveness.

- Expand accessibility to academic programs.
  - Engage in institutional partnerships, satellite programs, alternative course delivery, and online partnerships with eVersity.
  - Create a summer academic enrichment plan to ensure growth and sustainability.
  - Develop a model program for college readiness.
  - Revitalize general education.
  - 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.
  - Increased efforts to earn research and grant funds.
  - Creation of philanthropic culture among incoming students, graduates and community.
    - Collaborating with Athletics Fundraising to maximize synergies.
    - Create a Growing our Alumni Base Campaign.
  - Encourage entrepreneurial opportunities where appropriate.
  - Participation in articulation agreements to capitalize on academic and economic resources.
  - 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: Assessment Information (Non AACU Assessments)

Assessment Report for Comparative Anatomy, Fall 2021, University of Arkansas at Monticello, John L. Hunt, Instructor.

On the first class day of the Fall 2021 semester, a pre-test was administered to the students in the Comparative Anatomy class at the University of Arkansas at Monticello. The pre-test consisted of 15 questions designed to test the students' prior knowledge of some of the most important concepts of Comparative Anatomy. The questions were a mix of "big-concept" and detail ideas, and concerned facts that a student who has completed the course would be expected to know, but that wouldn't necessarily be familiar to a student who hasn't had the class. The questions were multiple choice questions with a correct answer and four distractors. (A copy of the questions is included at the end of this report.) On the last day of class, the students were given the same questions. Students at the beginning of the course were not made aware that they would be assessed in this manner.

Only students who completed both the pre-test and post-test are included in the results given here. Average score on the pre-test was 4.0 out of 15, or 40.0% (n = 8, range 2-8, standard deviation 1.77). Average score on the post-test was 10.0, or 66.7% (n = 8, range 7-14, standard deviation 2.67). All students in the class registered an improvement on the post-test (n = 8, average increase 4.0 questions, range 1-6, standard deviation 1.93). Average percentage change in score was 81.7% (n = 8, range 16.7-250.0%, standard deviation 73.2%).

This is the seventh year that this type of assessment has been used in the Comparative Anatomy class, although this is the first assessment of this type since 2018, due to the pandemic. Results in 2021 were roughly equivalent to those obtained in the preceding years. Results seem to indicate that many of the objectives of the class are being met. The instructor will use the assessment again next year.

Questions used for both the pre-test and post-test are included on the next page.

1. Which of the terms below describes similarities due to convergent evolution?
    a. Homoplasy
    b. Homology
    c. Analogy
    d. Pleiotropy
    e. Anamorphy

2. Which of the following terms refers to a group that you don't belong to?
    a. Tetrapoda
    b. Chordata
    c. Eutheria
    d. Archosauria
    e. Amniota

3. The process of induction is an important part of which of the following?
    a. Evolution
    b. Development
    c. Respiration
    d. Digestion
    e. Muscle function

4. Vertebrate jaws originally evolved from:
    a. Dermal bones

b. Cervical vertebrae
c. Cranial bones
d. Gill arches
e. Fin rays

5. Zygapophyses are projections found on:
    a. Inner wall of the digestive tract
    b. Jawbones
    c. Fins
    d. Vertebrae
    e. Tongue

6. Which one of the following structures is the evolutionary ancestor of the human forearm:
    a. Lobed fin
    b. Ray fin
    c. Procoracoid
    d. Gill arch
    e. Interclavicle

7. Hypobranchial and branchiomeric musculature is associated with:
    a. Lungs
    b. Limbs
    c. Veterbral column
    d. Eyeballs
    e. Jaws

8. From an evolutionary standpoint, most fishes and tetrapods started out with a specific number of aortic arches. That number is:

a. Four
b. Five
c. Six
d. Eight
e. Twelve

9. One of the following organs does not develop embryologically from the digestive system. Which is it?
    a. Lung
    b. Liver
    c. Intestine
    d. Stomach
    e. Kidney

10. Pronephric, mesonephric, and metanephric are different types of:
    a. Kidney
    b. Lung
    c. Liver
    d. Brain
    e. Vertebrae

11. In which type of animal is the male reproductive system most closely related to the excretory system?
    a. Kangaroo
    b. Red-winged blackbird
    c. Perch
    d. King snake
    e. African elephant

12. Another name for the telencephalon is:
    a. Olfactory nerve

b. Cerebrum
c. Pancreas
d. Cranium
e. Mandible

13. The sclera, ciliary body, and suspensory ligament are structures associated with:
    a. Esophagus
    b. Pancreas
    c. Brain stem
    d. Spinal cord
    e. Eye

14. Mammals have a four-chambered heart with two atria and two ventricles. Which of the following animals also has such a heart?
    a. Lungfish
    b. Bull shark
    c. Musk turtle
    d. American alligator
    e. Iguana

15. The part of the skull which originates with structures associated with the gills of early vertebrates is called:
    a. Splanchnocranium
    b. Dermatocranium
    c. Neurocranium
    d. Chondrocranium
    e. Glossocranium

Assessment Report for Evolution, Spring 2022, University of Arkansas at Monticello, John L. Hunt, Instructor.

On the first class day of the Spring 2022 semester, a pre-test was administered to the students in the Evolution class at the University of Arkansas at Monticello. The pre-test consisted of 15 questions designed to test the students' prior knowledge of some of

the most important concepts of Evolution. The questions were a mix of "big-concept" and detailed ideas, and concerned facts that a student who has completed the course would be expected to know, but that wouldn't necessarily be familiar to a student who hasn't had the class. The questions were multiple choice questions with a correct answer and four distractors. (A copy of the questions is included at the end of this report.) On the last day of class, the students were given the same questions. Students at the beginning of the course were not made aware that they would be assessed in this manner.

Only students who completed both the pre-test and post-test are included in the results given here. Average score on the pre-test was 6.1 out of 15, or 40.7% (n = 19, range 3-9, standard deviation 1.55). Average score on the post-test was 10.1 out of 15, or 67.0% (n = 19, range 6-13, standard deviation 1.58). All of the students registered an improvement on the post-test (n = 19, average increase 4.0 questions, range 1-7, standard deviation 1.63). Average percentage change in score was 75.2% (n = 19, range 14.3-200.0%, standard deviation 48.4%).

This is the eighth year that this type of assessment has been used in the Evolution class. (No assessment was conducted in 2020 due to the Covid-19 pandemic). Results seem to indicate that many of the objectives of the class are being met. This year's results were roughly the same as in 2021, but the differences are small, and probably not statistically significant. Questions used for both the pre-test and post-test are included on the next page.

1. Which of the following is the best definition of “evolution?”
    a. Adaptation to environmental change.
    b. Selection of the best traits.
    c. Change in gene frequency between generations.
    d. Change over time.
    e. Mutation of genes into new alleles.

2. The most critical factor in the evolution of new species is:
    a. Large amounts of inbreeding
    b. High heterozygosity
    c. Sexual dimorphism
    d. Reproductive isolation
    e. Low genetic diversity.

3. Which of the following is ***most*** compatible with the idea of evolution through natural selection?
    a. Chain of Being
    b. Fixity of species
    c. Mutability of species
    d. Special creation
    e. Theory of Acquired Characteristics

4. Which of the following concepts is crucial to building phylogenies?
    a. Analogous structures
    b. Sympatry
    c. Allopatry
    d. Convergent evolution
    e. Parsimony

5. “Any non-random force which causes differential reproductive success of organisms with different genetic traits” is a good definition of:
    a. Evolution
    b. Adaptation
    c. Selection
    d. Fitness
    e. Mutation

6. Which of the following is the best description of the function of HOX genes:
    a. Providing variation for the immune system.
    b. Allowing an increase in hair coloration.
    c. Control of morphogenesis.
    d. Increasing fecundity.
    e. Reduction of mutations.

7. The Hardy-Weinberg Law describes:
    a. Sexual selection possibilities.
    b. How recessive mutations are maintained in a population.
    c. The speed with which new species are formed.
    d. Equilibrium of allele frequencies in a population.
    e. Formation of biogeographical regions.

8. The Hamilton-Zuk hypothesis relates sexual selection to:
    a. Number of body segments.
    b. Size of genitalia.
    c. Number of offspring.
    d. Parasite load.

e. Feather color.

9. At what level does natural selection act most strongly?
    a. Gene
    b. Cell
    c. Species
    d. Family
    e. Genus

10. Which of the following taxonomic groups contains organisms that are probably most similar to the first organisms to arise on earth?
    a. Archaea
    b. Eubacteria
    c. Protista
    d. Eucarya
    e. Fungi

11. What is another word that means exactly the same thing as “type specimen?”
    a. Paratype
    b. Holotype
    c. Topotype
    d. Allotype
    e. Neotype

12. Which of the following is NOT a real proposed hypothesis that attempts to explain the disappearance of the dinosaurs?
    a. Terminal Constipation Hypothesis
    b. Arctic Spillover Hypothesis
    c. Death Star Hypothesis
    d. Genetic Collapse Hypothesis

e. Extraterrestrial Impact Hypothesis

13. Cuckoos which lay their eggs in the nest of other birds color their eggs to match those of the host bird. This is a form of:
    a. Mullerian mimicry
    b. Batesian mimicry
    c. Photomimicry
    d. Aggressive mimicry
    e. Mertensian mimicry

14. Of the following species concepts, which one is most commonly used when discussing sexually reproducing animals?
    a. Ecological
    b. Phenetic
    c. Recognition
    d. Biological
    e. Morphological
15. For natural selection to operate:

    a. members of a population must lack variation

    b. all offspring in a population must survive

    c. advantageous traits must be genetic in nature

    d. there must be an excess of available resources

    e. there must be no competition between individuals.

Assessment Report for Introduction to Biological Sciences, Fall 2021, University of Arkansas at Monticello, John L. Hunt, Instructor.

On the first class day of the Fall 2021 semester, a pre-test was administered to the students in the Introduction to Biological Sciences classes taught by John Hunt at the University of Arkansas at Monticello. The pre-test consisted of 15 questions designed to

test the students' prior knowledge of some of the most important concepts of Biology. The questions were a mix of "big-concept" and detail ideas, and concerned facts that a student who has completed the course would be expected to know, but that wouldn't necessarily be familiar to a student who hasn't had the class. The questions were multiple choice questions with a correct answer and four distractors. (A copy of the questions is included at the end of this report.) On the last day of class, the students were given the same questions. Students at the beginning of the course were not made aware that they would be assessed in this manner.

Only students who completed both the pre-test and post-test are included in the results given here. Most years, Fall and Spring classes are assessed together, but this year I did not teach a section of the class. Average score on the pre-test was 9.4 out of 15, or 62.9% (n = 16, range 4-12, standard deviation 2.39). Average score on the post-test was 11.1, or 74.0% (n = 15, range 8-15, standard deviation 2.32). Of those who took both pre-test and post-test, 12 registered an improvement on the post-test (n = 16, average increase 1.6 questions, range -4-6, standard deviation 2.39). Average percentage change in score was 24.2% (n = 16, range -33.3-150.0%, standard deviation 40.4%). Three students actually did worse on the post-test than on the pre-test, and one registered no change.

This is the eighth year that this type of assessment has been used in the Introduction to Biological Science class. Results seem to indicate that many of the objectives of the class are being met. Because of the small sample size, it is difficult to compare the results of this year's assessment with previous years. This year's pre-test average was a bit higher than average, and many of the students who began the class dropped before the post-test was administered, which skewed the score on the pre-test higher than it normally is (average on the pre-test with students who dropped included was 8.4).

The instructor will use the assessment again next year. It should be noted that this is a freshman class, and many of the students in the class clearly came directly from high schools with good biology programs. In addition, many of the students who take the pre-test but not the post-test because they have dropped the class are students who are not well-prepared, which would seem to skew the data in an unfavorable way against potential improvement. The instructor is contemplating ways to compare DFW rates from year to year to include class dropouts in assessment. Questions used for both the pre-test and post-test are included on the next page.

1. Which of the following is NOT one of the basic types of organic molecules found in living things?
    a. Carbohydrates
    b. Proteins
    c. Salts
    d. Nucleic acids
    e. Lipids

2. The primary difference between prokaryotic and eukaryotic cells is that prokaryotic cells DO NOT contain membrane-bound structures called:
    a. Cilia
    b. Chromosomes
    c. Organelles
    d. Ribosomes
    e. Sutures

3. Which of the following is the BEST definition of the word “gene?”
    a. Physical trait exhibited by an organism.
    b. Section of DNA molecule that contains instructions for building a protein.
    c. Part of the cell membrane that causes specific behavior.
    d. Sperm cell or egg cell; a gamete.
    e. All of the chromosomes found in a given individual.

4. The aerobic process of breaking down organic molecules such as glucose to build ATP is called:
    a. Photosynthesis
    b. Translation
    c. Methylation
    d. Digestion
    e. Cellular respiration

5. Which of the following is the best definition of a scientific theory?
    a. A law which can be stated mathematically
    b. An explanation for observations which has a good deal of evidence to support it
    c. An educated guess
    d. An observation of natural phenomena
    e. A statement of things that are unknown

6. Proteins are complex molecules made of subunits called:
    a. Hydrocarbons
    b. Amino acids
    c. Sugars
    d. Nucleotides
    e. Fatty acids

7. Spontaneous movement of molecules from an area of higher concentration to an area of lower concentration is called:
    a. Crenation
    b. Brownian motion
    c. Reduction
    d. Diffusion
    e. Concentration dispersal

8. All of the living organisms interacting within a specific area make up a:
    a. Population
    b. Community
    c. Ecosystem
    d. Species
    e. Biome

9. “A change in allele frequencies between generations” is a simple definition of:

a. Mutation
b. Speciation
c. Evolution
d. Fitness
e. Stabilizing selection

10. Which of these terms ***best*** describes the overall structure of DNA?
    a. phospholipid bilayer
    b. helix
    c. double helix
    d. triple helix
    e. modified polypeptide chain

11. Where do plants get carbon that they make into organic molecules?
    a. From groundwater absorbed by roots
    b. Symbiotic fungi
    c. The sun
    d. Carbon dioxide from the atmosphere
    e. Other organisms

12. In animals, meiosis occurs to produce:
    a. Somatic cells
    b. Clones
    c. Diploid cells
    d. Red blood cells
    e. Gametes

13. Which of the following is a byproduct of photosynthesis?
    a. Carbon dioxide
    b. Glucose
    c. Riboflavin
    d. Oxygen
    e. Nitrogen gas

14. Why does your body need oxygen?
    a. DNA molecules don't break down properly without oxygen
    b. Kidneys use oxygen to construct molecules of urine
    c. Oxygen is necessary to get rid of carbon dioxide
    d. Oxygen allows cells to get more usable energy from organic molecules
    e. Lack of oxygen allows anti-oxidants to trigger apoptosis (cell death).

15. A true-breeding plant that produces red flowers is crossed with a true-breeding plant that produces white flowers. All of the flowers of all of the offspring are red. The best explanation for this is:
    a. the red allele is recessive to the white allele
    b. all of the offspring are homozygous red
    c. the red allele is dominant to the white allele
    d. the alleles are codominant
    e. red is an easier color to produce