

University of Arkansas at Monticello

Academic Unit Annual Report

Unit: College of Forestry, Agriculture and Natural Resources

Academic Year: 2017-2018

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

Note: The formation of the College was finalized July 1. The vision and mission statements for the unit are being discussed among the faculty, and the final form of these statements will be set following the discussion period.

Vision

The College of Forestry, Agriculture and Natural Resources will develop future leaders and deliver science-based solutions through a process of discovery, learning and engagement that support healthy, productive forest, agricultural and natural resources and ensure social and economic prosperity for the state, nation and world.

Mission Statement

Our mission is to foster 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 aim is to produce skilled graduates that are life-long learners who succeed within their chosen discipline, to generate information and knowledge that promotes science-based management and conservation, and to enhance the economic vitality and quality of life of the people and stakeholders 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 solve management problems.
- 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.

Strategic Plan

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

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

Goal: Successful transition of the School of Agriculture (AGRI) and the School of Forestry and Natural Resources (SFNR) into the College of Forestry, Agriculture, and Natural Resources (CFANR)

Action: The merging of AGRI and SFNR into CFANR provides opportunities to improve administrative efficiencies and explore options for enhancing the delivery of academic programs. Reallocation of office and classroom spaces is planned to facilitated student advising and enrich classroom learning

experiences. Synergies between AGRI and SFNR academic programs will be examined for efficient and effective delivery of current degree offerings.

KPI-1: All CFANR faculty and staff will have office space in the same building to facilitate student advising and support, and will also have CFANR network accounts for utilizing specialty software, storing data, and sharing data on collaborative projects.

KPI-2: All CFANR students will have CFANR network accounts for supporting in classroom and out-of-classroom academic work and for facilitating collaborative projects.

KPI-3: Assignment of classrooms and laboratories for courses will be adjusted and adapted to provide the best possible teaching and learning environment for CFANR students.

KPI-4: CFANR degree programs will be examined to identify synergies among current programs by the end of the 2019 academic year.

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

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

e. *Identify and enhance pipeline for recruiting.*

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

Action: With the creation of the College of Forestry, Agriculture and Natural resources, all recruitment materials will be revised and rebranded. Additionally, key alumni with an interest in helping grow our student body will be identified and organized to aid in student recruitment efforts.

KPI-1: A College logo will be developed for use on promotional materials.

KPI-2: College recruitment materials (brochures, t-shirts, etc.) will be developed, printed and distributed.

KPI-3: New social media accounts will be created and activated to promote College activities and aid in recruitment efforts.

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
KPI 1-1: All CFANR faculty and staff will have office space in the same building to facilitate student advising and support, and will also have CFANR network accounts for utilizing specialty software,	Reallocation of office space in the Forest Resources Building is initiated. Network accounts for Agriculture faculty have been created.	Specific space and network/software needs will continue to be evaluated to best utilize CFANR resources.

KPI	Assessment of Progress	Implications for Future Planning/Change
storing data, and sharing data on collaborative projects.		
KPI 1-2: All CFANR students will have CFANR network accounts for supporting in classroom and out-of-classroom academic work and for facilitating collaborative projects.	At the outset of the fall 2018 semester, students will be setup with network accounts.	Once completed, specific drive/directory permissions to provide network security while improving student productivity will be assessed.
KPI 1-3: Assignment of classrooms and laboratories for courses will be adjusted and adapted to provide the best possible teaching and learning environment for CFANR students.	Initial assignments for the fall 2018 term have been made, and spring 2019 assignments are being evaluated.	Suitability of the new classroom assignments will be made following each future fall and spring term.
KPI 1-4: CFANR degree programs will be examined to identify synergies among current programs by the end of the 2019 academic year.	Cross-discipline course content commonalities and an evaluation of teaching assignments are underway.	All CFANR degrees and options will regularly be evaluated for content.
KPI 2-1: A College logo will be developed for use on promotional materials.	This work is underway in coordination with campus officials.	This logo will be prominently displayed on all CFANR materials.
KPI 2-2: College recruitment materials (brochures, t-shirts, etc.) will be developed, printed and distributed.	Not yet initiated.	Materials will be developed as UAM promotional materials are available.
KPI 2-3: New social media accounts will be created and activated to promote College activities and aid in recruitment efforts.	Not yet initiated.	Accounts will be created/modified as materials are available.

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 (See Addendum 2)

Unit Student Learning Outcome	Alignment with UAM Vision, Mission, and Strategic Plan	Alignment with Unit Vision, Mission, and Strategic Plan
Students will understand basic theory and practice, and be skilled in applying appropriate tools and technology, for their chosen field of study.	Understanding theory and practice is critical for achieving the UAM mission of educating diverse learners to succeed in a global environment.	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.
Students will recognize how land management relates to the larger environment, economy, and society.	Land management decisions are foundational to resource utilization for economic	Beyond the grounding principles of theory and practice, successful

Unit Student Learning Outcome	Alignment with UAM Vision, Mission, and Strategic Plan	Alignment with Unit Vision, Mission, and Strategic Plan
	growth, which is integral to the UAM mission of improving quality of life through sustainable economic development.	students must appreciate how their management efforts influence the global resource base.
Students will apply science-based knowledge and information to analyze and solve management problems.	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 CFANR allocates significant resources to provide students with the tools and technology necessary for them to develop and effectively address management problems.
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.

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 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

A variety of tools are used for program-level assessment. These are:

Capstone Course and Senior Seminars

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 that is 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 team work. 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 field work 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.

Alumni Survey/Employer Surveys

The CFANR conducts periodic surveys to guide the evaluation of degree programs. In response to a recent SFNR survey and to informal feedback from employers, the SFNR developed a new Associate of Applied Science degree in Forest Technology. The School of Agriculture also recently received approval for a new Associate of Science in Agriculture degree, and this degree will be available through the CFANR beginning in fall of 2018.

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. During the 2017-2018 academic year, changes were made to the natural resources management curriculum to improve the effectiveness of course content delivery. Examples of these changes include the addition of a laboratory component to the NRM 2093 Fire Management course, and the changing of a credit hour of laboratory for an hour of additional lecture time in NRM 3063 Natural Resource Biometrics. Changes in the agriculture curriculum also have been implemented to support the new site-specific management degree option. Changes to the new courses in this option will be made in response to feedback that is received during the initial offerings of the courses.

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 are being developed and will 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

UNDERGRADUATE PROGRAM MAJOR: BS - Natural Resources Management

Classification	Fall 2015	Fall 2016	Fall 2017	3-Year Total & Average	10-Year Total & Average
Freshman	28	44	42	114/38	468/47
Sophomore	18	15	11	44/15	132/13
Junior	10	12	15	37/12	116/12
Senior	12	8	15	35/12	154/15
Post Bach	0	0	0	0/0	9/1
Total	68	79	83	230/77	879/88

UNDERGRADUATE PROGRAM MAJOR: BS – Land Surveying

Classification	Fall 2015	Fall 2016	Fall 2017	3-Year Total & Average	10-Year Total & Average
Freshman	5	11	11	27/9	41/4
Sophomore	3	2	4	9/3	19/2
Junior	4	3	2	9/3	23/2
Senior	1	2	4	7/2	29/3
Post Bach	0	0	0	0/0	2/0.2
Total	13	18	21	52/17	114/11

UNDERGRADUATE PROGRAM MAJOR: AS – Land Surveying Technology

Classification	Fall 2015	Fall 2016	Fall 2017	3-Year Total & Average	7-Year Total & Average
Freshman	0	1	0	1/0.3	9/1
Sophomore	1	0	0	1/0.3	3/0.4
Junior	1	0	0	1/0.3	5/1
Senior	0	1	0	1/0.3	2/0.3
Post Bach	0	0	0	0/0	0
Total	2	2	0	4/1	19/3

UNDERGRADUATE PROGRAM MAJOR: AAS – Forest Technology

Classification	Fall 2015	Fall 2016	Fall 2017	3-Year Total & Average	10-Year Total & Average
Freshman	NA	NA	1	NA	NA
Sophomore	NA	NA	0	NA	NA
Junior	NA	NA	0	NA	NA
Senior	NA	NA	0	NA	NA
Post Bach	NA	NA	0	NA	NA
Total	NA	NA	1	NA	NA

UNDERGRADUATE PROGRAM MAJOR: Agriculture

Classification	Fall 2015	Fall 2016	Fall 2017	3-Year Total & Average	10-Year Total & Average
Freshman	56	56	66	178/59	430/43
Sophomore	27	29	20	76/25	214/21
Junior	21	21	29	71/24	210/21
Senior	26	28	22	76/25	235/24
Post Bach	2	0	0	2/0.67	3/0.33
Total	132	134	137	403/134	1092/109

UNDERGRADUATE PROGRAM MAJOR: Pre Vet

Classification	Fall 2015	Fall 2016	Fall 2017	3-Year Total & Average	10-Year Total & Average
Freshman	7	5	2	14/5	70/7
Sophomore	0	3	2	5/2	23/2
Junior	2	1	2	5/2	10/1
Senior	1	1	2	4/1	5/1
Post Bach	0	0	0	0	0
Total	10	10	8	28/9	108/11

GRADUATE PROGRAM MAJOR:

ENROLLMENT	Fall 2015	Fall 2016	Fall 2017	3-Year Total & Average
ENROLLMENT	11	14	9	34/11

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, Land Surveying, and Site-Specific Agriculture Management. Across all of these degrees, enrollment has consistently increased during the past three years.

Weaknesses

- There is a lack of awareness among potential students regarding the degrees and degree options offered in the CFANR.

Opportunities for Growth

- Through marketing and recruiting efforts to raise awareness of CFANR offerings, enrollment of both first time freshmen and transfer students may increase.

Threats to Effectiveness

- The resources necessary to market the CFANR and recruit students are limited.

Gateway Course Success (Applies only to units teaching Gateway Courses)-

Table 5: Gateway Course Success*

Not Applicable to CFANR

Completion (Graduation/Program Viability)

Table 6: Number of Degrees/Credentials Awarded by Program/Major

Number of Degrees Awarded

Undergraduate Program/Major	2015-2016	2016-2017	2017-2018	Three Year Total	Three Year Average
FOR- B.S. Natural Resources Mgmt. ¹	7	8	9	24	8
FOR- A.S. Land Surveying Technology	0	1	4	5	1.7
FOR-B.S. Land Surveying ²	1	2	0	3	1
GFOR- M.S. Forest Resources	3	7	2	12	4
AGRI- B.S. Agriculture	18	27	19	64	21

¹Includes Forest Resources degrees, when applicable

²Includes Spatial Information Systems degrees, when applicable

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

The Natural Resources Management degree was implemented in the fall of 2016, and since that time FTFT freshman enrollments have increased and the number of degrees awarded also has increased. The expectation is that these trends will continue, and a new Associate of Science degree in Natural Resources Management is being developed as a credential for students to earn on the path to their 4-year degree.

The graduation rate for the Agriculture baccalaureate degree is healthy, and a new Site-Specific option within the degree now is offered. This is a unique degree offering within the state, and it provides a distinguishing characteristic for the UAM agriculture program. In addition to the baccalaureate modifications, a new Associate of Science degree in Agriculture has been approved to provide students a credential as they work toward their baccalaureate degree. The agriculture curriculum will be assessed further in the near future for other opportunities to improve both content and delivery.

The recruitment of students and completion of degrees in the Forest Resources M.S. program is dependent upon both grant funding and available faculty. Funding to support graduate research assistantships is cyclical, and student numbers vary with these cycles. Degree completion rates are strong, and enrollment numbers are increasing in the fall of 2018.

The Land Surveying and Land Surveying Technology programs historically have had a low number of degrees awarded. The low graduation numbers are a reflection of the low enrollment numbers in the programs; however, there has been a 62% increase in the number of students in the Land Surveying program since 2015. Modifications to the Land Surveying Technology program to better match the sequencing of the Land Surveying program are being made. These changes will allow students in either the B.S. or the A.S. program to earn a credential after two years of coursework.

Enrollment in all programs will benefit greatly from increased marketing and targeted recruitment efforts. The CFANR faculty invest significant time, effort, and resources to the retention of students, so with an increase in recruitment/enrollment, subsequent increases in degrees awarded are expected.

Faculty

Table 7: Faculty Profile, Teaching Load, and Other Assignments

Teaching Load

Faculty Name	Status/Rank	Highest Degree	Area(s) of Responsibility	Summer	Fall	Spring	Summer	Other Assignments
Babst, Benjamin A.	Asst. Prof.	Ph.D.	Ecophysiology		3			70% AAES ¹

Faculty Name	Status/Rank	Highest Degree	Area(s) of Responsibility	Summer	Fall	Spring	Summer	Other Assignments
Bataineh, Mohammad M.	Asst. Prof.	Ph.D.	Forest Health		3	6		70% AAES
Bryant, Kelly	Prof./ Dean	Ph.D.	Teaching/ Administration		5	1		33% AAES 33% CES ²
Dennis, John C.	Assoc. Prof.	Ph.D.	Land Surveying		8	3		10% AAES
Ficklin, Robert L.	Prof.	Ph.D.	Soil Science	3	11	5	5	9% AAES, Administration
Francis, Paul	Prof.	Ph.D.	Plant & Soil Science		13	9		
Headlee, William L.	Asst. Prof.	Ph.D.	Natural Resource Ecology		5	3		70% AAES
Jacobs, Thomas D.	Instr.	B.S.	Land Surveying		7	7		
Jones, Rusty	Rodeo Coach	M.S.	Rodeo					
Liang, Lu	Asst. Prof.	Ph.D.	Geospatial Information Systems		12	3		70% AAES
Liechty, Hal O.	Prof.	Ph.D.	Hydrology/ Ecology		3	6		69% AAES
Lindsey, Rocky	Asst. Prof.	DVM	Animal Science		10	12		
Montgomery, Thomas G.	Adjunct Instructor	M.S.	Animal Science/ Farm Manager			3		
Olson, Matthew	Asst. Prof.	Ph.D.	Silviculture		2	5		70% AAES
Osborne, Douglas C.	Assoc. Prof.	Ph.D.	Wildlife Management		5	3		66% AAES

Faculty Name	Status/Rank	Highest Degree	Area(s) of Responsibility	Summer	Fall	Spring	Summer	Other Assignments
Pelkki, Matthew H.	Prof.	Ph.D.	Forest Economics		6	5		47% AAES , Administration
Spurlock, Terry	Adjunct Asst. Prof.	Ph.D.	Plant Pathology		3			90% CES
Stark, Robert C. Jr.	Prof.	Ph.D.	Agricultural Economics		12	12		
Tappe, Philip A.	Prof./Dean	Ph.D.	Administration					31% AAES, 31% CES
Wallen, Kenneth E.	Asst. Prof.	Ph.D.	Natural Resource Communications			4	2	40% AAES
Watt, Chris	Instr.	M.S.	Program Support/ Wildlife Management		1			91% AAES
White Jr., Donnell D.	Prof.	Ph.D.	Wildlife Management		3			69% AAES

¹Arkansas Agricultural Experiment Station

²Cooperative Extension Service

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

While there have been no significant changes in faculty composition, the merger of the School of Forestry and Natural Resources with the School of Agriculture into the College of Forestry, Agriculture and Natural Resources is significant and noteworthy.

Table 8: Total Unit SSCH Production by Academic Year (ten year)

Academic Year	Total SSCH Production	Percentage Change	Comment
2007-08	2301	-9.9	
2008-09	2567	11.6	
2009-10	2639	2.8	
2010-11	2552	-3.3	
2011-12	2518	-1.3	
2012-13	2680	6.4	
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	Although there have been annual fluctuations in SSCH productivity, there has been a 40% increase in SSCH output during the 2007/2008 to 2017/2018 academic period.

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

During the past academic year, there was a 7% increase in SSCH productivity, in addition to the 7.7% increase that occurred during the 2016-2017 academic year. Freshmen enrollment across all degrees increased by 4% during the 2017-2018 academic year, so the increase in SSCH reflects a retention of students through the higher ranks- not simply an increase in new students.

Unit Agreements, MOUs, MOAs, Partnerships

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

Unit	Partner/Type	Purpose	Date	Length of Agreement	Date Renewed
SFNR	MOU- UA Cossatot	Course Transfers	7/2016	Open	N/A
SFNR	MOU- UA Morrilton	Course Transfers	6/2017	Open	N/A
SFNR	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.

Faculty Scholarly Activity

- **CY17 Faculty Publications in Refereed Journals (23)**
- Dipesh, K.C., Blazier, M.A., Pelkki, M.H., and Liechty, H.O. 2017. Genotype influences survival and growth of eastern cottonwood (*Populus deltoides* L.) managed as a bioenergy feedstock on retired agricultural sites of the Lower Mississippi. *New Forests* 48:95–114.
- Chen, C., Weiskittel, A., Bataineh, M., and MacLean, D. 2017. Even low levels of spruce budworm defoliation affect mortality and ingrowth but net growth is more driven by competition. *Canadian Journal of Forest Research* 47: 1546-1556.
- Chen, C., Weiskittel, A., Bataineh, M., and MacLean, D. 2017. Evaluating the influence of varying levels of spruce budworm defoliation on annualized individual tree growth and mortality in Maine, USA and New Brunswick, Canada. *Forest Ecology and Management* 396: 184-194.
- Gharis, L.W., S.G. Laird, and D.C. Osborne. 2017. How do university students perceive forestry and wildlife management degrees? *Journal of Forestry* 115: 540-547.
- Henderson, J., T. Adams, T., O. Joshi, S. Tanger, L. Boby, W. Hubbard, C. Becker, R. Cantrell, J. Daystar, D. Hughes, B. Jackson, E. McConnell, S. Mehmood, W. Miller, J. Nowak, P. Tappe, and M.

Pelkki. 2017. Standard Procedures and Methods for Economic Impact and Contribution Analysis in the Forest Products Sector. *Journal of Forestry* 155(2):112-116.

- Hoffman A, Adams J, Bataineh MM, Babst BA, Nelson A (2017) Response of standard eastern cottonwood and novel black willow clones to artificial lighting. *Tree Planters' Notes* 60: 28-36.
- Hoffman, A., Adams, J., Bataineh, M., Babst, B., and Nelson, A. 2017. Response of standard eastern cottonwood and novel black willow clones to artificial lighting. *Tree Planters Notes*. 60(1): 28-36.
- Joshi, O., and L. Bobby, J. Henderson, S. Tanger, S. Mehmood, M. Pelkki, E. Taylor. 2017. A synopsis of methodological variations in economic contribution analysis for forestry and forest-related industries in the US South. *Journal of Forestry* 155(2):80-85.
- Knapp, B.O., M.G. Olson, and D.C. Dey. 2017. Early stump sprout development following two levels of harvest in a Midwestern bottomland hardwood forest. *Forest Science*. 63: 377-387.
- Li XC, Lu H, Zhou YY, Hu TY, Liang L. Liu XP, Hu GH, Yu L. (2017) Exploring the performance of spatio-temporal assimilation in an urban cellular automata model. *International Journal of Geographical Information Science*. Doi:10.1080/13658816.2017.1357821
- Liang L, Li XC, Huang YB, Qin YC, Huang HB. (2017) Integrating remote sensing, GIS and dynamic models for landscape-level simulation of forest insect disturbance. *Ecological Modeling*. 354:1-10.
- Liang L, Gong P. (2017) Climate change and human infectious diseases: a synthesis of research findings from global and spatio-temporal perspective. *Environment International*. 103: 99-108.
- Olson, M.G. and B.O. Knapp. 2017. Early stump sprouting after clearcutting in a northern Missouri bottomland hardwood forest. Gen. Tech. Rep. NRS-P-167, Newtown Square, PA: USDA Forest Service, Northern Research Station. P. 99-109.
- Olson, M.G., B.O. Knapp, and J.M. Kabrick. 2017. Dynamics of a temperate deciduous forest under landscape-scale management: Implications for adaptability to climate change. *Forest Ecology and Management*. 387: 73-85.
- Olson, M.G. and M.R. Saunders. 2017. Long-term research on managed hardwood forests in eastern North America. *Forest Ecology and Management*. 387: 1-2.
- Oswald, B.P., Lanham, J.R., Bataineh, M.M., Kroll, J.C., and Zhang, Y. 2017. Reconstruction of pinon-juniper forest structure to examine historic wildlife habitat characteristics in the Davis Mountains, USA. *Forest Research* 6(2): 1-18.

- Morris, E., van Riper, C. J., Kyle, G. T., Wallen, K. E., & Absher, J. D. (2017). Accounting for gender in a study of the motivation-involvement relationship. *Leisure Sciences*. doi:10.1080/01490400.2016.1256799.
- Reynolds R, Liang L, Li XC, Dennis J. (2017) Monitoring annual urban changes in a rapidly growing portion of Northwest Arkansas with a 20-year Landsat record. *Remote Sensing*. 9(1):71.
- Rota, C.T., A.J. Wolf, R.B. Renken, R.A. Gitzen, D.K. Fantz, R.A. Montgomery, M.G. Olson, L.D. Vangilder, and J.J. Millspaugh. 2017. Long-term impacts of three forest management strategies on herpetofauna abundance in the Missouri Ozarks. *Forest Ecology and Management*. 387: 37-51.
- Runkle BR, Rigby JR, Reba ML, Anapalli SS, Bhattacharjee J, Krauss KW, Liang L, Locke MA, Novick KA, Sui R, Suvočarev K. (2017) Delta-Flux: An eddy covariance network for a climate-smart lower Mississippi basin. *Agricultural & Environmental Letters*. 2(1).
- Wallen, K. E., & Daut, E. F. (2017). Exploring social influence and social marketing to reduce consumer demand for illegal wildlife. *Asian Journal of Conservation Biology*, 6(1), 3–15.
- Wallen, K. E., & Romulo, C. L. (2017). Social norms: more details, please. *Proceedings of the National Academy of Sciences USA*, 117(27), E5283–E5284. doi:10.1073/pnas.1704451114
- Wallen, K. E. (2017). Focusing on structure and process to integrate and mainstream the social sciences in conservation. *Conservation Biology*, 31(3), 724–726. doi: 10.1111/cobi.12871

CY17 Faculty Publications in Other Scholarly Publications (16)

- Babst B, Lam J, Djiroleu A, Foust A, Headlee W, Crooks P, Hestekin J. Feedstock evaluation and potential new uses of wood for cellulose nanocrystals. Society of American Foresters National Conference in Albuquerque, NM, 11/15-19, 2017.
- Bataineh, M. 2017. Emerald ash borer. Arkansas Urban Forestry Council Newsletter. Issue 2 pages 5 and 7.
- Bataineh, M.M. 2017. Development of overwintering Emerald Ash Borer larvae in response to seasonality reduction. Final Project Report, Faculty Research Committee, UAM Internal Report.
- Bataineh, M.M. 2017. Pine Commodity Progress Report. Semiannual Project Report, USDA APHIS Report.
- Bataineh, M.M. 2017. Pine Commodity Final Project Report. USDA APHIS Report.
- Bataineh, M.M. 2017. Evaluating extent and severity of emerald ash borer infestation. USDA, Forest Service, Forest Health Protection, Evaluation Monitoring Report.

- Bataineh, M.M. and Pelkki, M. 2017. Rehabilitation of cutover oak-hickory stands using prescribed burning and herbicide application: decadal responses of vegetation. The 19th biennial southern silvicultural research conference, Blacksburg, Virginia, March 13-16, 2017.
- Ficklin, R.L. 2017. Newsletter- The Society of Xi Sigma Pi. Volume 42. 32 pp.
- Liechty HO, Blazier MA, Headlee WL. 2017. Impacts of competition control on hardwood moisture availability and stress two years following afforestation of a retired sod farm. In: Proceedings of the 19th Biennial Southern Silviculture Research Conference, Blacksburg, VA, 3/14-16 2017.
- Massey, E.R., and D.C. Osborne. Diet and body condition of Arctic nesting geese wintering in Arkansas. The Wildlife Society, Albuquerque, NM, 24-27 September 2017.
- Olson MG, Headlee WL, Stuhlinger HC 2017. Comparison of 49-year-old plantation-grown loblolly and shortleaf pine in the Arkansas Ozarks. In: Proceedings of 19th Biennial Southern Silviculture Research Conference, Blacksburg, VA, 3/14-16 2017.
- Osborne, D.C., and R.J. Askren. Migration chronology and distribution of midcontinent greater white-fronted geese. The Wildlife Society, Albuquerque, NM, 24-27 September 2017.
- Portner, B., Bataineh, M., Pelkki, M., and Ficklin, R. 2017. Comparing the use of pyrometers and thermocouples for estimating prescribed burning flame temperature. The Association for Fire Ecology 7th International Fire Congress, Orlando, Florida, November 28-December 2, 2017.
- Stuhlinger HC, Headlee WL, Foust AM. 2017. Enhancing black walnut seedling establishment in a northwest Arkansas creek bottom. In: Proceedings of the 19th Biennial Southern Silviculture Research Conference, Blacksburg, VA, 3/14-16 2017.
- Stuhlinger HC, Headlee W, Foust A, Trauger J. Using tree shelters and fertilizer tablets to improve black walnut seedling establishment in NW Arkansas. Society of American Foresters National Conference in Albuquerque, NM, 11/15-19, 2017.
- Weatherly, D., Bataineh, M., and Thompson, L. 2017. Arkansas prescribed burning trends in relation to air quality standards. The Association for Fire Ecology 7th International Fire Congress, Orlando, Florida, November 28-December 2, 2017.

CY17 Faculty Presentations at Conferences, Symposia, and Workshops (49)

- Babst, B. Tree Responses to Stress: A Basis for Better Forestry. Southeast Arkansas Chapter SAF Meeting, Monticello, Arkansas. September 2017.
- Babst, B. A Role for Transport in Nitrogen Stress Tolerance. Plant Imaging Consortium (PIC) Annual Meeting, St. Louis, Missouri. June 2017.

- Babst, B. Regulation of resource allocation in plant stress responses. Bottomland Hardwood Research Center, U.S. Forest Service, Stoneville, MS. April 12, 2017.
- Babst B., Lam J, Djioleu A, Foust A, Headlee W, Crooks P, Hestekin J. Feedstock evaluation and potential new uses of wood for cellulose nanocrystals. Society of American Foresters National Conference in Albuquerque, NM, 11/15-19, 2017.
- Babst, B., Jason Lam, Angele Djioleu, Amanda M. Foust, William L. Headlee, Peter Crooks, Jamie Hestekin. Feedstock Evaluation and Potential New Uses of Wood for Cellulose Nanocrystals. Society of American Foresters National Convention, Albuquerque, NM. November 2017.
- Babst, B. and Fei Gao. Identification of nitrogen cycling mutants in Arabidopsis using combined bioinformatics and nitrogen-13 radiotracer assays. Arkansas Bioinformatics Consortium (AR-BIC) annual meeting, Little Rock, AR. April 2017.
- Bataineh, M.M. and Clarke, Stephen, C. Invasion range expansion: phenology and larval development effects. North Central Forest Pest Workshop, Rolla, Missouri, September 18-21, 2017.
- Bataineh, M.M. and Pelkki, M. Rehabilitation of cutover oak-hickory stands using prescribed burning and herbicide application: decadal responses of vegetation. The 19th biennial southern silvicultural research conference, Blacksburg, Virginia, March 13-16, 2017.
- Bataineh, M.M. Fire behavior predictions: BehavePlus Modeling. Arkansas Annual Prescribed Fire as a Management Tool Workshop, Little Rock, Arkansas, September 25-29, 2017.
- Blazier, M.A., Liechty, H.O. Moore, L. Vegetation control options for improving afforestation of a retired sod farm in Central Arkansas. 19th biennial southern silvicultural research conference. Blacksburg, VA, March 13-16, 2017.
- Ficklin, R.L. Forestry and Forestry Education in Arkansas- a Brief Historical Overview. Presentation to the Daughters of the American Revolution John McAlmont Chapter. January 17, 2017. Pine Bluff Country Club, Pine Bluff, AR.
- Gray, M.C., and D. White, Jr. Chronic wasting disease in Arkansas. 40th Annual Meeting of the Southeastern Deer Study Group: The Science, Politics, and Management of Disease, C.A. Vines Arkansas 4-H Center, Little Rock, Arkansas. March 2, 2017.
- Gray, M.C., and D. White, Jr. Chronic wasting disease in Arkansas. 40th Annual Meeting of the Southeastern Deer Study Group: The Science, Politics, and Management of Disease, St. Louis, Missouri. February 28, 2017.
- Headlee WL, Foust AM. Benefits of shade trees for beef cattle. University of Arkansas Southeast Research and Extension Center Beef and Forage Field Day in Monticello, AR, October 24, 2017.
- Headlee WL. Story of my life: a journey to doing research in the great outdoors. American Indian Science and Engineering Society Region 4 Conference 2017 in Fayetteville, AR, March 24-25, 2017.

- Huang YB, Liang L. Evaluation of high-resolution satellite imagery for monitoring agricultural and forest systems. *Agro-Geoinformatics* 2017. Washington DC.
- Lam, Jason and Babst, Benjamin. Medium throughput extraction of nanocellulose from cellulose. Arkansas IDeA Network of Biomedical Research Excellence (INBRE) research conference, Fayetteville, AR. October 2017.
- Lam, Jason. and Babst, B. Medium Throughput Extraction of Nanocellulose from Cellulose. UAM Research & Scholarship Forum, UAM. March 30, 2017.
- Liang L, Huang YB. A Cost-Effective Way to Map Rice Fields in the Mississippi Alluvial Valley Using Google Earth Engine. *Agro-Geoinformatics* 2017. Washington DC.
- Liechty HO, Blazier MA, Headlee WL. 2017. Impacts of competition control on hardwood moisture availability and stress two years following afforestation of a retired sod farm. In: Proceedings of the 19th Biennial Southern Silviculture Research Conference, Blacksburg, VA, 3/14-16 2017.
- Massey, E.R., and D.C. Osborne. Body condition of Arctic nesting geese wintering in Arkansas. Arkansas State Chapter of the Wildlife Society, Little Rock, AR, 2-3 March 2017.
- Massey, E.R., and D.C. Osborne. Diet and body condition of Arctic nesting geese wintering in Arkansas. The Wildlife Society, Albuquerque, NM, 24-27 September 2017.
- Moore, C.B., and D.C. Osborne. Spatiotemporal changes in winter harvest distribution of midcontinent white-fronted geese. Arkansas Chapter of the Wildlife Society, Little Rock, AR, 2-3 March 2017.
- Olson M.G., Headlee WL, Stuhlinger HC. 2017. Comparison of 49-year-old plantation-grown loblolly and shortleaf pine in the Arkansas Ozarks. In: Proceedings of 19th Biennial Southern Silviculture Research Conference, Blacksburg, VA, 3/14-16 2017.
- Olson M.G., S.Y. Hossain, K.K. Cunningham, M.H. Pelkki, and H.C. Stuhlinger. Rehabilitating degraded bottomland hardwood stands using overstory removal and oak enrichment planting: 14-year results. Upcoming oral presentation at the 2017 SAF National Convention.
- Osborne, D. C. Status of Arctic Geese: Impacts of increasing abundance and shifting distribution. Association of Natural Resources Scientists, Department of Natural Resources Management at Texas Tech University, Lubbock, TX, 27 April 2017.
- Osborne, D.C., P. Ardapple, and J. Nix. Spatial variation in survival of male wild turkeys on public lands in the mountains of Arkansas. Arkansas Game and Fish Commission and US Forest Service Annual Collaboration Meeting. Hot Springs, Arkansas, 24-25 May 2017.
- Osborne, D.C., and R.J. Askren. Migration chronology and distribution of midcontinent greater white-fronted geese. The Wildlife Society, Albuquerque, NM, 24-27 September

2017.

- Pelkki, M. Five things to know about the economics of forest management. Forest Management Outreach Meeting for Underserved Landowners. 10 October 2017, Monticello, AR.
- Pelkki, M. Forestry for Mid-South Farm Managers. Mid-south chapter of ASFMRA Annual Meeting, 29 June 2017, McGehee, AR.
- Pelkki, M. Arkansas Timber Markets. Forester Training Day, University of Arkansas Cooperative Extension Service. 1 June 2017, Arkadelphia, AR.
- Pelkki, M. Forest Industry Outlook. Arkansas Forestry Association 2017 Spring Board Meeting, 5 May 2017, Heber Springs, AR.
- Pelkki, M. A look back at Arkansas' timber markets of the 21st Century: The first 15 years. Arkansas Board of Registration for Foresters and Ouachita Society of American Foresters' Conference, 2 May 2017, Ferndale, AR.
- Pelkki, M. Economic impact of collaborative forest restoration projects on the Ouachita National Forest. CFLR Partners Meeting, 25 April 2017, Waldron, AR.
- Pelkki, M. Economic impact of Ozark Highland Project on the Ozark National Forest. CFLR Partners Meeting, 25 April 2017, Waldron, AR.
- Portner, B., Bataineh, M., Pelkki, M., and Ficklin, R. Comparing the use of pyrometers and thermocouples for estimating prescribed burning flame temperature. The Association for Fire Ecology 7th International Fire Congress, Orlando, Florida, November 28-December 2, 2017.
- Richard Sample and Benjamin A. Babst. Nitrogen resorption timeline in relation to protein and chlorophyll degradation in southern oaks. Society of American Foresters National Convention, Albuquerque, NM. November 2017.
- Richard Sample and Benjamin A. Babst. The Relationship of Nitrogen Resorption with Leaf Chlorophyll Content during Senescence in Three Bottomland Hardwood Species. Biennial Southern Silviculture Research Conference, Blacksburg, VA. March 2017.
- Sapkota B, Liang L. Automatic crown delineation of bottomland hardwood species with high resolution satellite imagery. *Arkansas GIS Symposium*. Eureka Springs. Oct 5, 2017.
- Sapkota B, Liang L. Classification of leaf-off and leaf-on trees using very high resolution WorldView-2 fall imagery with high spectral confusion. *Annual meeting of American Association of Geographers*. Boston, MA. Apr 8, 2017
- Sherman, G. and Pelkki, M. Analysis of Wood Residual Availability in Northwest Arkansas. Poster presentation at Soc. of Amer. Foresters 2017 National Convention, Albuquerque, NM, November 15-18, 2017.

- Stark, C. Robert Jr., Chad Norton, Jeremy Ross, Paul B. Francis, and Chris Elkins. 2017. Revenue Impacts of Marketing Price Decision Timing Within a State Soybean Research Verification Program. Poster presentation at the 2017 SAEA Meeting, Feb. 4-7, 2017, Mobile, AL.
- Stark, C. R. Jr., P. B. Francis. 2017. Examining Possible Geographical Differences in Arkansas Soybean Economics Within the Delta. Poster presented at the 61st Rural Life Conference, March 3, 2017, Pine Bluff, AR.
- Stuhlinger HC, Headlee WL, Foust AM. 2017. Enhancing black walnut seedling establishment in a northwest Arkansas creek bottom. In: Proceedings of the 19th Biennial Southern Silviculture Research Conference, Blacksburg, VA, 3/14-16 2017.
- Stuhlinger HC*, Headlee W, Foust A, Trauger J. Using tree shelters and fertilizer tablets to improve black walnut seedling establishment in NW Arkansas. Society of American Foresters National Conference in Albuquerque, NM, 11/15-19, 2017.
- Stuhlinger, H.C., M.G. Olson, B.A. Babst, and S.Y. Hossain. A comparison of slow-release watering devices for enhanced water delivery to newly planted urban trees. Poster presented at the International Society of Arborists Annual Meeting, Summer 2017.
- Wallen, K. E. & Daut, E. F. Using conservation marketing to reduce demand for illegal wildlife. Paper presented at the annual meeting of Human Dimensions of Wildlife Journal, Pathways Conference. Estes Park, CO. September 2017.
- Weatherly, D., Bataineh, M., and Thompson, L. Arkansas prescribed burning trends in relation to air quality standards. The Association for Fire Ecology 7th International Fire Congress, Orlando, Florida, November 28-December 2, 2017.
- White, D., Jr., and Tom Toman. Returning elk to eastern North America. 12th Western States and Provinces deer and elk workshop, Sun Valley, Idaho. May 3, 2017.

Notable Faculty or Faculty/Service Projects

- Mr. Tom Jacobs, Immediate Past President of the Arkansas Society of Professional Surveyors, 2016-2017
- Dr. Matthew Pelkki, Secretary of State of Arkansas Board of Registration for Foresters (appointed by Governor)
- Dr. Don White, Service on five Arkansas Game and Fish Commission Technical Committees
- Dr. Robert Ficklin, Chair- National Society of American Foresters Committee on Professional Recognition

CY17 Faculty Grant Awards (\$1,379,698)

- A comparison of slow-release watering devices for enhanced water delivery to newly planted urban trees. 2017 UAM Faculty Grant. \$1,500. Matt Olson, Ben Babst, and Chris Stuhlinger.
- Quantifying landscape-level distribution of ash trees – the hosts of invasive emerald ash borer. 2017 UAM Faculty Grant. \$1,442. Lu Liang.
- Building Spectral Libraries and Effective Indices for EAB Early Detection. UAM and Arkansas Space Grant Consortium. \$6,300. Lu Liang.
- Winter Foraging, Ecology, Depletion, and Body Condition of Geese. Ducks Unlimited. \$9,999.71. Douglas Osborne.
- From Forest to Campus: The Innovative Timber University. USDA Forest Service. \$73,542. Matthew Pelkki.
- Ecosystem Services of Short Rotation Woody Crops. USDA Forest Service. \$10,000. William Headlee.
- Arkansas Asset Initiative. National Science Foundation EPSCOR Program. \$57,804. Benjamin Babst.
- Would Warmer Temperature Regime in Southern Latitudes Result in Changes in Emerald Ash Borer Viltinism and Adult Emergence Phenology. USDA Forest Service. \$12,500. Mohammad Bataineh.
- Elk DNA Sampling. Arkansas Game & Fish Commission. \$30,368. Donnell White.
- Spatial Variation in Density of Male Turkeys for Informing Harvest and Fire Management Decisions: Phase II of the No-Jake Harvest Project. USDA Forest Service. \$12,236.77. Douglas Osborne.
- Genotyping White-tailed deer. Arkansas Game & Fish Commission. \$32,560. Donnell White.
- Pine Commodity Survey. CAPS. \$14,154. Mohammad Bataineh.
- Seasonal and Tree Size Related Effects on Biological Activity of Loblolly Pine and Sweetgum Bark. Arkansas ASTA Program. \$17,454. Benjamin Babst.
- Evaluating Extent and Severity of the Emerald Ash Borer Infestation and Monitoring its Expansion and Impacts. USDA Forest Service. \$30,000. Mohammad Bataineh.

- Evaluation of Wetlands Easements and their Management Needs to Achieve NRCS Goals. USDA Natural Resource Conservation Service. \$460,433. Benjamin Babst, Mohammad Bataineh, William Headlee, Lu Liang, Hal Liechty, Douglas Osborne, Matt Olson, Matthew Pelkki, Chris Stuhlinger.
- Arkansas Wood Utilization Council. USDA Forest Service. \$250,000. Philip Tappe, Matthew Pelkki, Kenny Wallen.
- Spatial Variation in Density of Male Turkeys for Informing Harvest and Habitat Management Decisions. Arkansas Game & Fish Commission. \$171,947. Douglas Osborne.
- Waterfowl Management and Conservation. Delta Waterfowl Foundation. \$27,278. Douglas Osborne.
- Forest Ecology Study. MONDI. \$2,504. Robert Ficklin.
- Arkansas ASSET Initiative III (Cellulosic). National Science Foundation. \$79,488. Benjamin Babst.
- Arkansas ASSET Initiative III (Cellulosic). National Science Foundation. \$78,188. William Headlee.

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

The School of Forestry and Natural Resources and the School of Agriculture have merged to form the first college on the UAM campus- the College of Forestry, Agriculture and Natural Resources. With this change there are realignments of administrative, teaching, and program support responsibilities.

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

Several changes to the Natural Resources Management and Land Surveying curricula were approved by the UAM Assembly. These changes were made following a review of all SFNR degrees/options by the SFNR faculty. Changes were made to improve the delivery of course content (e.g. elimination or addition of labs) and to address professional certification requirements (e.g. additional wildlife courses).

- SFNR 1: Minors in SFNR programs were removed.
- SFNR 2: SFNR emphasis areas of the General Studies degree program were eliminated.
- SFNR 3: Splitting SURV 2023 Geographic Coordinate Systems and Cartography into two separate courses- Coordinate Systems (2hrs) and Cartographic Design and Drafting (1hr)
- SFNR 4-7: Changing NRM prefixes of four geospatial courses to a new GIS prefix
- SFNR 8: Modifying SURV 4454 Advanced Surveying to incorporate a requirement for students to take the NCEES Fundamentals of Surveying (FS) exam

- SFNR 9: New Registered Foresters Test Prep course for the Forestry option of the NRM degree
- SFNR 10, 11 & 13: Modifying NR Economics, Forest Mgmt., and NR Biometrics to change the hour of laboratory to an hour of lecture- no change in total course credit
- SFNR 12, 17, 18 & 19: Renaming existing courses- WLF Techniques, Soils & Soils Laboratory, and WLF Population Ecology
- SFNR 14: Changing NRM capstone course format from two courses (NR Practicum I & II- 4 hrs. total) to a single NR Practicum course (3hrs)
- SFNR 15: Reconfiguring Intro Natural Resources Mgmt. course into an 8wk, 1cr. course
- SFNR 16: Addition of a lab to Fire Mgmt. (credit change from 2-3)
- SFNR 20: Modification of NR Seminar to a 3 credit format (from 1cr.), and broadened focus for General Education offering
- SFNR 21: Addition of WLF Conservation and Mgmt. course
- SFNR 22: Removal of Forest Health from the Wildlife Mgmt. and Conservation option of the NRM degree
- SFNR 23: Updated required coursework listing for NRM degree Core and Options

The School of Agriculture received approval for an Associate of Science in Agriculture. With this degree offering, students pursuing any of the Agriculture options will be able to earn a credential after completing their general education core and 19 hours of Agriculture courses plus six elective hours.

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

The unit invested in student experiential learning opportunities through the support of travel to and participation in professional national meetings. Faculty advisors helped students prepare both for presentations at these meetings and for participation in quiz bowl competitions. In addition to these formal events at the national meetings, faculty further engaged student development by incorporating one-day field tours to examine the flora and fauna of the regions where the meetings were held. Students who attended the Society of American Foresters meeting in Albuquerque, New Mexico, traveled to the peak of Sandia Crest. Stops during the ascent were made to note the changes in vegetation (species and structure) with changes in elevation. Issues related to water management in this arid region of the country also were discussed.

In an effort to explore new course content delivery methods, multiple faculty members used a new HoverCam Pilot for interactive lecture presentations. Beyond the classroom presentation capability of the system, a couple of faculty also noted the potential for developing content for online courses or for enhancing BlackBoard content in face-to-face courses.

Other Unit Data

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