



MARTIN

**Center of Excellence for
Experimental Learning in
Agricultural Science**

**FY 2018
Annual Report**

Department of Agriculture, Geosciences, and Natural Resources

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Center of Excellence for Experimental Learning in Agricultural Science Mission Statement

The mission of the Center of Excellence (COE) for Experimental Learning in Agricultural Science is to provide an innovative infrastructure through which existing and new experiential inter-disciplinary studies in production agriculture, the environment and conservation techniques can take place. The COE in the Agricultural Science is designed to create a model for quality teaching across various disciplines, while facilitating and increasing external grant and contract activities, increasing public/private partnerships, and increasing outreach efforts. Other goals of the COE in the Agricultural Science involve collaboration with secondary institutions, expanding livestock, crops, equipment, natural resource areas and other facilities to enhance experiential learning and yielding a major impact on the economy of the State of Tennessee.

Executive Summary

In accordance with the Center of Excellence (COE) for Experimental Learning in Agricultural Science mission statement, since January 2001, attention has been devoted to establishing a model field laboratory facility and resources to support experiential activities and research for students. This model field laboratory is used to promote and meet all goals of the COE mission statement. A major component of the COE is the operation of a teaching and demonstration farm to complement the ongoing academic programs in the Department of Agriculture, Geosciences, and Natural Resources (AGN) at the University of Tennessee at Martin (UTM). This endeavor was expanded effective January 1, 2006 when the Department of Agriculture, Geosciences, and Natural Resources assumed operational control of the entire 640 acres and associated buildings formerly operated by the Martin Experiment Station (University of Tennessee Institute of Agriculture). A major objective of this effort is to provide resources dedicated to the establishment of a quality experiential learning and applied research environment for the UTM campus and the citizens of Tennessee which meets the goals and objectives of the COE for Experimental Learning in Agricultural Science mission statement.

Presently, there are approximately 200 acres of COE property in field crop production with another 250 acres devoted to forage production and pasture for teaching herds/flocks of beef cattle, swine, horses, meat goats, and sheep. In addition, there are six outdoor research ponds (0.1 acre each) and ten indoor research tanks used for fisheries management. The COE also includes an alternative fuels (biofuels) laboratory, a wildlife biology field laboratory, a companion animal laboratory, and two Veterinary Health Technology teaching laboratories. As a major thrust of the COE, the UTM Teaching and Demonstration Farm provides resources and facilities for public service activities and research to support public and private stakeholders involved in the agricultural and natural resource sciences. Animals and facilities associated with the COE provide resources for training competitive teams for local, regional, and national competitions as well as involvement in assisting collegiate and high school FFA and 4-H teams preparing for and competing in their respective interscholastic events across the state which increases collaboration with secondary institutions and outreach efforts in accordance with the mission statement.

The University of Tennessee at Martin is an ideal location for the COE due to the existence of agricultural entities already in operation. The West Tennessee Agricultural Pavilion (Ned R. McWherter Agricultural Complex) serves as a hub of activity for clients in a variety of ways, ranging from livestock shows to the annual Santa's Village. The Santa's Village event has been running for the last 33 years and is a cooperation between the city of Martin and university faculty, staff, and students which provides great community outreach and community service through the collection of more than 18,000 canned goods and toy donations for underprovided in our county. (Figure 1) The COE enables current and future faculty to not only serve the academic needs of current campus-based and online students, but also to expand opportunities for a statewide mixture of students in secondary schools as well as adult stakeholders through continuing-education offerings and events. The COE features applied research and external grant supported projects that complement the undergraduate and graduate teaching missions of the University of Tennessee at Martin.



Figure 1. Santa's Village Display at the Ned R. McWherter Agricultural Complex

Funding provided by the Tennessee Department of Agriculture and the Tennessee Agriculture Enhancement Program funded the establishment and operation of a West Tennessee Animal Disease Diagnostic Laboratory (Figure 2) that opened on July 1, 2008. This laboratory serves as a satellite of the C.E. Kord Laboratory at the Ellington Agriculture Center in Nashville, Tennessee. Necropsies performed on animals used for food or fiber are performed at no charge to producers and public partners and all other lab services are performed on a fee schedule. The lab increases public and corporate partnerships with outreach efforts in addition to being a valuable teaching tool. The lab is also used for instruction and demonstration for students and visiting groups that come to campus.



Figure 2. West Tennessee Animal Disease Diagnostic Laboratory.

The Veterinary Health Technology Option in Animal Science provides students an opportunity to earn a 4-year degree with a major in Agriculture, while meeting all of the qualifications established by the American Veterinary Medical Association to sit for the National Licensing Exam for Veterinary Technicians. The Veterinary Health Technology Option received accreditation in May 2014 from the American Veterinary Medical Association and the Committee on Veterinary Technician Education and Activities (CVTEA).

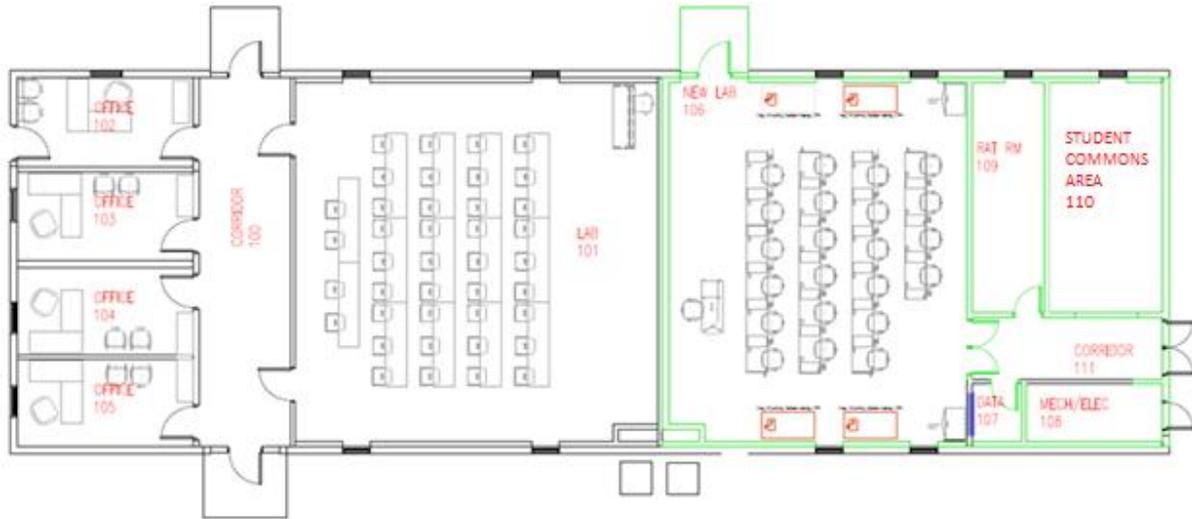


Figure 3. Vet Health Tech Facility Floor Plan

During spring 2015, a free stall barn adjacent to the Veterinary Technology Lab was partially renovated using Title III grant funds as well as funds secured from a USDA RBEG grant. The Title III grant is providing over \$300,000 over five years and for a four phase renovation (Figure 3) to the free stall barn. The barn was renamed the Veterinary Health Technology Facility. Phase I work totaled approximately \$140,000 and the partial renovation created a new state of the art smart classroom equipped with ClearTouch Panel computing technology. Phase II and III renovations began in 2016 and were completed in the summer of 2018 to provide four office spaces (Figure 4) and a state of the art laboratory for Veterinary Technology students.

Title III grant funds are currently being used for phase IV renovations on the rear section of the Veterinary Health Technology Facility to create a new teaching laboratory (Figure 5) for laboratory animals and a new student commons area for the growing Veterinary Health Technology Program. This project was started during the 2017-2018 academic year and will be completed before January 2019. This phase will help meet the growth of the Veterinary Health Technology option and will increase available research capacity for all Animal Science faculty.

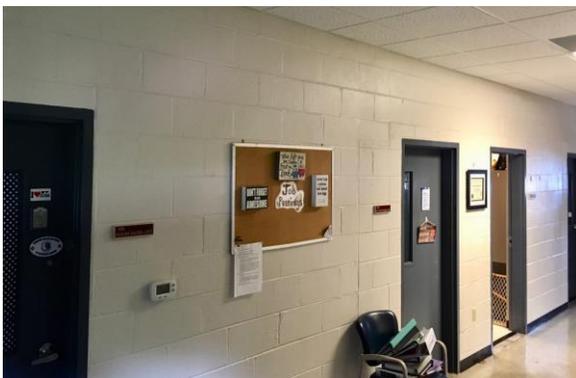


Figure 4. Offices at Vet Health Tech Facility



Figure 5. New Laboratory at Vet Health Tech Facility

Another important experiential learning project that has been funded through the UTM Provost's Office, and construction will begin October 2018, is the design and construction of a new Beef

Evaluation Center. This center will provide experiential learning opportunities for animal science students utilizing and growing the current cow-calf herd. The Beef Evaluation Center will include a 1,245 ft² laboratory and a 250 ft² student commons area, (Figure 6 and 7) and a large covered livestock working facility. This laboratory will also increase available interdisciplinary research capacity for all Animal Science faculty.



Figure 6. Future Beef Evaluation Center location on Teaching and Demonstration Farm.

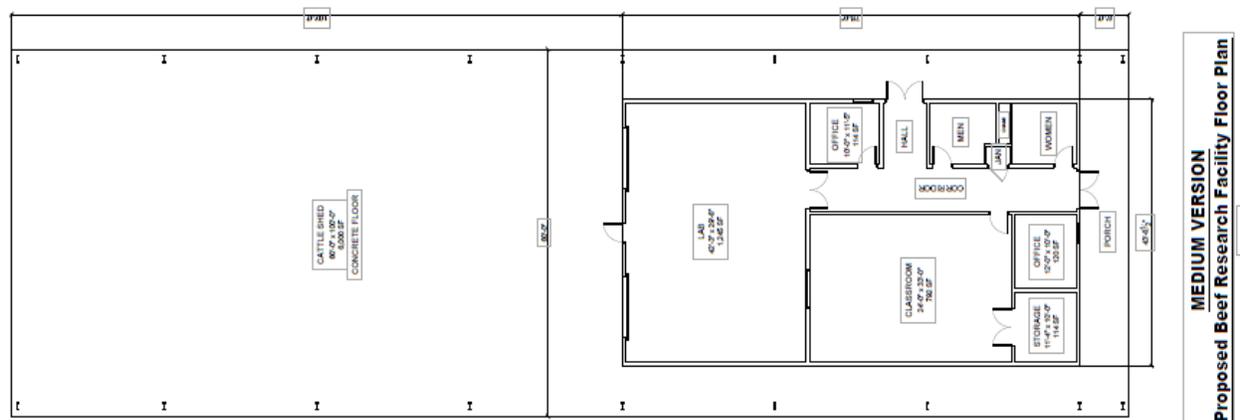


Figure 7. Beef Evaluation Center Floor Plan.

In 2012, alumni faculty member Dr. Bob Hathcock, with the support of current faculty member Dr. Joseph Mehlhorn and the Northwest Tennessee Beekeepers Association, installed a small 11-hive apiary on the north end of the UTM Teaching and Demonstration Farm. The purpose of this apiary was to provide a vehicle for instruction/outreach regarding best management practices in beekeeping for West Tennessee beekeepers. In 2016, Dr. Hathcock and the Association turned the apiary over to the Department of AGN for future use and upkeep. In 2017, the apiary was upgraded to 25 hives and the Department of AGN began to involve Teaching and Demonstration Farm student workers to complete apiary maintenance (see Figure 8). This provides a unique hands-on learning experience for these students. The apiary has also allowed for cross-collaboration between the Department of AGN and other departments on campus such as faculty and students from the Department of Chemistry. Beginning September 2017, honey and lip balm from the apiary is being sold in the UTM Bookstore, at UTM football games, and at other public events on the UTM campus.



Figure 8. Student workers completing apiary maintenance.

The Center of Excellence has hosted the Tennessee Governor’s School for the Agricultural Sciences (TGSAS) since 2004. (Figure 9) TGSAS provides exceptional agricultural experiential learning opportunity for Tennessee high school sophomores and juniors. The academic program is a 4-week residential program that covers a variety of agriculture and natural resource topics. Students complete college courses as well as learn research techniques through group study research projects. A copy of the 2018 TGSAS Annual Report can be found on the Center of Excellence web site. <http://www.utm.edu/departments/agnr/coe.php>

With the tremendous success of the Tennessee Governor’s School for the Agricultural Sciences from a student recruitment standpoint, there was an excellent opportunity to develop an “honors” program specifically for AGN students. With this vision and the help of a dedicated group of AGN faculty, the Agriculture, Geosciences, and Natural Resources Research Fellows Program (AGN-FRP) was born. The program includes an additional 12 hours of course work tailored to enhance students’ investigative skills and undergraduate research. The AGN-FRP provides an opportunity for outstanding AGN students to gain organized experiences in research and scholarship through a mentored relationship with an AGN faculty member. The primary goal of the AGN-FRP is to foster and enhance undergraduate research in a manner that is mutually beneficial for the student and the faculty mentor. The additional training from the FRP program has positioned the students to be successful in advanced academic fields.



Figure 9. 2018 TGSAS students, counselors, and faculty.

Faculty and Staff of Center of Excellence for Experimental Learning in Agricultural Science

Center of Excellence Faculty

Name	Title	Area of Expertise
Ary, Clint	Assistant Professor	Veterinary Science
Bird, Will	Assistant Professor	Agricultural Education
Buttrey, Emalee	Assistant Professor	Animal Science
Carroll, Erica	Lab Instructor	Veterinary Science
Cole, John T.	Lecturer	Agricultural Engineering
Darroch, Barbara	Assistant Professor	Plant and Soil Science
Gale, Paula	Professor	Soil Science
Mehlhorn, Joey	Director	TGSAS
Mehlhorn, Sandy	Associate Professor	Agricultural Engineering
Pelren, Eric	Professor	Wildlife Biology
Roberts, Jason	Associate Professor	Veterinary Science
Segar, Chrissie	Assistant Professor	Plant & Soil Science
Simpson, R. Mark	Professor	Geosciences-GIS/Meteorology
Smartt, Philip	Professor	Natural Resources Management
Stubblefield, Renee	Lab Instructor	Veterinary Science
Tewari, Rachna	Associate Professor	Agricultural Economics
Totten, F. Wesley*	*Director/Professor	Plant Science
Waldon, Amanda	Lab Instructor	Veterinary Science
Walker, Danny	Associate Professor	Veterinary Science
Watson, Diana	Lecturer	Animal Science

Center of Excellence Staff

Name	Title	Area of Expertise
Arant, Carrie	Business Manager	Budgets and Accounting
Bradford, Nathan	Teaching Farm Supervisor	Crop Management
Crockett, Jamie	Senior Farm Equipment Operator	Equipment Operation and Management
Cunningham-Corvin, Meghan	Equestrian Coach	Horsemanship
Jackson, Kim	Administrative Specialist	Student Support and Contracts
Jones, BeLynda	Administrative Specialist	Veterinary Health Technology
Leiter, Kim	Assistant Equestrian Coach	Horsemanship
Pierce, Mike	Farm Manager	Crop and Animal Management
Speight, Suezane	Administrative Specialist	TGSAS
Woods, Tara	Research Associate	Animal Care and Support

Student Information

The Center of Excellence for Experimental Learning in Agricultural Science works closely with the Department of Agriculture, Geosciences, and Natural Resources to meet all student needs and the COE mission statement. The department has a current enrollment of approximately 1,075 students with areas of interest in Agricultural Business, Agricultural Science, Animal Science, Plant and Soil Science, Agricultural Engineering Technology, Geosciences, Wildlife Biology, Park Administration, Environmental Management, and Soil and Water Conservation. To see specific student awards and internships see Objective 8 on page 21.

Planned Program Activity in FY2018

Activities of the Center for each general objective will include, but are not limited to:

Objective 1: Continue construction on the Veterinary Health Technology Facility.

Target: A 1,700 sq. ft. laboratory space and student commons area is currently under construction in FY 2017-2018. This laboratory will aid in student instruction, but will also provide needed research space for undergraduate, graduate, and faculty research projects in all areas of animal science. This project should be completed by end of summer 2018.

Response: Title III grant funds are being used to further renovations of phase IV on the rear section/half of the Veterinary Health Technology Facility. These renovations will create a new teaching laboratory (Figure 5) for laboratory animals and a new student commons area for the growing Veterinary Health Technology Program. This project began during the 2016-2017 academic year and will be completed by December 2018. This phase will help meet the growth of the Veterinary Health Technology option and will increase available research capacity for all Animal Science faculty.

Objective 2: Submit external grants seeking to support the Center and its activities consistent with the mission and objectives of the Center.

Target: Efforts will be directed at adding \$100,000 in new grants and contracts during FY 2017-18 and maintaining or continuing existing grants and contracts.

Response: During the 14th year of operation, faculty members of the Center of Excellence were successful in acquiring a total of \$661,550 in active grants (Appendix A). The continued success in acquiring external funding is due primarily to faculty appointments in the Department of Agriculture, Geosciences, and Natural Resources. The faculty identified potential funding sources and subsequently prepared grants and contracts from six different funding agencies in 2017-2018. Along with this funding the faculty continued research from grants and contracts established with five different funding agencies in prior fiscal years. A full report of all grants funded can be found on the Center of Excellence web site.

<http://www.utm.edu/departments/agnr/coe.php>

Objective 3: Continue with the planning and design phase of a \$1.5 million Beef Evaluation Center construction project.

Target: A new Beef Evaluation Center to support academics, cow-calf operation, and research and scholarly activity is underway for FY 2017-18. This facility will be comprised of a 40-seat state of the art classroom, a student commons area, and a large cattle working facility. This laboratory will aid in student instruction but will also provide needed research space for undergraduate, graduate and faculty research projects in all areas of animal science. This project should be completed by end of summer 2020.

Response:

The architects have completed the plans and they have been sent out for bid. Construction is scheduled to begin in October 2018.

Objective 4: Partner with agronomic companies desiring demonstration areas for seed and chemical applications on a cost-sharing basis.

Target: Continue field operations for the 200 acres of crops currently in production emphasizing variety trials and demonstration plots for alternative crops. Complete a systematic review of all agricultural production areas of the COE and amend where necessary to ensure optimum productivity (pH, fertilization, organic matter, etc.). Identify new partnerships for field trials and alternative crops to enhance area agricultural enterprises. Continue to offer producer-oriented field day programs in cooperation with area equipment dealers, chemical companies, and/or seed companies.

Response: Field operations continued for approximately 200-acres of field crops, including corn, soybeans, and wheat as principal cash crops (60-acres converted to hay production). Research plots for corn and soybean trials were established under the direction of Drs. Barbara Darroch and Paula Gale of the teaching faculty. Financial assistance from the Tennessee Soybean Promotion Council assists with soybean field trial research, and variety trial information is collected in cooperation with personnel from the University of Tennessee Institute of Agriculture Extension Service. Syngenta Corporate once again, played a major role in the research operations of the UT Martin farm this past year with several research trials that concluded in a field day for producers and other agricultural company personnel.

The Center of Excellence faculty and staff continue their relationships with H&R AgriPower and Tennessee Tractor, LLC for hosting equipment demonstrations and field day events on the Teaching Farm property. Companies providing seed and other planting materials to establish trials plots include:

- Bayer CropSciences
- Beck's Hybrids
- Helena Chemical
- Security Seed
- Syngenta
- Warren Seed
- Weakley County Farmers Co-op
- Winfield Solutions

Objective 5: Generate timely, state-of-the-art information on key topics related to food, agriculture, and the environment with special attention to emerging issues that might have long-term implications for production of agricultural commodities while protecting natural resources in Tennessee.

Target: Seek to sponsor at least 30 speakers/programs that will be directed at enhancing knowledge of emerging issues in the agricultural sciences to include natural resources.

Response:

1. Josh Justice, Nathan Bedford Forrest State Park- VET 320 (spring and fall)
2. Dr. Taintor DACVIM, DACVSMR, Auburn University, VET 340/VET 400
3. Erin Robbins LVT, Auburn University, VET 340/VET 400
4. Bob Tater, NCEMA, VET 320 (fall)
5. J.T. Burnley. Management of a Dressage Training Facility.
6. Dr. Heather Kelly, Extension/Research Plant Pathologist and IPM Coordinator, UT Extension/UTIA
7. Dr. Larry Steckel, Professor, Row Crop Weed Management, UT Extension/UTIA
8. Dr. Alan Windham, Professor of Plant Pathology, UT Extension/UTIA
9. Dr. Avat Shekoofa, Assistant Professor, Crop Physiologist, UTIA
10. Darrin Holder, Agronomy Manager, Winfield Solutions, Land O'Lakes
11. Shawn Butler, Research Associate II, UTIA
12. Jay Yeargin, Farmer, Yeargin Farms
13. Nick Hurdle, Graduate Student, University of Georgia – Tifton
14. Bethany Wolters, Graduate Student, Virginia Tech
15. Mike Saxton, NK Sales Representative, Syngenta
16. David Haggard, West Tennessee Regional Interpretive Specialist, Tennessee State Parks
17. Dr. Ray Jordan, Professor of Herpetology, Tennessee Technological University
18. Mr. Robert Brewer, Biology Associate Professor, Cleveland State Community College
19. Mr. Shawn Hughes, Park Ranger, Standing Stone State Park
20. Mr. Chris Cole, Park Manager, Standing Stone State Park
21. Mr. Steve Ward, Park Manager, Radnor Lake State Park
22. Ms. Sarah Geeslin, Park Ranger, Standing Stone State Park
23. Andy Wright, Assistant Manager, Fall Creek Falls State Park
24. Bob Tarter, Natural History Educational Company of the Midsouth
25. Bob Holliday, Park Manager, Johnsonville State Historic Park
26. Dr. Heather Kelly, Disease Focus for IPM, UT Extension
27. Dr. Scott Stewart, Bt IPM, UT Extension
28. Dr. Larry Steckel, Weed IPM, UT Extension
29. Dr. Eric Walker, IPM in Tobacco and Specialty Crops, UT Extension
30. Mr. Joshua Jones, IPM in Corn, Soybeans and Cotton, Bayer CropSciences
31. Dr. Jack Grubaugh, Mosquito IPM, UTM Dept. of Biology
32. Mr. Gilbert of the Centerville, TN municipal golf course
33. Mr. Perkins of the NRCS office in Dresden, TN
34. Mr. Doss of Inco Ag Irrigation
35. Mr. Mike Pierce , Manager UTM Teaching Farm
36. Mr. Shane Joyner, Live Production Manager Tyson
37. Dr. Seth Krantz, Veterinarian Tosh Farms.
38. Ms. Deb Kidwell, Owner/operator Lake Nowhere Mule and Donkey Farm
39. Blake Brown – Superintendent, Milan Research and Education Center
40. Jeff Fore – Researcher, The Nature Conservancy
41. Steve DePew – Soil Survey Leader, MLRA 134, NRCS Tupelo, MS
42. Craig Harris – Soil Survey Staff Milan Field Office

43. Dr. Forbes Walker – Associate Professor, UT Extension
44. Dr. Lori Duncan – UT Extension Specialist
45. Mr. Bob McCurdy – McCurdy Sod Farms
46. David Haggard - State Interpreter, TN State Parks
47. Derek and Micayla Giffin – Owners, Giffin Farms, Union City
48. Damon Hollis, Forester, TN Wildlife Resources Agency
49. Larry Armstrong, Manager, TN Wildlife Resources Agency
50. Dr. Jim Byford, UTM Dean Emeritus, Wildlife Biologist
51. Brittney Viers, Quail Forever
52. Michael Butler, Director, TN Wildlife Federation
53. Barron Crawford, US Fish & Wildlife Service
54. Chuck Yoest, TN Wildlife Resources Agency
55. Sally Palmer, The Nature Conservancy
56. Brennan Booker-AgriSoil Consulting
57. Nate Rottero-Beck’s Seed
58. Alex Jewell-Workman Consulting
59. Mack Ashburn-Ashburn and Nichols
60. Kaitlyn Bray- NVS- 2016 UTM Graduate- LVMT
61. Dr. Amy Walsh- MVS- Emergency Care and Pain Manager
62. Kim Madison- Administrator- MVS
63. Ben Heathcock- Dechra Veterinary Sales
64. Dr. Lauren Hillman- MVS- Veterinary Oncology
65. Susan Walker- BSN,MSN- Internship Interviews
66. Erin Robbins- Lead LVMT, Auburn Veterinary School
67. Ashley Lawrence- Administrator- Tennessee Veterinary Licensing Board
68. Doug Tindall - University of Missouri college of veterinary medicine
69. Rich Meiring – Mississippi State University College of Veterinary Medicine
70. Dr. Jennifer Taintor – Auburn College of Veterinary Medicine
71. Ben Heithcock – Dechra – Sales Manager
72. Kelly Kennedy – Memphis Veterinary Specialist

Objective 6: Communicate the objectives of the COE and related action programs to raise public awareness of the importance of the agricultural sciences and natural resources to the economic wellbeing of Tennessee and the surrounding areas.

Target: Continue to utilize technology to enhance education for on-campus and distance students. Endeavor to offer at least one new program promoting agriculture and natural resources in Tennessee. Maintain and enhance course offerings for dual enrollment programs with Tennessee high schools. Offer at least five department courses for online delivery.

Response: The following courses were taught for dual enrollment credit in the 2017-18 academic year.

AGEC 110	Introduction to Agricultural Business
AGEC 250	Introduction Agricultural Sales
AGRI 240	History of American Agriculture

ANSC 110	Introduction Animal Science
ANSC 210	Introduction Horse Science
ANSC 230	Exotic & Companion Animal Management
ANSC 260	Behavior Farm & Companion Animal
ANSC 270	Animal Welfare and Ethics
GEOL 110	Introduction Physical Geology
GEOL 120	Environmental Geology
GEOG 180	Special Topic - Introduction to Meteorology
NRM 100	Introduction National Resource Management
PLSC 110	Introduction Plant & Soil Science

In addition to the dual credit courses, many courses were offered for online delivery as well. All Agriculture Business courses are now offered online, in addition to numerous courses in all programs in agriculture and natural resources within the AGN department. New courses are being developed and added online yearly by COE faculty.

Objective 7: Provide a forum for dialogue, debate, information sharing, and consensus building among policymakers, researchers, and leaders in non-governmental organizations, the private sector, and media through seminars, workshops, conferences, service learning, and publications.

Target: Plan and present at least 8 seminars/workshops on current topics of interest to animal and crop producers as well as programs in natural resource management.

Response:

Presentations

Roberts, J.F. 2017. Continuing Education for Large Animal Veterinary Technicians. Music City Veterinary Conference. Murfreesboro, TN

Roberts, J.F. 2017. Update on the UT Martin Veterinary Science Program. Jackson Rotary Club. Jackson, TN

Danny Walker. Feb. 22-24, 2018. Music City Veterinary Conference. Improving Customer Service in the Veterinary Profession. Murfreesboro, TN

Sandy Mehlhorn. June 2017. Does Homework Help in Assessment Preparation at the College Level? Annual Meeting North American College Teacher in Agriculture. West Lafayette, IN.

Sandy Mehlhorn. July 2017. Developing Protocols for Using a UAV to Monitor Herd Health (presentation and conference paper). Annual Meeting American Society of Agricultural and Biological Engineers International. Spokane, WA.

Krueger, L.M., **P.M. Gale**, A. Gardiner, C. Harris and B. Hart. 2017. An ecosystem approach to classification of impacted low gradient floodplains in MLRA 134: Connecting soils, landforms and vegetation. National Cooperative Soil Survey Conference, Boise, ID.

Jess Bearse, **Paula M. Gale**, and Lauren Taylor. 2017. Nutrient dynamics in Soils under a Mixed Cover Crop. Annual Meetings American Society of Agronomy. Tampa, FL.

Paula M. Gale, John Cole and Rachna Tewari. 2017. STEM on the road: A Mobile Energy Classroom. Annual Meetings American Society of Agronomy. Tampa, FL.

Sarah Miller, **Paula Gale and Barbara Darroch.** 2017. The Effect of Cover Crop Seeding Rate on Subsequent Soybean Yield in West Tennessee. UTM-MSU Joint Sigma Xi Symposium and Scholarfest. UT Martin.

Paula M. Gale. 2017. Cover Crops: What we know and what we would like to know. Annual Meeting Tennessee Agricultural Producers Association. Pigeon Forge, TN.

Paula M. Gale, John Cole, and Rachna Tewari. 2017. STEM on the road: Mobile Renewable Energy Education. Tennessee Math Teachers Association Annual meeting. UT Martin.

Paula M. Gale. 2017. Dirty Math: An exploration of soil texture and the soil textural triangle. Tennessee Math Teachers Association Annual meeting. UT Martin.

Totten, F.W. 2017. Sprayer Calibration. Tennessee Parks and Recreation Association Annual Meeting. Williamson County Agriculture Expo, Franklin, TN.

Syngenta conducted a field day for Helena, July 2017. UTM Champions Club and field plots on the farm at UT Martin. **Nathan Bradford.**

Syngenta conducted a field day for CPS, July 2017. UTM Champions Club and field plots on the farm at UT Martin. **Nathan Bradford.**

Beck's. September, 2017 & March, 2018 Company Meeting. UTM Champions Club and field plots on the farm at UT Martin. **Nathan Bradford.**

Mike Pierce. 2017. Bee Presentation. 21st Century Club, Weldon Library, Martin, TN.

Mike Pierce. 2018. Bee Presentation. Northwest TN Beekeepers Field Day, UTM Champions Club Room and UT Martin farm.

Mike Pierce. 2018. Bee Presentation. Traveling Farm Exhibit, Paul Meek Library, UT Martin, Martin, TN.

Mike Pierce. 2018. Bee Presentation. Martin Elementary School – Kiwanis Club, Martin, TN.

Mike Pierce. 2018. Bee Presentation. Town and Gown Breakfast, UT Martin, Martin, TN.

Northwest Tennessee Beekeepers Association holds its monthly meeting in the UT Martin Ag Pavilion. **Mike Pierce.**

Sandy Mehlhorn and Jeff Lannom. 2017. West Tennessee Ag Agents Association and Specialist Annual Meeting. UTM Champions Club Room, UT Martin, Martin, TN.

Scholarly Activity

Mehlhorn, Sandy, Barbara Darroch, and Staci Williams Jackson. "Reduction of Collisions Through Education and Awareness in Tennessee." *Journal of Agricultural Safety and Health*, JASH 23(4): 6, 2017.

Harper, Garrett, **Joey Mehlhorn**, Rachna Tewari, and Ross Pruitt. "Understanding Farm to School Program Activity Among Private Schools in the Nashville MSA." International Food Marketing Research Symposium. Bournemouth, UK. June 14, 2018.

Tewari, Rachna, **Joey Mehlhorn**, Carmen Alamo Gonzalez, and Franklin Martinez. "Consumer Perspectives on the Senior Farmers' Market Nutrition Program (SFMNP): Evidence from West Tennessee and Puerto Rico." International Food Marketing Research Symposium. Bournemouth, UK. June 14, 2018.

Luitel, Kishor, Rachna Tewari, **Joey Mehlhorn**, Bonnie Daniel. "Classroom assessments to examine students' awareness of their attitudes, values and reaction to learners to instruction." Southern Agricultural Economics Association Meetings, Conference Paper. February 4, 2018.

Tewari, Rachna, Carmen Alamo, Franklin Martinez, **Joey Mehlhorn**, and April Jones. "Evaluating Farmers' Market Nutrition Programs (FMNP): Perceptions of Vendors and recipients in west Tennessee and Puerto Rico." Southern Agricultural Economics Association Meetings, Conference Paper. February 4, 2018.

McBride, Stephen, **Danny Walker, Jason Roberts**, and **Joey Mehlhorn**. "Qualities and Attributes of Successful Veterinary School Applicants." *Journal of Education and Training*, vol. 4, No. 2, August 2017. pp: 97-106 DOI: <https://doi.org/10.5296/jet.v4i2.11753>

Mehlhorn, Joey, Morgan Miles, Laurie Bonney and Rachna Tewari. "Perceptions of Entrepreneurship in a University Agribusiness Program: Developing A Scale." *International Journal of Food and Agricultural Economics*, vol. 5 No. 3, July 2017. pp. 27-33.

Professional Presentations

Lange, Kelley, Rachna Tewari, and **Joey Mehlhorn**. "Is the Virtual Grass Greener? Video Game Simulation Use as a Teaching Tool." Accepted for Oral Presentation 2018 NACTA Conference June 12-15, 2018, Ames, IA.

Ary, Clint, Will Bird, **Sandy Mehlhorn, Jason Roberts**, and **Joey Mehlhorn**. "Developing Service Learning Opportunities Across the Curriculum: People, Plants, and Puppies." Accepted for Oral Presentation 2018 NACTA Conference June 12-15, 2018, Ames, IA.

Bird, Will and **Joey Mehlhorn**. “A longitudinal analysis of recruitment trends following university summer programs in agriculture for high school scholars.” Accepted for Poster Presentation 2018 NACTA Conference June 12-15, 2018, Ames, IA.

Ary, Clint, Jason Roberts, Joey Mehlhorn, and Scott Parrott. “Using Data to Improve Academic Programs and Student Success.” Accepted for Oral Presentation 2018 NACTA Conference June 12-15, 2018, Ames, IA.

Singer, William, Will Bird, and **Joey Mehlhorn**. “Does it matter where you come from? A Qualitative comparison of effects on Tennessee Governor’s School for the Agricultural Sciences participants of varying demographic backgrounds.” Accepted for Poster Presentation 2018 NACTA Conference June 12-15, 2018, Ames, IA.

Mehlhorn, Joey. “Gale force winds in agriculture: Weathering the storm or riding the wave?” Credit Conference, Tennessee Bankers Association February 22-23, 2018.

Mehlhorn, Joey, Rachna Tewari, Ross Pruitt, and Scott Parrott. “Building relationships with agribusiness professionals through service programs.” Southern Agricultural Economics Association Meetings, Selected Poster Presentation, Jacksonville, FL February 6, 2018.

Garcia, Jessica, **Joey Mehlhorn,** Rachna Tewari, Scott Parrott, and Ross Pruitt. “Impacts on teaching practices associated with large student enrollments in online agribusiness courses.” Southern Agricultural Economics Association Meetings, Selected Poster Presentation, Jacksonville, FL February 4, 2018.

Anderson, Sarah, Scott Parrott, **Jason Roberts,** and **Joey Mehlhorn**. “Developing Probabilities for Enhanced Student Success on the National Licensing Exam for Veterinary Technologist.” Oral Presentation 2017 Tennessee Academy of Sciences Meetings, Martin, TN November 17, 2017.

Tewari, Rachna, Mark Simpson, **Joey Mehlhorn,** Naveen Musunuru and Brian Parr. “Building Capacity for Climate Change Education (CCE) and Expanding Research and Learning Opportunities in Rural Communities of Tennessee and Kentucky.” Poster Presentation 2017 Tennessee Academy of Sciences Meetings, Martin, TN November 17, 2017.

Counce, Alyssa, Rachna Tewari, and **Joey Mehlhorn**. “Entrepreneurship and Innovation in Agriculture.” Poster Presentation 2017 Tennessee Academy of Sciences Meetings, Martin, TN November 17, 2017.

Crews-Garcia, Jessica, Rachna Tewari, and **Joey Mehlhorn**. “Changing Strategies for Dealing with Large Online Class Sizes.” Poster Presentation 2017 Tennessee Academy of Sciences Meetings, Martin, TN November 17, 2017.

Roberts, Jason, Scott Parrott, and **Joey Mehlhorn**. “What Impacts Student Success on the Veterinary Technician National Examination?” Poster Presentation 2017 Tennessee Academy of Sciences Meetings, Martin, TN November 17, 2017.

Simpson, Robert, Rachna Tewari, **Joey Mehlhorn**, Brian Parr and Naveen Musunuru. "Climate Change Science Education and Research Potential in Rural Areas of Western Kentucky and Tennessee." Oral Presentation 2017 Tennessee Academy of Sciences Meetings, Martin, TN November 17, 2017.

Brown, Andrew, **Sandy Mehlhorn**, and **Joey Mehlhorn**. "Creating Synergy in Travel Study Experiences Across the Curriculum." 70th CIEE Conference, Austin, TX November 8, 2017.

Miles, Morgan, Laurie Bonney, Rajendra Adhikari, Rachna Tewari, and **Joey Mehlhorn**. "Benchmarking Entrepreneurship Education in U.S., Australian, and New Zealand University Agriculture Programs & Ag Entrepreneurship (A Mash Up)." Graham Centre for Agricultural Innovation Wagga Australia September 13, 2017.

Mehlhorn, J.E., Rachna Tewari, and Bridget Guerrero. "Innovative Methods for Teaching Industry Skills and Entrepreneurship to Students." Selected Symposium Presentation, 2017 Western Agricultural Economics Association Annual Meeting, Lake Tahoe, NV July 9-11, 2017.

Tewari, Rachna, **J.E. Mehlhorn**, Bonnie Daniel, and Kishor Luitel. "Examining students' awareness of their attitudes, values and reaction as learners to instruction." Selected Symposium Presentation, 2017 Western Agricultural Economics Association Annual Meeting, Lake Tahoe, NV July 9-11, 2017.

Ary, Clint, and **Jason Roberts**. "Promoting veterinary careers to high school students through hands-on experiences." Selected Oral Presentation, 2017 Tennessee Academy of Science, Martin, Tennessee, November 17, 2017.

Ary, Clint. Review of *Principles of Veterinary Parasitology*. *Journal of the Association of Veterinary Technician Educators*, no. 6, January 2018, p. 14.

J. E. Mehlhorn, Jason Roberts, Clint Ary, Danny Walker, and Renee Stubblefield. "Developing Distance Learning Programs in Veterinary Technology Management." 2017 NACTA Conference. Selected Poster Presentation. West Lafayette, IN. June 28, 2017.

Ary, Clint, Walker, D., Stubblefield, R., **Roberts, J.**, and **Joey Mehlhorn**. "Tools for Preparing Veterinary Technicians for College Success." 2017 NACTA Conference. Selected Poster Presentation. West Lafayette, IN. June 28, 2017.

Baker, Carrie and **Sandy Mehlhorn**. "A Comparison of Accuracy and Precision of Recreational Grade GPS Units." Oral presentation, Tennessee Geographic Information Council annual meeting, April 25-26, 2018, Burns, Tennessee.

Sullivan, Tina and **Sandy Mehlhorn**. "An In-Depth Look into Tennessee Agriculture: Who are Making the Most of Their Resources." Student oral presentation, Tennessee Geographic Information Council annual meeting, April 25-26, 2018, Burns, Tennessee.

Darroch, B.A. 2017. “Using collaboration and competition to help students learn to identify plants.” 2017 International Annual Meetings of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America. Tampa, FL. October 22–25, 2017.

Pierce, Kenneth W., and **B. A. Darroch.** 2017. “Allelopathic effect of *Arundo donax* L. aqueous extract on *Lens culinaris* Medik.” Tennessee Academy of Science Annual Meeting, Martin, TN. November 17, 2017.

Singer, William and **B.A. Darroch.** 2017. “Soybean Plant Development and Soil Conditions Affected by Planting Date and Maturity Group.” Tennessee Academy of Science Annual Meeting, Martin, TN. November 17, 2017.

Abstracts

Bird, Will, Todd Winters and **J.E. Mehlhorn.** “Engaging Agriculture Students Through Living Learning Communities.” (Abstract) *NACTA Journal* vol. 61:1pg: 91 (2017).

Tewari, Rachna, Ross Pruitt, Scott Parrott, and **J.E. Mehlhorn.** “Student Perceptions of Collaboration and Team Interaction Impacting Overall Learning Experience: How Effective is Team Work?” (Abstract) *NACTA Journal* vol. 61:1pg: 76 (2017).

Lillge, Liz, **B. Darroch** and **P.M. Gale.** 2017. “Soil nitrogen and carbon levels in early-planted soybeans versus late-planted soybeans.” (Abstract) *Journal of the Tennessee Academy of Science* 92(1-2): 28.

Tyner, Kayley, Kacie Clark, Hailey Holcomb, Hope Renfro, and **Barbara Darroch.** 2017. “Effects of fungicide timing on soybean yield and yield components.” (Abstract) *Journal of the Tennessee Academy of Science* 92(1-2): 28.

C. S. Darroch. 2018. “Multiple Homework Attempts – A Strategy for Student Success?” University of Tennessee at Martin, Martin, TN. *NACTA Journal*. 62 (suppl 1): 105 (abstract 220).

C. S. Darroch. 2017. “Can a lab exercise encourage participation in undergraduate research?” *NACTA Journal*. 61 (suppl 1): 103 (*abstract 148*).

E. K. Buttrey and **C.S. Darroch.** 2017. “No, I’m Not a Veterinarian! Increasing Student Awareness of Career Diversity within the Animal Sciences.” *AJAS*. doi:10.2527/ssasas2017.0109 (*abstract*).

Paula M. Gale and Gregory H. Nail. 2018. “Educational Enhancements at UT Martin Associated with the Joint Water for Agriculture Project.” Annual meeting Tennessee American Water Resources Association. Montgomery Bell, TN.

John Cole, Rachna Tewari, **Paula Gale**, and Patty Flowers. 2017. “Expanding Energy Education in West Tennessee: The UTM Mobile Energy Classroom.” Annual NIFA Project Directors meeting. San Diego, CA.

Paula M. Gale, John Cole and Rachna Tewari. 2017. “STEM on the road: A Mobile Energy Classroom.” Annual meetings American Society of Agronomy. Tampa, FL.

Jess Bearse, **Paula M. Gale** and Lauren Taylor. 2017. “Nutrient Dynamics in Soils under a Mixed Cover Crop.” Annual meetings American Society of Agronomy. Tampa, FL.

Krueger, L.M., **P.M. Gale**, A. Gardiner, C. Harris and B. Hart. 2017. “An ecosystem approach to classification of impacted low gradient floodplains in MLRA 134: Connecting soils, landforms and vegetation.” National Cooperative Soil Survey Conference, Boise, ID.

Rachna Tewari, John Cole, **Paula Gale** and Patty Flowers. 2017. “Expanding energy education in West Tennessee: The UTM mobile energy classroom.” Annual meeting National Association of Colleges and Teachers of Agriculture. (NACTA) Purdue, IN.

Jonathan Wilson, **Paula Gale** and Mark Simpson. 2017. “Water movement habits in the Hatchie River Watershed.” Annual meeting Tennessee Academy of Sciences. UT Martin.

April D. Jones, Mark Simpson and **Paula Gale**. 2017. “Soil climate analysis network (SCAN) in Middle Tennessee.” Annual meeting Tennessee Academy of Sciences. UT Martin.

Rachna Tewari, John Cole, **Paula Gale** and Patty Flowers. 2017. “Expanding energy education in West Tennessee: The UTM mobile energy classroom.” Annual meeting Tennessee Academy of Science. UT Martin.

Presentations without Published Abstracts

Paula M. Gale. 2017. “Cover Crops: What we know and what we would like to know.” Annual meeting Tennessee Ag. Producers Assn. Pigeon Forge, TN.

Paula M. Gale, John Cole and Rachna Tewari. 2017. “STEM on the road: Mobile Renewable Energy Education.” Tennessee Math Teachers Association Annual Meeting, UT Martin.

Paula M. Gale. 2017. “Dirty Math: An exploration of soil texture and the soil textural triangle.” Tennessee Math Teachers Association Annual Meeting, UT Martin.

Paula M. Gale. 2017. “Women in STEM – Agriculture and Natural Resources.” UT Martin chapter of American Association of University Women, Martin, TN.

Sarah Miller, **Paula Gale** and **Barb Darroch**. 2018. “The Effect of Cover Crop Seeding Rate on Subsequent Soybean Yield in West Tennessee.” UTM.-MSU joint Sigma Xi Symposium and Scholarfest. UT Martin.

Diana Watson. Guest speaker at Master Beef Seminar, UT Extension Decatur County. March 6, 2018.

C. S. Darroch. 2018. “Multiple Homework Attempts – A Strategy for Student Success?” Poster presented at NACTA Annual Meeting, Iowa State University, Ames, IA. June 12-15, 2018.

C.S. Darroch. 2018. “Multiple Homework Attempts – A Strategy for Student Success?” Poster presented at UT Martin Assessment Day Workshop, University Center Ballroom, April 20, 2018.

Objective 8: Provide enhanced laboratory facilities and resources to support experiential learning.

Target: Expand experiential learning experience for students with at least one international travel course and offer at least 40 opportunities for internship participation. Identify opportunities for international study or internships.

Response: Student Internships/Experiential Learning Experiences and their respective Hosts:

1. Kenneth Abel - St. Jude
2. Chris Barkley - Nashville Veterinary Specialists
3. Chelsea Bear - Nashville Veterinary Specialists
4. Maigan Boyd - North Madison Animal Clinic
5. Savannah Brown - Trigg County Veterinary Clinic
6. Shelby Carter - Memphis Veterinary Specialists
7. Kirstie Childress - Northside Animal Clinic
8. Carly Dorval - Memphis Veterinary Specialists
9. Karlie Doyle - Parkway Animal Clinic
10. Makayla Harrison - Tennessee Equine Center
11. John Lawson Keeton - Henderson County Animal Clinic
12. Brittany McClanahan - Huntingdon Animal Clinic
13. Joanna Vise - Auburn University Veterinary School
14. Jaymie Chism - Munford Animal Clinic
15. Teri "Brooke" Allred - The Pet Hospitals
16. Kaitlyn Asmar - Blue Pearl
17. Blair Barber - Collierville Animal Clinic
18. Shannon Boggess - C.E. Kord
19. Trisha Crutcher - Veterinary Specialists
20. Bailey Forrester - Auburn Vet School
21. Kelsey Harnett - Nashville Veterinary Specialists
22. Kaylin Hedge - St. Louis Veterinary Specialty Services
23. Payton Hendershott - Animal Care Hospital
24. Miracle Jones - UTCVM
25. Laura Kimble - Shelby Center Hospital for Animals
26. Kayla Laub - Dyer County Animal Hospital
27. Leigh Malanga - UTCVM
28. Ashlyn Mitchell - Auburn Vet School

29. Madeline Moore - Nashville Veterinary Specialists
30. Lillian Peebles - Alpharetta Animal Hospital
31. McKenzie Potts - Nashville Veterinary Specialists
32. Stasha Prince - Murfreesboro Animal Clinic
33. Stephanie Taylor - Pet Emergency Clinic
34. Maryann Upchurch - Blue Pearl
35. Clint Beel - US Fish & Wildlife Service
36. Ben Chrestman - US Fish & Wildlife Service
37. Colton Barber - TN Wildlife Resources Agency
38. Thomas Dowdy - TN Stream Mitigation Program
39. Jerod Grooms - TN Wildlife Resources Agency
40. James Moore - US Fish & Wildlife Service
41. Shelby Blanton - TN Wildlife Resources Agency
42. Andre Delcalzo - US Forest Service
43. Chandler Prince - TN Dept. of Transportation
44. Katelyn Templeton - Knoxville Zoo
45. Brandon Weber - US Fish & Wildlife Service
46. Quanah Allen - US Fish & Wildlife Service
47. Michael Singer – NRCS
48. Vivica Miller – TN State Parks
49. Autumn McLaughlin – Monsanto Hawaii
50. James Davis - CPS
51. Matthew Smith - AgriGold
52. Thomas Bomar – Ellis Heating
53. Christopher Stanley - Monsanto
54. Jackson Baxter – Valley Irrigation
55. Grady Hood – ARP & American Farms
56. James Beesinger - Farm Credit Mid- America
57. Tristen Avent - Liberty Hill Farms
58. Victoria Dean – DuPont Pioneer
59. Elizabeth Hurt – UT Extension, Hardin County
60. Addison Davidson – USDA/NRCS
61. Sarah Dodd – UT Institute of Agriculture (UTIA)
62. Jess Bearse – UT Martin (with Paula Gale)
63. Will Singer – UT Martin (with Paula Gale)
64. Jacob Kennedy – Randy Todd Farms
65. Zach McNeill – BASF
66. Kristy Piper – Color Burst Landscapes
67. Kayley Tyner – UT Institute of Agriculture
68. Clint Beel - US Fish & Wildlife Service
69. Ben Chrestman - US Fish & Wildlife Service
70. Colton Barber - TN Wildlife Resources Agency
71. Thomas Dowdy - TN Stream Mitigation Program
72. Jerod Grooms - TN Wildlife Resources Agency
73. James Moore - US Fish & Wildlife Service

74. Shelby Blanton - TN Wildlife Resources Agency
75. Andre Delcalzo - US Forest Service
76. Chandler Prince - TN Dept. of Transportation
77. Katelyn Templeton - Knoxville Zoo
78. Brandon Weber - US Fish & Wildlife Service
79. Quanah Allen - US Fish & Wildlife Service
80. Jacob Barber - Louisville Bats
81. Zach Weatherford - Windyke Golf Club
82. Zach Williamson - Louisville Bats
83. Aaron Wolters - Maury Co. CO-OP
84. Austin Brewer - Valhalla Golf Club
85. Eric Gilbert - Vanderbilt Legends Club
86. Sharon Rayder - Chickasaw State Park
87. Timothy C. Robertson - New Johnsonville State Park
88. Bailey M. Barber - Mousetail Landing State Park
89. John M. Campbell - Self-Employed Consultant
90. Courtney L. White - Nathan Bedford Forrest State Park
91. Conner Simpson - Chester and Fowler farms
92. Matt Poteete – Monsanto
93. Travis Prather - UTM Farm

Objective 9: Support local, regional and national competitions.

Target: Continue to host or participate in a minimum of 10 local, regional and/or national competitions by UT Martin students and faculty.

Response:

Competitions

1. Tennessee Academy of Science – November 2017
2. American Society of Agricultural and Biological Engineers -¼ Scale Student Design Competition(1 staff and 5 students) June 2017
3. Tennessee Geographic Information Council annual meeting student competition winner was Tina Sullivan in April 2018
4. Southeastern Association of Fish and Wildlife Agencies Annual Conference, Louisville, KY – 25 students - October 2017
5. TN Chapter of The Wildlife Society Annual Meeting, Fall Creek Falls State Park, TN – 6 students - March 2018
6. Southeastern Wildlife Student Conclave, Louisiana State University, LA – 19 students - March 2018
7. North American College Teacher in Agriculture annual meeting
8. Students attending American Society of Agronomy, Crop Science Society of America and Soil Science Society of America – Tampa FL – Nov. 2017
9. 2018 Southeastern Wildlife Student Conclave

10. Hosted Sustainable Agriculture Field School on UTM campus. Last week in July 2017. 20 students participated from Arkansas State University, Southeast Missouri State University and UT Martin.
11. Hosted Southeast Regional Collegiate Soils Contest. There were 98 participants representing 12 schools throughout the Southeast. October 2017, Moscow TN.
12. Hosted the National Collegiate Soils Contest. There were 226 participants representing 24 schools from Rhode Island to California. March 2018, Martin. TN.
13. UTM Weeds team – Took two teams (total of six students) to Southern Weed Science Society Weeds Contest in Vero Beach, FL, August 2017.
14. Four Students participated in the SASES Crops Judging Showcase competition at the 2017
15. International Annual Meetings of ASA, CSSA, and SSSA. Tampa, FL, October 2017.
16. Took a team of six students to participate in the Crops Contest at the NACTA Judging Conference in Norfolk, NE, April 2018
17. SAEA (Southern Agricultural Economics Association) meetings held in Jacksonville, FL in February 2018 with about 8 students.

Student Awards

1. Sarah Anderson - Student Agriculture Section – 3rd place
2. Sarah Miller - John E. McMahan Horticulture Award
3. Kevin Robertson - Outstanding Agricultural Business Students
4. Aeron Smith - Outstanding Agricultural Business Students
5. Rebecca Arwood - Outstanding Online Agricultural Business Students
6. Will Nichols - Outstanding Online Agricultural Business Students
7. Erin Owenby - Outstanding Online Agricultural Business Students
8. Kelsey Lumpkin - Outstanding Agricultural Education Students
9. Coty Vannoy - Outstanding Agricultural Education Students
10. Janie Peery - Outstanding Agricultural Communications Student
11. Will Singer - Outstanding Agricultural Science Production Student
12. Tina Sullivan - Outstanding Agricultural Engineering Technology Student
13. Ben Kendall - Future Surveyor Award
14. Jessica Bearse - Outstanding Crop and Soil Management Student
15. Margaret Nagai – Outstanding Animal Science Student
16. Trisha Crutcher - Outstanding Veterinary Health Technology Students
17. Stephanie Taylor - Outstanding Veterinary Health Technology Students
18. Loren Campbell - Outstanding Veterinary Science Student
19. Shelby Blanton - UTM AGN Outstanding Wildlife Student Award
20. Robert Tamboli - UTM AGN Outstanding Wildlife Student Award
21. Quanah Allen - UTM AGN Byford Conservation Award
22. Will Singer – Golden Opportunity Scholar – American Society of Agronomy
23. Jessica Bearse – 2nd place poster presentation undergraduate students - American Society of Agronomy
24. Nick Hurdle – Frank Heim Scholarship - American Society of Agronomy
25. Will Singer - UTM Outstanding Senior in Agronomy, American Society of Agronomy
26. Shelby Blanton - UTM AGN Outstanding Wildlife Student Award
27. Robert Tamboli - UTM AGN Outstanding Wildlife Student Award
28. Quanah Allen - UTM AGN Byford Conservation Award

29. Bailey M. Barber, - Outstanding Student in NRM
30. Courtney L. White - Silver Park Outstanding Senior

Objective 10: Provide enhanced resources to assist in the operation of the Tennessee Governor's School for the Agricultural Sciences.

Target: Continue to seek new experiential learning opportunities for the Tennessee Governor's School for the Agricultural Sciences.

Response: The Department of Agriculture, Geosciences, and Natural Resources hosted the 2018 Tennessee Governor's School for the Agricultural Sciences (TGSAS) on campus from June 2 – June 30, 2018. The program consisted of 34 scholars from across the state of Tennessee. Scholars completed three hours of college coursework. Courses taught included AGEC 110: Introduction to Agribusiness or NRM 100: Introduction to Natural Resource Management. Scholars also participated in research activities through Group Study Projects (GSP). The GSP's covered precision agriculture and veterinary medicine. All GSP's covered the scientific method and focused on experimental research activities.

Several educational study tours were incorporated throughout the 4-week program. These included field trips to the following:

1. Yeargin Farms Tour, Greenfield, TN
2. Woolfolk Farms, Medina, TN
3. AgriCenter International, Memphis, TN
4. Ducks Unlimited, Memphis, TN
5. Tosh Farms, Henry, TN
6. Batey Farms, Murfreesboro, TN

Planned Program Activity in FY2019

Activities of the Center of Excellence for each general objective will include, but are not limited to:

Objective 1: Complete construction on the Veterinary Health Technology Facility.

Target: Complete Phase IV of the facility renovation which includes a student commons area, an animal laboratory, improved parking area, and external renovations to improve the appearance of the building.

Objective 2: Submit external grants seeking to support the Center of Excellence and its activities consistent with the mission and objectives of the Center of Excellence.

Target: Efforts will be directed at adding \$100,000 in new grants and contracts during FY 2018-19 and maintaining or continuing existing grants and contracts.

Objective 3: Continue with the planning and design phase of a \$1.5 million Beef Evaluation Center construction project.

Target: A new Beef Evaluation Center to support academics, cow-calf operation, and research and scholarly activity is underway for FY 2018-19. This facility will be comprised of a 40-seat state of the art classroom and student commons area. This laboratory will aid in student instruction but will also provide needed research space for undergraduate, graduate, and faculty research projects in all areas of animal science. This project should be completed by end of summer 2020.

Objective 4: Partner with agronomic companies desiring demonstration areas for seed and chemical applications on a cost-sharing basis.

Target: Continue field operations for the 200 acres of crops currently in production emphasizing variety trials and demonstration plots for alternative crops. Complete a systematic review of all agricultural production areas of the COE and amend where necessary to ensure optimum productivity (pH, fertilization, organic matter, etc.). Identify new partnerships for field trials and alternative crops to enhance area agricultural enterprises. Continue to offer producer-oriented field day programs in cooperation with area equipment dealers, chemical companies, and/or seed companies.

Objective 5: Generate timely, state-of-the-art information on key topics related to food, agriculture, and the environment with special attention to emerging issues that may have long-term implications for production of agricultural commodities while protecting natural resources in Tennessee.

Target: Seek to sponsor at least 30 speakers/programs that will be directed at enhancing knowledge of emerging issues in the agricultural sciences to include natural resources.

Objective 6: Communicate the objectives of the COE and related action programs to raise public awareness of the importance of the agricultural sciences and natural resources to the economic wellbeing of Tennessee and the surrounding areas.

Target: Continue to utilize technology to enhance education for on-campus and off-campus students. Endeavor to offer at least one new program promoting agriculture and natural resources in Tennessee. Maintain and enhance course offerings for dual enrollment programs with high school students in Tennessee. Offer at least ten department courses for online delivery.

Objective 7: Provide a forum for dialogue, debate, information sharing, and consensus building among policymakers, researchers, and leaders in non-governmental organizations, the private sector, and media through seminars, workshops, conferences, service learning, and publications.

Target: Plan and present at least 8 seminars/workshops on current topics of interest to animal and crop producers, as well as programs in natural resource management.

Objective 8: Provide enhanced laboratory facilities and resources to support experiential learning.

Target: Expand experiential learning experience for students with at least one international travel course and offer at least 40 opportunities for internship participation. Identify opportunities for international study or internships.

Objective 9: Support local, regional, and national competitions.

Target: Continue to host or participate in a minimum of 10 local, regional ,and/or national competitions by UT Martin students and faculty.

Objective 10: Provide enhanced resources to assist in the operation of the Tennessee Governor’s School for the Agricultural Sciences.

Target: Continue to seek new experiential learning opportunities for the Tennessee Governor’s School for the Agricultural Sciences.

Schedule 7

CENTERS OF EXCELLENCE ACTUAL, PROPOSED, AND REQUESTED BUDGET

Institution:

University of Tennessee at Martin

Center:

Experimental Learning in Agricultural Science

Expenditures	FY 2017-18 Actual			FY 2018-19 Proposed			FY 2019-20 Requested		
	Matching	Appropriations	Total	Matching	Appropriations	Total	Matching	Appropriations	Total
Salaries									
Faculty	\$27,529	\$55,000	\$82,529		\$53,116	\$53,116		\$55,772	\$55,772
Other Professional	\$105,926	\$35,000	\$140,926	\$27,896	\$60,000	\$87,896	\$29,291	\$63,000	\$92,291
Clerical/ Supporting	\$12,362	\$38,000	\$50,362	\$2,469	\$30,000	\$32,469	\$2,592	\$31,500	\$34,092
Assistantships	\$105,583		\$105,583	\$59,901		\$59,901	\$62,896		\$62,896
Total Salaries	\$251,400	\$128,000	\$379,400	\$90,266	\$143,116	\$233,382	\$94,779	\$150,272	\$245,051
Longevity	\$3,213		\$3,213			\$0			\$0
Fringe Benefits	\$46,055	\$77,000	\$123,055	\$14,308	\$80,000	\$94,308	\$15,023	\$84,000	\$99,023
Total Personnel	\$297,455	\$205,000	\$502,455	\$104,574	\$223,116	\$327,690	\$109,802	\$234,272	\$346,714
Non-Personnel									
Travel	\$12,980	\$10,000	\$22,980	\$11,000	\$20,000	\$31,000	\$11,550	\$21,000	\$32,550
Software			\$0			\$0			\$0
Books & Journals			\$0			\$0			\$0
Other Supplies	\$227,528	\$74,588	\$302,116	\$141,837	\$52,155	\$193,992	\$148,929	\$55,013	\$203,942
Equipment	\$61,262		\$61,262	\$15,000		\$15,000	\$15,750		\$15,750
Maintenance	\$5,861		\$5,861	\$2,500		\$2,500	\$2,625		\$2,625
Scholarships	\$5,750		\$5,750			\$0			\$0
Consultants	\$58,731		\$58,731	\$35,000		\$35,000	\$36,750		\$36,750
Renovation			\$0			\$0			\$0
Other (Specify):			\$0			\$0			\$0
Utilities and Fuel	\$10,505	\$5,000	\$15,505	\$10,000	\$5,000	\$15,000	\$10,500	\$5,000	\$15,500
Rental and Ins	\$9,271		\$9,271	\$15,000		\$15,000	\$15,750		\$15,750
			\$0			\$0			\$0
Total Non-Personnel	\$391,888	\$89,588	\$481,476	\$230,337	\$77,155	\$307,492	\$241,854	\$81,013	\$322,867
GRAND TOTAL	\$689,343	\$294,588	\$983,931	\$334,911	\$300,271	\$635,182	\$351,656	\$315,285	\$666,941
Revenue									
New State Appropriation		\$294,588	\$294,588		\$300,271	\$300,271		\$315,285	\$315,285
Carryover State Appropriation			\$0			\$0			\$0
New Matching Funds	\$692,555		\$692,555	\$334,911		\$334,911	\$351,656		\$351,656
Carryover from Previous Matching Funds			\$0			\$0			\$0
Total Revenue	\$692,555	\$294,588	\$987,143	\$334,911	\$300,271	\$635,182	\$351,656	\$315,285	\$666,941

Staffing of the Center of Excellence for Experimental Learning in Agricultural Science

The staffing strategy for the COE focuses on bringing a diversity of talent to the Center of Excellence to better meet the goals and objectives of the Center of Excellence. This is accomplished by offering staffing appointments ranging from 25 percent to 50 percent to faculty and staff of the Department of Agriculture, Geosciences, and Natural Resources. Staffing includes a Director (25 percent appointment) and Business Manager (25 percent appointment) and faculty who are selected through a proposal process (25 percent appointments and one cooperating faculty member with no formal assigned appointment) and the Director of the Tennessee Governor’s School for the Agricultural Sciences. Three support staff members are also assigned to the COE. Staffing assignments (with COE appointment percent) include:

Administration:

Dr. Wes Totten	Director (25%)
Mrs. Carrie Arant	Business Manager (25%)

2018-19 RFP Faculty:

Dr. Clint Ary	Animal Diagnostic Lab (25%)
Dr. Philip Smartt	Park and Recreation and Forestry (25%)

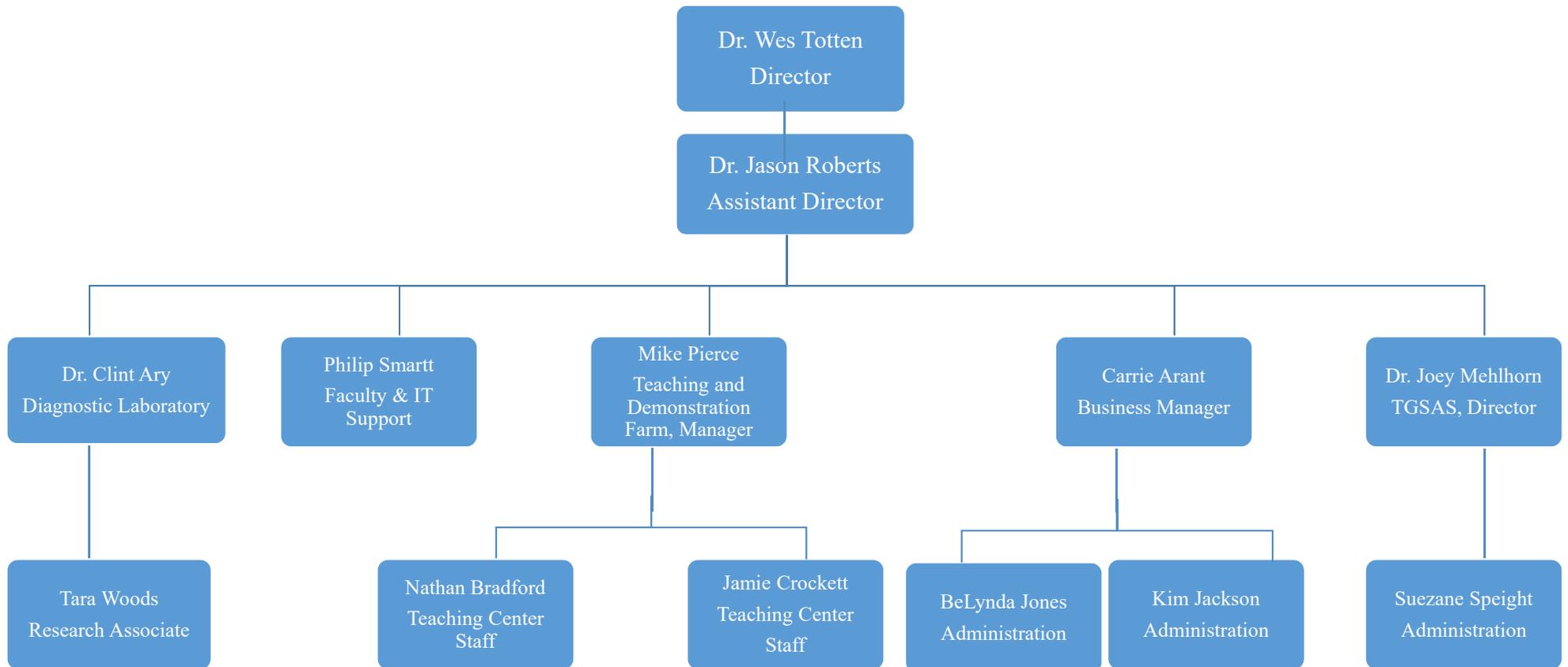
Staff:

Mr. Michael Pierce	Teaching and Demonstration Farm/Ag Pavilion (100%)
Mr. Nathan Bradford	Teaching and Demonstration Farm/Ag Pavilion (100%)
Mr. Jamie Crockett	Teaching and Demonstration Farm/Ag Pavilion (100%)
Mrs. Tara Woods	Research Associate/Diagnostic Laboratory (100%)

A complete Faculty/Staff listing is on page 9.
An organizational staffing chart is included.

Center of Excellence for Experimental Learning in the Agricultural Science

Organizational Staffing



Contact Information



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Summary of Contract, Grant and Unrestricted Gift Activity

- Darroch, Barbara. "Effect of Planting Date and Maturity Group on Plant Development and Yield of Soybean." Tennessee Soybean Promotion Board \$13,345 (Funded)
- Darroch, Barbara. "Effect of Planting Date and Maturity Group on Plant Development and Yield of Soybean." Tennessee Soybean Promotion Board \$13,340 (Funded)
- Gale, Paula. "Capacity Building Across Upper Mid-South Institutions: Enhancing Teaching and Research (ETR) Through Cover Crop Management." United States Department of Agriculture, National Institute of Food and Agriculture \$40,367 (Funded)
- Gale, Paula. "Increasing the Resilience of Agricultural Production in the Tennessee and Cumberland River Basins through More Efficient Water Resource Use." National Institute of Food and Agriculture \$15,911 (Funded)
- Gale, Paula. "Benefits of Mixed Species Cover Crops in Soybean Production Systems: A Student Learning Experience." Tennessee Soybean Promotion Board \$8,433 (Funded)
- Gale, Paula. "An Ecosystem Approach to Classification of Impacted Low Gradient Floodplains in MLRA 134: Connecting Soils, Landforms and Vegetation." United States Department of Agriculture, Natural Resources Conservation Service \$80,136 (Funded)
- Gale, Paula. "Investigating Benchmark Soil Landscape in the South: Linking soils, landscapes, vegetation and hydrology." United States Department of Agriculture, Natural Resources Conservation Service \$60,958 (Funded)
- Gale, Paula. "Nutrient Dynamics in Soils Along the Forked Deer River, North Jackson Restoration Site." State of Tennessee, West Tennessee River Basin Authority \$32,000 (Funded)
- Mehlhorn, Joseph. "Tennessee Governor's School for Agricultural Sciences" State of Tennessee, Department of Education \$156,000 (Funded)
- Mehlhorn, Sandy. "Development of Unmanned Aerial Systems in Precision Agriculture." Tennessee Soybean Promotion Board \$6,000 (Funded)
- Mehlhorn, Sandy and Philip Smartt. "RTOT: Enhancing Unmanned Aerial System-based Precision Agriculture Education by Integrating Research, Teaching and Outreach in Tennessee" Sub-awardee with Middle Tennessee State University, United States Department of Agriculture, National Institute of Food and Agriculture \$13,635 (Funded)
- Pruitt, J. Ross. "Finding Specialty Niche Markets for Farmers Using Social Aspects of Food." United States Department of Agriculture, National Institute of Food and Agriculture \$96,425 (Funded)
- Roberts, Jason. Funding for operation of West Tennessee Animal Disease Diagnostic Laboratory. State of Tennessee, Department of Agriculture \$125,000 (Funded)