University of Arkansas at Monticello
Academic Unit Annual Report

Unit: College of Forestry, Agriculture, and Natural Resources

Academic Year: 2022 - 2023

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.

Vision
The College of Forestry, Agriculture and Natural Resources will develop future leaders and deliver science-based solutions through discovery, learning, and engagement. These efforts will result in healthy and productive forest, agricultural, and natural resources to help ensure social and economic prosperity.

Mission Statement
Our mission is to nurture the intellectual and personal development of our students, enlarge the body of knowledge in forestry, agriculture, and natural resource management, and to disseminate new ideas and technology. Our graduates will be life-long learners who succeed within their chosen discipline, and will promote and use creative, science-based solutions that enhance the quality of life of the people and communities we serve.

Student Learning Outcomes
Graduates of the College of Forestry, Agriculture and Natural Resources will:

- Understand basic theory and practice, and be skilled in applying appropriate tools and technology, for their chosen field of study
- Recognize how land management relates to the larger environment, economy, and society.
- Apply science-based knowledge and information to analyze and creatively solve management problems
- Demonstrate essential communication skills (interpersonal communication, nonverbal communication, written communication, and oral communication) that clearly provide relevant information and solutions to problems to diverse communities.

Strategic Plan

1. ***Student Success —fulfilling academic and co-curricular needs***

a. Develop, deliver, and maintain quality academic programs.

Continuing Goal: Successfully navigate challenges of delivering academic programs during COVID-19 pandemic.

Action: Plan for implementation of safety measures for delivery of courses in a classroom setting, while also preparing for quickly pivoting to remote delivery of courses.

- KPI-1: Develop and implement a plan for operation of facilities that is specific, yet flexible, to address changing state and federal COVID-19 safety guidelines.

- KPI-2: Develop and implement a plan for safe delivery of courses while also allowing the ability to quickly change modes of delivery in response to institutional requirements.

- KPI-3: Obtain supplies and materials necessary to safely implement facility and course delivery plans.

New Goal: Develop and implement new degree and credential options in forestry, agriculture, and natural resources.

- KPI-1: Revise forest resources graduate degree curricula to reflect the greater array of graduate-level course offerings in CFANR.

- KPI-2: Explore curriculum revisions to enhance field experience and expertise.

- KPI-3: Explore and develop technical credential offerings within forestry, agriculture, and natural resources to bolster workforce preparedness.

2. ***Enrollment and Retention Gains***

b. Coordinate and promote marketing efforts that will highlight alumni, recognize outstanding faculty and staff, and spotlight student success.

Continuing Goal: Enhance alumni engagement with CFANR teaching, research, and extension programs.

Action: Increase communications of CFANR activities to alumni and alumni involvement in teaching.

- KPI-1: Create database of CFANR alumni.
- KPI-2: Create CFANR newsletter of teaching, research, and extension outputs to mail and electronically provide to alumni and other CFANR stakeholders.

c. Identify and enhance pipeline for recruiting.

Continuing Goal: Improve recruitment of qualified high school and community college students into CFANR degree programs.

Action: Obtain and deliver recruitment materials to potential recruits. Organize supporters and alumni to aid in student recruitment efforts.

- KPI-1: Work with UAM to obtain previously designed recruitment materials so they can be delivered to potential students.
- KPI-2: Actively manage social media accounts to promote College activities and aid in recruitment efforts.

New Goal: Increase visits with high school students for recruiting.

- KPI-2: Work with public and private partners to increase their volunteering for College recruitment.
- KPI-3: Visit schools statewide for recruiting.

Table 1: Assessment of Key Performance Indicators

KPI	Assessment of Progress	Implications for Future Planning/Change
KPI-1.1: Develop and implement a plan for operation of facilities that is specific, yet flexible, to address changing state and federal COVID-19 safety guidelines.	KPI-1.1 was accomplished; it became less actionable by the spring 2023 semester as COVID-19 became less of a health concern.	This plan will be used if COVID-19 resurges and prompts greater safety measures, but with COVID-19 currently abated this KPI will be idled in the upcoming academic year as a continuing goal.
KPI-1.2: Develop and implement a plan for safe delivery of courses while also allowing the ability to quickly change modes of delivery in response to institutional requirements.	KPI-1.2 was accomplished; it became less actionable by the spring 2023 semester as COVID-19 became less of a health concern.	This plan will be used if COVID-19 resurges and prompts greater safety measures, but with COVID-19 currently abated this KPI will be idled in the upcoming academic year as a continuing goal.
KPI-1.3: Obtain supplies and materials necessary to safely implement facility and course delivery plans.	KPI-1.3 was not necessary to carry out; there were sufficient safety supplies and materials from the prior year to utilize and course delivery was relatively unperturbed by COVID-19 as it became less of a health concern.	These actions will be undertaken if COVID-19 resurges, but this item will be idled in the coming academic year as a continuing goal.
KPI-2.1: Create database of CFANR alumni.	KPI-2.1 was fulfilled, and a continual update of the database is implemented through surveys of graduates and alumni encountered at professional society meetings and through newsletters.	Future reporting periods will report on update efforts for the CFANR alumni database rather than its creation.
KPI-2.2: Create CFANR newsletter of teaching, research, and extension outputs to mail and electronically provide to alumni and other CFANR stakeholders.	KPI-2.2 was nearly completed in this reporting period. Editorship was assigned to a senior faculty motivated to enhance CFANR alumni and stakeholder engagement, the CFANR media director identified software that will be the most cost-efficient and user-friendly for publishing the newsletter, and the editor and CFANR dean developed a format from studying newsletters	The inaugural issue will be developed as a team effort by faculty and disseminated to alumni electronically and by hardcopy in the next reporting period.

KPI	Assessment of Progress	Implications for Future Planning/Change
	of comparable units at different universities.	
KPI-3.1: Work with UAM to obtain previously designed recruitment materials so they can be delivered to potential students.	KPI-3.1was achieved, and all materials were dispersed at recruiting booths at diverse agriculture and forestry conferences for high school youth and professional societies in this reporting period.	In future reporting periods the replenishment of recruiting materials will be a continuing goal.
KPI-3.2: Actively manage social media accounts to promote College activities and aid in recruitment efforts.	KPI-3.1was achieved, with social media posts having a reach of approximately 100,600 readers in this reporting period.	Social media accounts will continue to be used for promoting and recruiting for CFANR. Frequency and quality of materials posted to these accounts will continue to escalate with faculty awareness and training in their value.

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.	Students will demonstrate critical communication skills (interpersonal communication, nonverbal communication, written communication, and oral communication) by clearly providing informative information and presenting solutions to problems for diverse audiences.	Underlying all of the tenets of the UAM mission is the ability to communicate effectively to diverse audiences.	In accordance with the CFANR vision, developing student written and verbal communication skills is a critical component of developing future forestry, agriculture and natural resource management leaders.
Critical Thinking: Students will demonstrate critical thinking in evaluating all forms of persuasion and/or ideas, in formulating innovative strategies, and in solving problems.	Students will understand basic theory and practice, and be skilled in applying appropriate tools and technology, for their chosen field of study. Students will apply science-based knowledge and information to analyze and solve management problems.	Understanding theory and practice is critical for achieving the UAM mission of educating diverse learners to succeed in a global environment. Application of the scientific method to the solution of problems is an essential component of meeting UAM's mission to promote innovative leadership, scholarship, and research.	The primary objective of the CFANR is to foster student success, both academically and professionally. Competency in the theory and practice within their field is essential for their success. The CFANR allocates significant resources to provide students with the tools and technology necessary for them to develop and effectively address management problems.

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
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.	Students will recognize how land management relates to the larger environment, economy, and society.	Land management decisions are foundational to resource utilization for economic growth, which is integral to the UAM mission of improving quality of life through sustainable economic development.	Beyond the grounding principles of theory and practice, successful students must appreciate how their management efforts influence the global resource base.
Teamwork: Students will work collaboratively to reach a common goal and will demonstrate the characteristics of productive citizens.	Students will apply science-based knowledge and information to analyze and solve management problems.	Solution of problems via a collaborative, team approach is an essential component of meeting UAM's mission to promote innovative leadership, scholarship, and research.	The CFANR allocates significant resources to provide students with the tools and technology necessary for them to collaboratively develop and effectively address management problems.

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

Assessment of Student Performance and CFANR Programs
The CFANR assessment system utilizes a combination of approaches directed toward assessing student performance, individual courses, and overall programs. This hierarchical system begins with the evaluation of individual student performance.

Assessment of Individual Student Performance
Performances of individual students are evaluated using a variety of different tools. These generally fall into two major groups. First, traditional methods include grading of tests and assignments in individual courses, transcript reviews, competency reviews in labs, and field practices. Second, student performance is assessed through the use of core competencies. These core competencies are essentially student learning objectives for each course. Students are required to demonstrate that they have achieved these core competencies before they are able to receive a passing grade for a course. Therefore, this requirement of core competencies is separate from traditional grading, and works as an additional layer in assessing student performance. This requirement also ensures that students learn certain basic skills from every class and works as a barrier against passing a course through memorization.

Evaluation of CFANR Courses
The second step in the assessment system is evaluation of courses offered within the College. This type of assessment is also done through a variety of tools that fall under two broad categories. The traditional tools for course evaluation include student evaluation of courses, student evaluation of instructors and peer evaluations. In addition, courses also are evaluated through summaries of student performance in achieving core competencies.

Evaluation of CFANR Programs

The following tools are used for program-level assessment:

<u>Capstone Course and Senior Seminars</u>
The natural resources management degree requires a capstone Practicum experience that challenges students to integrate materials learned from previous courses in the development of a management plan presented to actual forest landowners. In order to be successful in this course, the students must demonstrate critical thinking, problem solving, planning, and development skills along with the skills of oral and written communication. Since the students are required to work in groups, this course also tests the students' abilities in working as part of a team.

As previously mentioned, this course requires teamwork. Teams are assigned parcels of forested land typically owned by non-

industrial private forest landowners in the state. Each team is required to complete a comprehensive forest resource management plan for their parcel within the course of a semester (spring semester of their senior year). These plans require 10-15 hr/week of fieldwork involving survey of the land, inventory of timber, wildlife, and other resources. Students are expected to cooperate in the collection of these data. This provides an important and interesting experience for the students in that they have to work with students pursuing a different degree option who probably have a somewhat different way of looking at natural resource issues. The teams are also required to communicate with their respective landowner and understand his/her plans for the land. All of this information is then used to prepare the management plans. The quality of the management plan demonstrates each team's ability to integrate previous coursework into a working plan that meets specific management objectives. The teams are then required to present their plans in seminars that are open to the public. These seminars are attended by many faculty members, who actively participate in discussions and test the students through rigorous questioning. Ample feedback is provided as to the plan's effectiveness and integration of relevant course material. The teams also present their plans to their respective landowners.

Although Agriculture students do not complete a capstone course as part of their degree requirements, they do complete a Senior Seminar to demonstrate their ability to speak about a variety of issues. Students are evaluated by their fellow students during their presentation and feedback is also provided by their instructor.

Feedback Loop

The feedback loop is an essential step and ensures the dynamic nature of an assessment system. The feedback loop is built into every level of the CFANR assessment system. The students provide feedback to their instructors regarding course management and grading. Evaluation of core competencies allows feedback at all levels. First, it encourages communication among students and instructors, which in turn allows the instructors to adjust course materials and fine-tune day-to-day management of courses. Second, the summary data also feed valuable information back to the College for program-level assessment. Through program-wide linkages of core competencies, important feedback is provided to the faculty allowing them to adjust the curricula when necessary. Lessons from student performance assessment have played important roles in a number of unit decisions. Implementation of required student learning outcomes/ core competencies across CFANR courses now are used as a metric of preparedness and proficiency.

UNIVERSITY ASSESSMENT: AACU RUBRIC DATA
Oral Communication

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	2	5	1	0	0	3.1	8
Language	0	5	3	0	0	2.6	8
Delivery	2	5	0	0	0	2.9	8
Supporting Material	3	5	0	0	0	2.9	8
Central Message	0	8	0	0	0	3.4	8

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

Strengths

- 88 to 100% of students assessed had scores of 2 or greater
- No students assessed had scores less than 2

Weaknesses

- The Language subcategory had the lowest mean score

Opportunities for Growth

- Enhancing instruction on using compelling language and polished speaking

Threats to Effectiveness

- Student reluctance to conduct public presentations and participate in class discussions.

What actions, if any, do you recommend to improve student performance in this learning outcome?
Instructors in these courses are providing diverse opportunities for students to communicate on topics relevant to their disciplines.

What revisions, if any, to the assessment process do you recommend to acquire more useful data in this learning outcome?
No revisions are suggested

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	4	10	9	5	2	2.3	30
Content Development	2	12	7	7	2	2.2	30
Genre and Disciplinary Conventions	2	9	0	0	0	3.2	11
Sources and Evidence	1	8	2	0	0	2.9	11
Control of Syntax and Mechanics	3	8	9	9	0	2.1	30

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

Strengths

- Most subcategories had 70% or greater proportions of scores 2 or greater
- Students were effective at conveying material provided in class readings and films into reports

Weaknesses

- Context and Purpose for Writing and Content Development subcategories had students with 0 ratings
- Control of Syntax and Mechanics subcategory had the lowest mean score and 33% of scores lower than 2

Opportunities for Growth

- Greater student proficiency in using compelling content to illustrate subject mastery and conventions used to write about their disciplines

Threats to Effectiveness

- Students exhibit greater summarization skills than analysis/synthesis skills in their writing

What actions, if any, do you recommend that might improve student performance in this learning outcome?
Assigning students writing assignments in longer formats for conveying in-depth ideas, enhanced instructor feedback on errors made by students in writing in compelling manner and in grammar and organization of writing.

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?
No revisions suggested.

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	12	15	7	0	2.1	34
Evidence	0	4	5	0	0	2.4	9
Influence of Context and Assumptions	0	4	5	0	0	2.4	9
Student's Position (Perspective, Thesis/Hypothesis)	4	5	0	0	0	3.4	9
Conclusion and Related Outcomes (Implications and Consequences}	4	13	10	7	0	2.4	34

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

Strengths

- 79 to 100% of students assessed had critical thinking scores of 2 or greater
- No students were rated as 0
- Students showed relatively high proficiency in providing their perspectives and understanding hypothesis testing
- Mean score of all critical thinking metrics increased 21% since the prior reporting period

Weaknesses

- Students exhibited relatively weaker proficiency in explanation of issues
- Instructors identified time constraints for their courses limiting time spent on some topics
- Student efficacy in translating data and observations into management recommendations

Opportunities for Growth

- Providing students with more tasks associated with synthesizing and explaining issues relevant to courses

Threats to Effectiveness

- Low student integration of course materials through critical thinking

What actions, if any, do you recommend that might improve student performance in this learning outcome?
Increased debate-format student activities, assignments synthesizing materials from diverse sources, discussion assignments, and applied knowledge activities to promote greater student critical thinking. Provide practice reading of peer-reviewed scientific literature and professionally-composed management plans.

What revisions, if any, to the assessment process do you recommend that might help us to acquire more useful data in this learning outcome?
No suggestions recommended.

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?

Teamwork

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							
Facilitates the Contributions of Team Members							
Individual Contributions Outside of Team Meetings							
Fosters Constructive Team Climate							
Responds to Conflict							

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?

Summarize all of your unit changes predicated on assessment data.

There was consistency in these rubrics that student performance is weakest in integrating sources of information, interpreting it, making their own interpretations of the information, and communicating their inferences and recommendations. Incorporating throughout our curricula more assignments and testing that tasks that requires students to take in diverse sources of information and make inferences about its meaning and application relevant to learning objectives of the course and/or to their professions can enhance their skills in these weaker areas.

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.)

- All course syllabi clearly state the SLOs for successful completion of the course.
- The CFANR webpages within the UAM website clearly outlines the requirements for all degrees and degree options.
- Promotional materials for the CFANR direct interested parties to full details about the CFANR mission and SLOs, as well as degree programs.

Enrollment

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

UNDERGRADUATE PROGRAM MAJOR: B.S. Natural Resources Management

Classification	Fall 2020	Fall 2021	Fall 2022	3-Year Total & Average	10-Year Total & Average
Freshman	23	23	17	63/21	335/34
Sophomore	6	10	17	33/11	138/14
Junior	14	15	10	39/13	129/13
Senior	19	11	12	42/14	136/14
Post Bach	1	0	0	0/0	0/0
Total	63	59	56	178/59	749/75

UNDERGRADUATE PROGRAM MAJOR: B.S. Agriculture

Classification	Fall 2020	Fall 2021	Fall 2022	3-Year Total & Average	10-Year Total & Average
Freshman	34	32	23	89/30	434/43
Sophomore	27	26	23	76/25	245/25
Junior	16	14	16	46/15	222/22
Senior	25	12	20	57/19	234/23
Post Bach	0	1	0	1/0	3/0
Total	102	85	82	269/90	1138/114

UNDERGRADUATE PROGRAM MAJOR: B.S. Land Surveying

Classification	Fall 2020	Fall 2021	Fall 2022	3-Year Total & Average	10-Year Total & Average
Freshman	4	2	6	12/4	54/5
Sophomore	6	3	2	11/4	31/3
Junior	3	2	1	6/2	21/2
Senior	3	2	2	7/2	27/3
Post Bach	0	0	0	0/0	1/0
Total	16	9	11	36/12	134/13

UNDERGRADUATE PROGRAM MAJOR: Pre-Vet

Classification	Fall 2020	Fall 2021	Fall 2022	3-Year Total & Average	10-Year Total & Average
Freshman	8	12	11	31/10	69/7
Sophomore	4	1	4	9/3	23/2
Junior	2	4	3	9/3	23/2

Classification	Fall 2020	Fall 2021	Fall 2022	3-Year Total & Average	10-Year Total & Average
Senior	3	4	2	9/3	21/2
Post Bach	0	0	0	0/0	0/0
Total	17	21	20	58/19	136/14

GRADUATE PROGRAM MAJOR: Forest Resources (M.S.)

	Fall 2020	Fall 2021	Fall 2022	3-Year Total & Average
ENROLLMENT	18	20	24	21

GRADUATE PROGRAM MAJOR: Waterfowl Habitat and Recreation Management (Grad. Cert.)

	Fall 2020	Fall 2021	Fall 2022	3-Year Total & Average
ENROLLMENT	---	4	4	---

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

Strengths

- The CFANR has unique programs in Natural Resources Management and Land Surveying.
- Land Surveying freshmen enrollment tripled since the prior year; all of its courses were offered in hyflex modality throughout this reporting period.
- Post-graduate enrollment continued an increasing trend, likely due to faculty success with grant funding for stipends.

Weaknesses

- Freshmen enrollment in Natural Resources Management and Agriculture declined for a second year despite aggressive media presence from CFANR. Freshmen enrollment in these degrees appears to have returned to fall 2021 levels in fall 2023, so the cause of this decline is uncertain.

Opportunities for Growth

- Increased in-person recruiting at high schools by the CFANR recruiting specialist, faculty, and students will be of benefit in raising awareness of CFANR degree options.

Threats to Effectiveness

- Despite its enrollment gain, the land surveying program needs further increases in enrollment for long-term success.

Progression/Retention Data

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

Major: Agriculture B.S.	Number	Percentage
Number of majors classified as juniors (60-89 hours) in fall 2020	**16**	**100**
Number and percentage graduated in that major during 21-22 academic year	12	75
Number and percentage that graduated in that major during 22-23 academic year	2	13

Major: Natural Resources Management B.S.	Number	Percentage
Number of majors classified as juniors (60-89 hours) in fall 2020	**14**	**100**
Number and percentage graduated in that major during 21-22 academic year	4	29
Number and percentage that graduated in that major during 22-23 academic year	2	14

Major: Land Surveying B.S	Number	Percentage
Number of majors classified as juniors (60-89 hours) in fall 2020	**3**	**100**
Number and percentage graduated in that major during 21-22 academic year	2	67
Number and percentage that graduated in that major during 22-23 academic year	0	0

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

Strengths

- Although the Natural Resources Management B.S. students had relatively low percentage graduating during the 2021-2022 and 2022-2023 academic years, 43% of these students showed in records provided for the annual report showed their B.S. was conferred in the 2020-2021 academic year. The source of this issue is unclear.
- Students that reached their junior year in all CFANR BS degrees had high probability (80% averaged for all B.S. degrees of CFANR for this reporting period) of completing their degree.
- Relative to the prior reporting period, 81% fewer students required an additional year to complete their degree

Weaknesses

- With the low enrollment of Land Surveying, the departure of a single student before completing their degree had a more pronounced effect on percentage graduating

Opportunities for Growth

- Fostering more transfer students and recruiting more high school students with college credits can help further decrease the average time CFANR students complete their degrees.

Threats to Effectiveness

- Maintaining faculty engagement in advising and mentoring to assure student success.

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*

Not Applicable to CFANR

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	2020-2021	2021-2022	2022-2023	Three-Year Total	Three-Year Average
CFANR- B.S. Natural Resources Mgmt.[1]	19	12	13	44	15
CFANR- A.S. Natural Resources Mgmt.	3	5	6	14	5
CFANR- A.S. Land Surveying Technology	2	0	3	5	2
CFANR-B.S. Land Surveying	4	2	1	7	2
CFANR- A.A.S. Forest Technology	0	0	0	0	0
GFOR- M.S. Forest Resources	4	3	7	14	5
GFOR- Grad. Cert. Waterfowl & Rec.	---	4	3	---	---
CFANR- B.S.[2] Agriculture	16	21	12	49	16
CFANR- A.S. Agriculture	7	6	6	19	6

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

The number of degrees/credentials awarded in the Natural Resources Management, Land Surveying, and Agriculture B.S. degrees were consistent with prior years and similar to the three-year average. The number of Natural Resources A.S., Agriculture A.S., Land Surveying A.S., Forest Technology A.A.S., and Forest Resources M.S. degrees were consistent with prior years as well. The number of students receiving A.S. degrees lags behind the number of B.S. degrees in Natural Resources and Agriculture. Faculty are reminded at the beginning of every semester about the need to mentor students to receive A.S. degrees en route to B.S. degrees with which they are cognate, but some faculty express frustration that it is not a straightforward process for students to apply for graduation with A.S. degrees.

The Land Surveying and Land Surveying Technology programs continued to have relatively low degrees awarded as a function of low enrollment. Modifications to all Land Surveying courses into hyflex modality were implemented in this reporting period to improve enrollment. Efforts will be made in the next reporting period to provide hyflex modality to CFANR courses also taken toward the Land Surveying degree.

The Forest Technology A.A.S. degree continued no graduates in the past year. Marketing efforts for this degree must be conducted to better reach students interested in a forest technician career; course requirements for this degree will also be visited with faculty and CFANR stakeholders to make sure they align with employer needs and student interests.

Tracking graduates

Summarize how you track the career progression of your unit's graduates.

Each semester CFANR has an online survey of graduating students to determine their jobs, their jobs' relationship to their degrees, and starting salaries. Students who respond to the survey are entered into a drawing for a UAM-themed prize to incentivize responses. The CFANR also hosts alumni events for forestry each fall as part of the Arkansas Forestry Association annual meeting and for agriculture each spring as the Aggie Comeback dinner. At these events, surveys of alumni contact information and job status are taken. CFANR also has a QR code display that is displayed at professional society meetings for forestry, agriculture, wildlife, surveying, and geospatial fields. The QR code takes participating alumni to an online survey for their contact information and job status.

Record the number of recent graduates entering jobs related or unrelated to their major or pursing further credentials related or unrelated to their major.

	Related to major	Unrelated to major	Comments
Number of recent graduates entering workforce	26	14	
Salary range	$30,000-$109,500	$20,000-$70,000	One respondent procured a job as a chemist that was related to their minor that paid $70,000.
Number of recent graduates pursing a graduate degree	10	0	

	Related to major	Unrelated to major	Comments
Number of recent graduates pursing a certificate, associate, or baccalaureate degree	0	0	

Faculty

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

				Teaching Load				
Faculty Name	**Status/ Rank**	**Highest Degree**	**Area(s) of Responsibility**	**Summer II**	**Fall**	**Spring**	**Summer I**	**Other Assignments[1]**
Askren, Ryan	Inst.	Ph.D.	Wildlife Management			6		Left UAM for Five Oaks director position in January 2023; taught spring course as adjunct
Babst, Benjamin	Assoc. Prof.	Ph.D.	Ecophysiology		6			70% AES
Bataineh, Mohammad	Assoc. Prof.	Ph.D.	Forest Health			8		70% AES
Blakeley, Robert	Inst.	B.S.	Land Surveying		5	14		
Blazier, Michael	Prof./Dean	Ph.D.	Administration/ Silviculture			4		33% AES, 33% CES
Bridges, Katy	Asst. Prof.	Ph.D.	Agronomy		7	6		25% CES
Davis, Lonni	Instr.	M.S.	Agriculture		8	10		
Deaton, Brian	Assoc. Prof.	Ph.D.	Agricultural Economics		9	9		25% CES
Ficklin, Robert	Prof.	Ph.D.	Soil Science	3	7	6		9% AES, Administration
Jones, Rusty	Rodeo Coach	M.S.	Rodeo	3		3		
Lindsey, Rocky	Asst./Assoc. Prof.	DVM	Animal Science		3	3		
Nelson, Maribel	Asst. Prof.	DVM	Animal Science		4	12		
Osborne, Douglas	Assoc. Prof.	Ph.D.	Wildlife Management			3		66% AES, Administration
Osborne, Tiffany	Inst.	M.S.	Wildlife Management		1	6		35% AES, 25% CES
Pelkki, Matthew	Prof.	Ph.D.	Forest Economics		3			47% AES , Administration

Faculty Name	Status/ Rank	Highest Degree	Area(s) of Responsibility	Summer II	Fall	Spring	Summer I	Other Assignments[1]
Rubino, Elena	Asst. Prof.	Ph.D.	Natural Resource Human Dimensions			9		
Saud, Pradip	Asst. Prof.	Ph.D.	Biometrics		5	3		70% AES
Tian, Nana	Asst. Prof.	Ph.D.	Natural Resource Policy		6			70% AES
Watt, Chris	Instr.	M.S.	Program Support/ Wildlife Management		1			91% AES
Webb, Bobby					2			15% ES
Zurqani, Hamdi	Asst. Prof.	Ph.D.	GIS		7	3		70% AES

[1]AES = Agriculture Experiment Station, University of Arkansas System Division of Agriculture; CES = Cooperative Extension Service, University of Arkansas System Division of Agriculture

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

Robert Blakeley began an appointment as instructor and taught all land surveying courses. Ryan Askren taught his courses as an adjunct after departing UAM to start an appointment as Five Oaks research director. Maribel Nelson was added as an animal science faculty member, teaching all animal science courses except pre-vet courses. Rocky Lindsey reduced his appointment as animal science faculty to part-time, solely teaching pre-vet courses. Michael Blazier taught silviculture while a search for a qualified candidate as silviculture faculty was conducted.

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

Academic Year	Total SSCH Production	Percentage Change	Comment
2013-14	2909	8.5	
2014-15	2832	-2.6	
2015-16	2798	-1.2	
2016-17	3014	7.7	
2017-18	3224	7.0	
2018-19	3122	-3.2	
2019-20	2490	-20.2	
2020-21	2,502	0.01	
2021-22	2,671	6.8	
2022-23	2,479	-7.1	

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

SSCH was consistent with that of the 2019-2020 and 2020-2021 periods but down from the prior reporting period. This trend may have been affected by student enrollment trends since faculty number and teaching loads were comparable to the prior year.

Unit Agreements, MOUs, MOAs, Partnerships

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

Unit	Partner/Type	Purpose	Date	Length of Agreement	Date Renewed
CFANR- NRM	MOU- UA Cossatot	Course Transfers	7/2016	Open	N/A
CFANR- NRM	MOU- UA Morrilton	Course Transfers	6/2017	Open	N/A
CFANR- NRM	UA System Division of Agriculture	Research and Extension	1989	Open	N/A

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

Publications

Acosta-Gamboa LM, Campbell ZC, Gao F, Babst BA, Lorence A. A novel high throughput phenotyping system for nitrogen deficiency studies in Arabidopsis thaliana. In High Throughput Plant Phenotyping: Methods and Protocols. (Lorence A, Medina-Jimenez K, eds.). Methods in Molecular Biology, Springer, New York, vol. 2539, 19 – 24 https://doi.org/10.1007/978-1-0716-2537-8_3

Askren, R. et al. 2022. Behavioral responses of Canada geese to winter harassment in the context of human-wildlife conflicts. Wildlife Society Bulletin. Doi: 10.1002/wsb.1384

Askren. R. et al. 2022. Migration chronology and multi-state habitat selection of wintering midcontinent greater white-fronted geese. Global Ecology and Conservation. Doi: 10.1016/j.gecco.2022302290

Babst BA, Braun DM, Karve AA, Baker RF, Tran TM, Kenny DJ, Rohlhill J, Knoblauch J, Knoblauch M, Lohaus G, Tappero R, Scherzer S, Hedrich R, Jensen KH. (2022) Sugar loading is not required for phloem sap flow in maize plants. Nature Plants 8:171-180.

Bataineh, M., Portner, B., Pelkki, M., and Ficklin, R. 2022. Prescribed fire first-order effects on oak and maple reproduction in frequently burned upland oak-hickory forests of the Arkansas Ozarks. Forests 13(1865) 1:16 – Special Issue: Fire Effects on Fuel and Vegetation: Linking Process to Pattern

Belbase, K., S.G. Chhetri, S. Upadhaya, & A.S. Poudel. 2022. Understanding the impacts of forest management in Sal (Shorea robusta) dominant forest stands in the western lowlands of Nepal. Small-Scale Forestry.1-13. doi.org/10.1007/s11842-022-09534-8

Bridges, K. H. Neikirk, R. Lal. "Advances in Soil Health." Soil Organic Carbon and Feeding the Future. Edited by Rattan Lal. Routledge, Taylor and Francis Grp. 2022. pp. 273-287

Chhetri, S., J. Parker, R. L. Izlar, & Y. Li. Forest Management Practices and Costs for Family Forest Landowners in Georgia, USA. Forests. 2022; 13(5):665. doi.org/10.3390/f13050665

Gan J, Tian N, Choi J, and M Pelkki. 2022. Synchronized movement between US lumber futures and southern pine sawtimber prices and COVID-19 impacts Can. J. For. Res. 52: 1–8 (2022) dx.doi.org/10.1139/cjfr-2021-0326

Khandola G, Djioleu A, Rajan K, Batta-Mpouma J, Labbé N, Sakon J, Babst BA, Ghosh A, Carrier DJ, Kim J-W. (2022) Impact of species-based wood feedstock variability on physicochemical properties of cellulose nanocrystals. Cellulose 29: 8213-8228.

Linder, T.J., K.E. Wallen, S.W. Manley, and D.C. Osborne. In Press. Rice Producer Enrollment and Retention in a Regional Conservation Partnership Program in the Southern United States. Journal of Soil and Water Conservation. Accepted 7 October 2022.

Manon Sorais, Martin Patenaude-Monette, Christopher Sharp, Ryan Askren, Armand LaRocque, Brigitte Leblon and Jean-François Giroux. 2022. Migration patterns and habitat use by molt migrant temperate breeding Canada geese in James Bay, Canada. Wildlife Biology. doi: 10.1002/wlb3.01062

Martin, B.C., H.M. Hagy, R.J. Askren, and D.C. Osborne. 2022. Large-scale assessment of rapid monitoring methods for estimating moist-soil seed production. Journal of Fish and Wildlife Management 13:144 –154; e1944-687X. https://doi.org/10.3996/JFWM-21-085

Masto, N., O. Robinson, M. Brasher, A. Blake-Bradshaw, C. Highway, A. Keever, J. Feddersen, H.M. Hagy, D.C. Osborne, D. Combs, and B. Cohen. 2022. Citizen science reveals waterfowl responses to extreme winter weather. Global Change Biology 00:1-11. DOI:10.1111/gcb.16288. https://doi.org/10.1111/gcb.16288

Rubino, E.C.; Tian, N.; Pelkki, M.H. 2022 Improving Communications to Increase Nonindustrial Private Forest Landowner (NIPF) Participation in Forest Certification Programs: A Case Study in Arkansas, USA. Forests 2022, 13, 86. https://doi.org/10.3390/f13010086

Rubino, E. C. & Serenari, C. (in press). Texas stakeholders' knowledge and perceptions of chronic wasting disease risks: Implications for wildlife agency communications. Human-Wildlife Interactions.

Rubino, E. C. & Serenari, C. (2022). Using the capabilities-opportunity-motivation-behavior (COM-B) system to conceptualize the legalization of

Sunday migratory game bird hunting in North Carolina as a recruitment, retention, and reactivation strategy. Journal of Rural Social Sciences, 37(3), 1-14.

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Rubino, E. C. & Williams, C. K. (2022). Exploring public support for large-scale commercial axis deer harvests in Maui, Hawaii. Sustainability, 14, 1837.

Spears, J.G., K.E. Wallen, and D.C. Osborne. 2022. Value similarity and trustworthiness predict support for waterfowl management. Wildlife Society Bulletin DOI: 10.1002/wsb.1375. http://doi.org/10.1002/wsb.1375

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Walters, C.M., and D.C. Osborne. 2022. Occupancy patterns of wild turkeys altered by wild pigs. Wildlife Society Bulletin: Special Issue 12th National Wild Turkey Symposium e.1266. https://doi.org/10.1002/wsb.1266

Saud, P., Lynch. T. B., Guldin, J.M., Shrestha, S. Stand-Age derived competition indices influences individual tree mortality model prediction for naturally occurring even-aged shortleaf pine stands. 2022. Forests 13(2), 314

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Stricklan, D., Cibils, A.F., Saud, P., Steiner, R.L., McIntosh, M.M., Ganguli, A.C., Cram, D.S., & Faist, A.M., 2022. Dispersal patterns of one-seed Juniper seeds contained in mammals scats and bird pellets. 2022. Forests 13 (10), 1693

Paudel, A. Bhattarai, S., Saud, P.; Pant, B.; Tian, N. 2022. Biological invasion, perceived impact, and potential mitigation of Mikania micrantha in Central Nepal. Ambio (submitted)

Saud, P., Chhetri. S.G., Pelkki. M.2023. Effects of population density in urban carbon sequestration and air pollution removal in Arkansas, USA (In prep. Urban Forestry & Urban Greening)

Dhal, S., Briana Wyatt, B., Mahanta, S., Rout, T., Sharma, S., Bhattarai, N., Saud, P., Acharya, B.S. Internet of Things (IoT) in Digital Agriculture: An Overview (In prep. Computer and Electronics in Agriculture)

Tian*, N., Gan, J., Mehmood, S., Pelkki, M. 2022. Nonindustrial Private Forest (NIPF) Landowners' Willingness to Pay for Forest Certification in Arkansas. Small-scale Forestry, Accepted. https://doi.org/10.1007/s11842-022-09507-x

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Tian, N., Pelkki, M. 2021. Arkansas Forest Sector, 2001-2021.

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White, D., Jr., G. Hilderbrand, G. Servheen, R. Newman, V. Titus, C. Decker, and J. Trudeau. 2022. A call to action on climate change. The Wildlife Professional July/August.

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Elfadli, K. I., and Zurqani, H. A. 2022. Spatiotemporal analysis of Vegetation Health Index (VHI) and drought patterns in Libya based on remote sensing time series; In: Zurqani H.A. (ed) Environmental Applications of Remote Sensing and GIS in Libya. Switzerland. Springer International Publishing AG.

Zurqani, H. A. 2022. Integration of remotely sensed data and machine learning technique for spatial prediction of selected soil properties in northwestern Libya; In: Zurqani H.A. (ed) Environmental Applications of Remote Sensing and GIS in Libya. Switzerland. Springer International Publishing AG.

Ellafi, M., H. A. Zurqani., L. K. Deeks., and Robert W. Simmons., R. W. 2022. DRAINMOD applications to design drainage systems in Libya using soil salinity data predicted by GIS, remote sensing and Artificial Neural Networks; In: Zurqani H.A. (ed) Environmental Applications of Remote Sensing and GIS in Libya. Switzerland. Springer International Publishing AG.

Zurqani, H. A., A. Al-Bukhari., A. O. Aldaikh., K. I. Elfadli., and Bataw., A. 2022. Geospatial mapping and analysis of the 2019 Flood Disaster extent and impact in the city of Ghat in southwestern Libya using Google Earth Engine and deep learning technique"; In: Zurqani H.A. (ed) Environmental Applications of Remote Sensing and GIS in Libya. Switzerland. Springer International Publishing AG.

Zurqani, H. A. 2022. Conclusions and Recommendations for Environmental Applications of Remote Sensing and GIS in Libya; In: Zurqani H.A. (ed) Environmental Applications of Remote Sensing and GIS in Libya. Switzerland. Springer International Publishing AG.

Younts, G.L., Mikhailova, E.A., Lin, L., Hao, Z., Zurqani, H.A., Post, C.J., Schlautman, M.A., Post, G.C., and G.B. Shepherd. 2022. Vermont Global Warming Solutions Act: The Costs of Inaction from Land Conversions. Laws, 11(3), 48.

Mikhailova, E.A., Lin, L., Hao, Z., Zurqani, H.A., Post, C.J., Schlautman, M.A., Post, G.C., and G.B. Shepherd. 2022. Contribution of Land Cover Conversions to Connecticut (USA) Carbon Footprint. Geographies, 2(2), 286-302.

Mikhailova, E.A., Lin, L., Hao, Z., Zurqani, H.A., Post, C.J., Schlautman, M.A., Post, G.C., and G.B. Shepherd. 2022. Delaware's Climate Action Plan: Omission of Source Attribution from Land Conversion Emissions. Laws, 11(3), 41.

Mikhailova, E.A., Lin, L., Hao, Z., Zurqani, H.A., Post, C.J., Schlautman, M.A., and G.C., Post. 2022. Massachusetts Roadmap to Net Zero: Accounting for Ownership of Soil Carbon Regulating Ecosystem Services and Land Conversions. Laws,11(2), 27

Mikhailova, E.A., Post, C.J., Zurqani, H.A., and G.L., Younts. 2022. Teaching Filled-Data Crowdsourcing using GPS-enabled Cell-Phone Application using Soil Erosion as a Case Study. Education Sciences, 12(3), 151.

Mikhailova, E.A., Lin, L., Hao, Z., Zurqani, H.A., Post, C.J., Schlautman, M.A., Post, G.C. and P.I. Mitchell. 2021. Climate Change Planning: Soil Carbon Regulating Ecosystem Services and Land Cover Change Analysis to Inform Disclosures for the State of Rhode Island, USA. Laws, 10, 92. This article was published after I submitted my 2021 annual evaluation.

Grants

Osborne, D., Zurqani, Z. , Askren, R. Mallard use of Southern Bottomland Hardwoods: using GPS accelerometers to assess fine-scale habitat selection and time budgets. Dunklin Foundation. $165,000

Askren, R., Osborne, D. Use of DNA techniques to examine forage items of mallards wintering in the Mississippi Alluvial Valley. Five Oaks. $4,000.

Babst. B. Timing and cues for tree root dormancy: Implications for Greentree Reservoir Management. AR Game and Fish Commission. $618,147

Deaton, B. Economic Analysis of Soybean Production and Marketing Practices. Soybean Promotion Board. $7,113

Deaton, B. Economic Analysis of Corn and Grain Sorghum Production and Marketing Practices. Corn and Grain Sorghum Promotion Board. $5,735.

Zurqani, H., Ficklin, R., Osborne, D. Characterization of FOAgREC Soils and Development of Fine-Scale Soil Properties Maps. Five Oaks. $114,303

Ficklin,R. Monitoring of NADP Site AR02. USGS. $48,191

Osborne, D. Initiation of hydrologic and soil moisture monitoring in greentree reservoirs in the Bayou Meto Basin. US Fish & Wildlife. $28,161

Osborne, D. Winter mallard banding program. Ducks Unlimited. $20,000

Zurqani, H., Osborne, D., Askren, R. Waterbird and vegetation response to drawdown of Big Lake NWR. USGS. $24,000

Tian, N., Taylor, E., Adams, J., English, H., Fox,, J., Akin, D., Johnson, J., Brasher, E., Pelkki, M. Building relationships with family forest landowners as a pathway to increasing forest planning and certificatio n in the Wester Upper Gulf Coastal Plain. USDA LSR. $260,836

Rubino, E. Improving private forest landowner engagement in habitat management. American Bird Conservancy. $71,785

Tian, N., Pelkki, M., Rubino, E. Building relationships with family forest landowners as a pathway to increasing forest planning and certification. USDA Forest Service. $124,700

Rubino, E., Turner, A. Examining the effects of trophy hunting messaging on public support. UAM Faculty Research Grant. $1,500

Tian, N. Installation of acorn traps. Five Oaks. $10,000

Saud, P. Tian, N. Inventory and monitoring of ecosystem based managed bottomland hardwood forests to facilitate waterfowl habitat restoration. Five Oaks. $97,995

Tian, N., Osborne, D., Pelkki, M., Gan, J., Bridges, K., Cunningham, K. Developing and harnessing climate-smart commodities from hardwood restoration for small and underserved landowners in the Southern Bottomland Region. USDA NRCS. $3,710,171

White, D. Wild pig removal and research in the South Arkansas Refuge Complex. US Fish & Wildlife. $19,229

White, D. Using camera trapping, artificial intelligence, and machine learning to estimate wild pig abundance. US Fish & Wildlife. $149,157

Zurqani, H., White, D. Drought Patterns and Trends in Arkansas, USA, from 1985 to 2021. AR Water Resources Center. $25,440

Presentations

Bataineh, M. 2022. Arkansas wildfire and prescribed burning trends: burn notification database uses and limitations, Little Rock, Arkansas, June 15-16, 2022. (Oral)

Bataineh, M. 2022. Fire behavior basics. Arkansas Annual Prescribed Fire as a Management Tool Workshop, Little Rock, Arkansas, September 26-30, 2022. (Oral)

Bataineh, M. 2022. Fire behavior modelling. Arkansas Annual Prescribed Fire as a Management Tool Workshop, Little Rock, Arkansas, September 26-30, 2022. (Oral)

S.G. Chhetri. 2022. Presented on "Understanding of Community Forestry Program" for FOR/NREM 452 April 2022 at the Department of Natural Resource Ecology and Management, Iowa State University, Ames.

Chhetri, S.G., & Pelkki, M. H. 2022: Timber Supply Availability to a Potential Forest Industry in Arkansas: A Case Study from Magnolia City, Arkansas. Society of American Foresters. Baltimore, Maryland. [ORAL]

Chhetri, S.G., & Y. Li. 2022. An analysis of factors associated with forestland enrollment in the property tax incentive programs in Georgia. International Society of Forest Resource Economics. Traverse City, Michigan. [ORAL]

Chhetri, S.G., & Pelkki, M. H. 2022. Timber supply in Arkansas: a case study from Magnolia City, Arkansas. International Society of Forest Resource Economics. Traverse City, Michigan. [POSTER]

Chhetri, S.G. & Li, Y. 2022. Forest Management Practices and Costs for Family Forest Landowners in Georgia. CFANR Brown-Bag Research Seminar Series on Feb 24, 2022, at the College of Forestry, Agriculture and Natural Resources at UAM.

Chhetri, S.G., & Pelkki, M. H. 2022. Timber supply in Arkansas: An example centered on Magnolia, Arkansas. SOAR Sustainability Conference. Southern Arkansas University, Magnolia, Arkansas [ORAL]

Deaton, B. D. (2022). Foreign Exchange Market Linkages, 2017-2019. International Journal of Accounting, Economics, and Finance Perspectives, Volume 2, Number 1, Fall 2022.

Kressuk (presenter) and Benjamin A. Babst. Science Flash Talk "Cold soil temperature reduces winter flood stress on the root system of Quercus phellos Seedlings." Society of American Foresters Annual Convention, presented virtually. November 2021

Emile Gardiner (presenter) and Benjamin A. Babst "Winter Soil Temperature and Flood Effects on Willow Oak Biomass."

Tucker Collins (presenter), Benjamin A. Babst, and Emile Gardiner. "Flood and soil temperature effects on willow oak root elongation."
Benjamin A. Babst, "15N-Nitrate uptake by willow oak seedlings during the dormant season."

Jon Kressuk (presenter), Benjamin A. Babst, and Emile Gardiner, "Changes in root respiration under controlled soil temperature"
Talk: Benjamin A. Babst and Jon Kressuk, U. Arkansas at Monticello "Influence of environmental factors on willow oak root respiration during dormancy induction in the field."

Osborne D.C. Invited Expert Panelist – 2021 Duck Season Social – December 2021 – Little Rock, AR

Hug, C., P. Saud, D.C. Osborne, and S.K. McKnight. Tree species composition varies under topographical changes within green tree reservoirs and management implications. Ouachita Society of American Foresters Annual Meeting. Poster presentation, Pocola, OK 9-10 Nov 2022.

Allen, K.D., K.N. Cody, H.M. Hagy, R.J. Askren, and D.C. Osborne. Spatial and temporal variation in body condition of late-winter female mallards in the Lower Mississippi Alluvial Valley. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Poster presentation, Memphis, TN, 4-6 Oct 2022.

Askren, R.J., and D.C. Osborne. Effects of land use and forest on fine-scale habitat selection of mallards in the Bayou Meto Basin. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Oral presentation, Memphis, TN, 4-6 Oct 2022.

Bethell, J., K.N. Cody, B.C. Martin, R.J. Askren, H.M. Hagy, and D.C. Osborne. Effects of moist-soil seed density on body condition of dabbling ducks foraging in National Wildlife Refuges. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Oral presentation, Memphis, TN, 4-6 Oct 2022.

Dittmer, E.M., D.C. Osborne, H.M. Hagy, and A.J. Hitchcock. Mallard use of Sanctuary and Non-sanctuary around White River National Wildlife Refuge. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Oral presentation, Memphis, TN, 4-6 Oct 2022.

Hagy, H.M., B.C. Martin, A.J. Hitchcock, N.L. Wirwa, D. McCarty, H. Northcutt, R.J. Askren, and D.C. Osborne. Rapid yield assessment methods for moist-soil wetlands and crops on National Wildlife Refuges in the Southeast. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Oral presentation, Memphis, TN, 4-6 Oct 2022.

Hug, C., P. Saud, D.C. Osborne, and S.K. McKnight. Overstory tree species composition of green tree reservoirs in Humphry, Arkansas. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Poster presentation, Memphis, TN, 4-6 Oct 2022.

Masto, N.M, A.C. Keever, A.G. Blake-Bradshaw, C.J. Highway, P.T. Link, J.C. Feddersen, H.M. Hagy, D.C. Osborne, D.L. Combs, and B.S. Cohen. Spring migration strategies of mallards in the Mississippi Alluvial Valley. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Oral presentation, Memphis, TN, 4-6 Oct 2022.

Masto, N.M, O.J. Robinson, M.G. Brasher, A.C. Keever, A.G. Blake-Bradshaw, C.J. Highway, J.C. Feddersen, H.M. Hagy, D.C. Osborne, D.L. Combs, and B.S. Cohen. Citizen science reveals waterfowl responses to extreme winter. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Oral presentation, Memphis, TN, 4-6 Oct 2022.

Osborne, D.C., and R.J. Askren. Five Oaks Ag Research & Education Center: A Training Program for Early-Career Waterfowl Habitat and Wetland Management Professionals. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Oral presentation, Memphis, TN, 4-6 Oct 2022.

Phelps, S.D., R.J. Askren, D.C. Osborne, and C.A. Nicolai. Effects of Weather, Moon Illumination, and Hunting Season on Fine-scale Movements of Dabbling Ducks Wintering in the Mississippi Alluvial Valley. Lower Mississippi Valley Joint Venture Waterfowl Symposium. Oral presentation, Memphis, TN, 4-6 Oct 2022.

Schroyer, K.A., H.A. Zurqani, S. Rimer, H.M. Hagy, and D.C. Osborne. Waterbird and vegetation response to drawdown of Big Lake National Wildlife Refuge. Poster presentation, Memphis, TN, 4-6 Oct 2022.

Chhetri S and M Pelkki. 2022. Arkansas Forest Industry Trends and the UAM Center for Forest Business. University of Arkansas System Division of Agriculture lead Program. Monticello, AR. December 15, 2022.

Pelkki, M. 2022. ArkPro Logger Business Courses. Arkansas Timber Producers Winter Meeting. Monticello, AR. December 14, 2022.

Pelkki, M. 2022. Current Market Conditions and Potential Utilization in the Future. Hardwood Management for Natural Resources, University of Arkansas System Division of Agriculture Arkansas Forest Resources Center. December 14, 2022.

Pelkki, M. 2022. Mathematical modeling for financially optimal timber rotations. UAM CFANR Lunch-N-Learn Seminar. Monticello, AR. 17 November 2022.

Pelkki, M. 2022. Forest Funding Opportunities Found in the Inflation Reduction Act. Ouachita Society of American Foresters 2022 Annual Meeting. Pocola, OK. 9 November 2022.

Pelkki, M. 2022. The Value of Forests and Economic Impacts: Arkansas. Ouachita Society of American Foresters 2022 Annual Meeting. Pocola, OK. 9 November 2022.

Pelkki, M. 2022. The Arkansas Center for Forest Business. Presentation of Forestry Caucus of Arkansas State Assembly. Little Rock, AR. 17 October 2022.

Tian N and M Pelkki. 2022. Timber Markets and Outlook. Arkansas Forestry Association Annual Meeting. Little Rock, AR. October 11, 2022.

Tian N and M Pelkki 2022. Economic Status of Arkansas' Forest Industry. Arkansas Farm Bureau Officer's and Leaders Conference. Rogers Convention Center, Rogers, AR. July 22, 2022.

Tian N and M Pelkki. 2022. Arkansas Forest Industry 2001 to 2021. UADA CES Foresters Training Workshop. Hope, AR. July 14, 2022.

Pelkki M. 2022. Introduction to the Arkansas Center for Forest Business. Bradley County Economic Development Corporation. Warren, AR. 27 June 2022.

Pelkki M. 2022. Utilization Standards and Timber Markets in the US South. USDA Forest Service Region 9 National Advanced Silviculture Program Training. Crossett, AR. 26 May 2022.

Tian N and M Pelkki. 2022. Arkansas Forest Industry 2001 to 2021. Arkansas Board of Registration for Foresters and Arkansas Division of Ouachita Society of American Foresters. Ferndale, AR. 3 May 2022.

Pelkki M. 2022. Arkansas Forest Business Center: More than just the timber industry. Arkansas Game and Fish Commissioners meeting. Monticello, AR. 17 March 2022.

Pelkki, M. 2022. Mathematical modeling for financially optimal timber rotations. UAM CFANR Lunch-N-Learn Seminar. Monticello, AR. 17 November 2022.

Pelkki M. 2022. Arkansas Timber Market Update. Arkansas Farm Bureau Forestry Division Meeting. Embassy Suites, Little Rock, AR. 1 March 2022.

Pelkki, M. 2022. Arkansas Forest Business Center Partnership with Collaborative Forest Landscape Restoration Program in Arkansas. USDA Forest Service Ouachita National Forest CFLRP Meeting. Zoom meeting, 18 February 2022.

Rubino, E.C. Lessons Learned from the Field: Conducting Conservation Social Science Research. Fish and Wildlife Conservation Graduate Student Association Interdisciplinary Speaker Series, Virginia Tech, Blacksburg, VA, 2022. [invited seminar speaker]

Rubino, E.C. & Serenari, C. Improving CWD Stakeholders' Perceptions and Engagement Through a Strategic Communications Plan. The Wildlife Society's Annual Conference, Spokane, WA, 2022. [part of invited panel]

Rubino, E.C., Messick, J.A., Serenari, C., Daniel, K.L., Bates, E. & Crump, P. (Scheduled for November 2022). Testing communication strategies to increase Houston toad Safe Harbor Agreement enrollment. The Wildlife Society's Annual Conference, Spokane, WA, 2022.

Messick, J.A., Serenari, C., Rubino, E.C., Daniel, K.L., Bates, E. & Crump, P. (2022). Endangered species and private landowners: Investigating landowner participation in an incentive program for the Houston toad. The Texas Wildlife Association WildLife Convention, Alpine, TX, 2022.

Rubino, E.C. & Serenari, C. (2022). Perceptions of Captive Deer and CWD in Texas. Pathways Human Dimensions of Wildlife Conference, Bremerton, Washington, 2022.

Rubino, E.C. (2022). The importance of including social science in conservation/management curricula. SOAR Sustainability Conference, Magnolia, AR, 2022.

Rubino, E.C., Tian, N., White, D. Jr., Gramza, A., Ballard, J.R., Gray, M.C., & Middaugh, C.R. (2022). Exploring hypothetical bias in self-reported predicted chronic wasting disease-related behaviors. Arkansas Chapter of The Wildlife Society, DeGray Lake, Arkansas, 2022.

Saud, P. Changes in Forest Structure in Arkansas. 2022. Sustainability Conference (SOAR) Southern Arkansas University, Magnolia, AR, Apr 20, 2022. (Oral presentation)

Hug, C., Saud, P. & Osborne D. 2022. Preliminary Assessment of Forest Composition and Tree Health within Green Tree Reservoirs in Arkansas. Annual Southern Hardwood Forest Research Group Meeting. Starkville, Mississippi. Virtual Environment and oral poster presentation, Mar 22 2022

Upadhayay. D. R., Saud, P., Bataineh, M. Lynch, T.B., & Bragg, D. Long-term effect of thinning on individual basal area growth for natural stands of shortleaf pine (Pinus echinata Mill.). SAF National Convention, September 20-23, 2022, Baltimore, MD.

Hug, C., Saud, P., Osborne, D, & McKight, S.K. 2022. Overstory tree composition of Green Tree Reservoirs in Humphrey. Lower Mississippi Valley Joint Venture (LMVJV) Waterfowl Symposium. October 4-6, 2022, Memphis, TN.

Hug, C., Saud, P., Osborne, D, & McKight, S.K. 2022. Tree species composition varies with topographical changes within green tree reservoirs and management implications. Ouachita Society of American Foresters Annual meeting, November 9th & 10th, 2022, Pocola, OK.

Upadhayay. D.R., Saud, P., Bataineh, M. Lynch, T.B., & Bragg, D. 2023. Long-term Effect of Thinning on Basal Area Growth among different diameter classes in Natural-stand of Shortleaf Pine (Pinus echinata Mill.) Biennial Southern Silvicultural Research Conference, March 21-23, 2023, Nacogdoches, TX.

Tian, N. Timber Markets and Outlook for Future. Annual Meeting of Arkansas Forestry Association, Oct. 11th, 2022. Little Rock, AR.
Arkansas Forest Industry 2001-2021. Summer Foresters Workshop, May 3rd, 2022. Ferndale, AR.

Tian, N. Arkansas Forest Industry 2001-2021. Arkansas Forester Training Workshop, July 14th, 2022. Hope, AR.

Tian, N. The Value of Our Forest and Economic Impacts: Arkansas. OSAF 2022 Annual Meeting. Nov. 9-10th, 2022. Pocola, OK.

Tian, N. Forest Certification and Sustainability: A Case Study from Arkansas, United States. April 20th, 2022. SOAR Sustainability Conference, Magnolia, AR.

Tian, N. Private Landowners Perspectives on Feral Hog and the Damage Assessments in Arkansas. Education committee report to the task force meeting, July 15th, 2022.

Tian, N. Landowners' Considerations in Forest Certification: Case Studies from China and United States. Lunch and Learn, April 7th, 2022. Monticello, AR.

Tian, N., Gan, J., Holley, G., Pelkki, M. Mineau, M. 2022. Feral Hog Damage Assessments in the Southern States of Arkansas, Louisiana, and East Texas. Annual Convention of the Society of American Foresters, September 20-24, 2022.

White, D., Jr., R. Newman, and G. Hilderbrand. October 26, 2022. Fostering collaboration among conservation organizations to deal more efficiently and effectively with the challenges of climate change. The 5th National Adaptation Forum, Baltimore, Maryland, USA.

White, D., Jr. May 12, 2022. Deer and forest management in the southeastern US: New perspectives in a CWD world. Webinar for the National Advanced Silviculture Program, USDA Forest Service.

Katherina A. Schroyer, Hamdi A. Zurqani, Steven Rimer, Heath M. Hagy, and Douglas C. Osborne. "Waterbird and Vegetation Response to the Drawdown and Chemical Treatments on Big Lake and Mathews Brake National Wildlife Refuges". Poster presentations presented at the Lower Mississippi Valley Joint Venture Symposium, Memphis, TN (October 4-6, 2022)

Hamdi A. Zurqani. “Applications of Remote Sensing and Geospatial Science in Forest Hydrology”. Oral presentations presented at the SOAR Sustainability Conference, Southern Arkansas University, Magnolia, AR, USA. (Apr 20, 2022).

Awards

Babst et al., 2022 was selected for a commissioned commentary in Nature Plants about article: Chen, LQ. (2022) Low sugar, under pressure? Nature Plants 8, 102–103. https://doi.org/10.1038/s41477-021-01034-5

Babst et al., 2022 was recommended as “very good” by an expert in the field on FacultyOpinions.com https://facultyopinions.com/prime/741753326?key=jxohBE2T5Fu1U3E Patrick J: Faculty Opinions Recommendation of [Babst BA et al., Nat Plants 2022 8(2:171-180)]. In Faculty Opinions, 22 Mar 2022

Ficklin, R. U.S. House of Representatives Congressional Record Recognition (117th Congress)- Hon. Bruce Westerman- October 27, 2022

Ficklin, R. Society of American Foresters- Elected to Fellow Status- 2022

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

With recurring funding from the Arkansas legislature, the Arkansas Center for Forest Business was created as a subunit of the College of Forestry, Agriculture, and Natural Resources. Five Oaks added more funding for scholarships for students in the Waterfowl Habitat graduate certificate. The Land Surveying courses were offered as hyflex modality to improve course accessibility and enrollment.

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

The Dean and agriculture faculty worked to revise the agriculture B.S. degree option curricula to increase the number of courses that can be taught by faculty of CFANR rather than in other units due to faculty departures. Curricula review also emphasized reduction of courses not offered for several years and removal of a degree option with low enrollment.

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

Training will be given in faculty meetings on accurate advising, and resources will continue to be committed to CFANR for extracurricular learning opportunities for its students through short courses, volunteering, and professional society service.

Other Unit Student Success Data

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

The CFANR livestock team competed at county, regional, and state fairs, culminating in divisional award at the state fair for Beefmaster bull. The forestry club competed in timbersports competitions in Arkansas and Louisiana against forestry schools at peer universities. The forestry club also competed in Quiz Bowl at the Society of American Foresters annual conference in Baltimore, finishing in the top 10 among all forestry programs in the country in the competition. Accreditation for the forestry option of the Natural Resources Management B.S. degree was renewed for a 10-year period.

Revised 02/09/2022

Revised February 8, 2018

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.

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

Addendum 2: Higher Learning Commission Sample Assessment Questions

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

- How well do the student learning outcomes of programs and majors align with the institutional mission?

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

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

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

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

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

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

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

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

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

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

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

Addendum 3: Arkansas Productivity Funding Metrics

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

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