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Introduction

Dr. Jeremy Pickens is an Assistant Extension Professor in the Department of Horticulture at Auburn University. With 50% research and 50% extension appointment, Dr. Pickens's research and extension programs are closely intertwined. Dr. Pickens's applied research revolves around the needs of Alabama's nursery, greenhouse, and Christmas tree industries. Generally, his research and Extension programs focus on reducing environmental stress in container nurseries and greenhouses, improving water and fertilizer use efficiency, and pest management. Additionally, Dr. Pickens provides technical assistance and extension programming for greenhouse vegetable crops. Being stationed at the Ornamental Horticulture Research Center in Mobile, AL, allows Dr. Pickens to work closely with the nursery industry through technical assistance and diagnostic services.

Education

Doctor of Philosophy, 2015. Auburn University, School of Fisheries, Aquaculture and Aquatic Sciences, Auburn, AL. Dissertation Title: Integrating Effluent from Recirculating Aquaculture Systems with Greenhouse Cucumber and Tomato Production.

Master of Science, 2008. Auburn University, Department of Horticulture, Auburn, AL. Thesis Title: Evaluation of Horticulture Applications of Light Expanded Clay Aggregates.

Bachelor of Science, 2005. Auburn University, Department of Horticulture, Auburn, AL.

Major: Horticulture (Nursery and Greenhouse Production Tract).

Minor: Agronomy

Professional Experience

Auburn University <i>Assistant Extension Professor</i>	2020 - Present
Auburn University <i>Extension Specialist</i>	2016 - 2019
Auburn University <i>Research Associate IV</i>	2007 - 2016

Other Work-Related Experience

Auburn University - Auburn, AL <i>Agriculture Technician</i>	2007 - 2008
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Auburn University - Auburn, AL <i>Graduate Research Assistance</i>	2006 - 2007
Auburn University - Auburn, AL <i>Student Research Technician</i>	2004 - 2005
Blooming Colors , - Auburn, AL (Landscape and Garden Center), Auburn, AL	2003 - 2005
Palms Unlimited (Field and Container Nursery) (seasonal) Mobile, AL	2000 - 2002
The Garden Center - Mobile, AL (Summer work)	2000
Laurel Place Nursery – Mobile, AL (Summer work)	1999

A. HONORS AND AWARDS

- 2024 Distinguished Service Award. National Association of County Agricultural Agents.
- 2023 Outstanding Educational Material Award from the American Society for Horticulture Science. 2023. Title: Commercial Horticulture: Making a Difference in the Food Systems (2021 Impacts). Authors: Ayanava Majumdar, Ann Chambliss, Harli Willis, Edgar Vinson, Elina Coneva, Jeremy Pickens, Camila Rodrigues, Andre da Silva, Ed Sikora, John Nabors.
- 2021 Rittenour Award for Excellence in Production Agriculture and Forestry (\$10,000 gift towards research). Alabama Farmers Federation.
- 2017 1st place for Research Poster at the 2017 Alabama Agriculture County Agents and Specialist meeting
- 2017 2nd place National Winner for Applied Research Poster. 2017 National Association of County Agriculture Agents.
- 2010 Selected for the Preparing Future Faculty Program, 2010-2011. Coordinated by the Biggio Center Auburn University.
- 2019 Silver Placement for Info. Ed. Video Production for Gen. Audience and General Public. 2019 Association for Communication Excellence. Bridget Brown, Maggie Lawrence, Kelly Palmer, Fudd Graham, Jeremy Pickens, and Emery Tscheter.
- 2015 Selected for a Southern Sustainable Agriculture Research and Education travel grant to attend the Southeastern Sustainable Agriculture Working Group Conference, 2015.

B. RESEARCH AND SCHOLARLY ACTIVITIES

Peer-Reviewed Research Publications

19. Lindquist, A., K. Kent, **J. Pickens**, P. Bartley III, D.B. Watts, H.A. Torbert. 2024. Nutrient competitive effects in chrysanthemum amended with flue gas desulfurization gypsum. HortScience. In print.
18. McBrayer, R.H., **J.M. Pickens**, A.L. Witcher, D.E. Wells, and J.L. Sibley. 2022. Effects of nursery container color and spacing on root zone temperatures of 'Soft Touch Holly.' Agriculture 12:2165.
17. Wallace-Springer, N., D.E. Wells, **J.M. Pickens**, E. Ayipio, and J. Kemble. 2022. Effects of hydraulic retention time of aquaculture effluent on nutrient film technique lettuce productivity. Agronomy 12:2570.
16. Blanchard, C., D.E. Wells, **J.M. Pickens** and D.M. Blerish. 2020. Effect of pH on cucumber growth and nutrient availability in a decoupled aquaponic system with minimal solids removal. Horticulturae 6 (1):10.
15. Marble, S.C. and **J.M. Pickens**. 2020. Tolerance of three deep south non-turf ornamental groundcovers to applications of postemergence herbicides. J. of Environ. Hort. 38(3) 91-100.
14. Witcher, A., **J.M. Pickens**, and E. Blythe. 2020. Container color and compost substrate affect root zone temperature and growth of "Green Giant" Arborvitae. Agronomy 10(4):484.
13. Witcher, A., **J.M. Pickens**, and E. Blythe. 2020. Container type and substrate affect root zone temperature and growth of 'Green Giant' Arborvitae. Horticulturae 6 (2):22.
12. Krofft, C., **J.M. Pickens**, A. Newby, J.L. Sibley, G. Fain. 2020. The effect of leaching fraction-based irrigation on fertilizer longevity and leachate nutrient content in a greenhouse environment. Horticulturae 6(3):43.
11. **Pickens, J.M.**, J.J. Danaher, J.L. Sibley, J.C. Chappell, and T.H. Hanson. 2020. Integrating greenhouse cherry tomato production with biofloc tilapia production. Horticulturae 6(3):44
10. Pattillo, A., W.G. Foshee, E. Blythe, **J.M. Pickens**, D. Wells. T.A. Monday, and T. Hanson. 2020. Performance of aquaculture effluent for tomato production in outdoor raised beds. HortTechnology 30(5):1-8.
9. Murphy, A.M., G.B. Runion, S.A. Prior, H.A. Torbert, J.L. Sibley, G.B. Fain, and **J.M. Pickens**. 2019. Effects of fertilizer placement on greenhouse gas emissions from a sun and shade grown ornamental crop. J. Environ. Hort. 37:74-80.

8. Sydney C. Holmes, Daniel E. Wells, **Jeremy M. Pickens**, Joseph M. Kemble. 2019. Selection of heat tolerance and sensory evaluation of *Lactuca sativa* L. cultivars grown in in deep water culture. *Horticulturae*. 5:50.
7. Sibley, J.L. X. Yang, W. Lu, D.J. Eakes, C.H. Gilliam, W.G. Foshee, **J.M. Pickens** and B. Zinner. 2018 Effects of a nonionic surfactant on growth, photosynthesis, and transpiration of New Guinea impatiens in the greenhouse. *J. Environ. Hort.* 36(2) 73-81.
6. Sibley, J.L. X. Yang, W. Lu, D.J. Eakes, C.H. Gilliam, W.G. Foshee, B. Zinner. and **J.M. Pickens**. 2018. 'Effects and Cost Estimation of an Irrigation Applied Surfactant in Greenhouse Crop Production. *Food Studies*.
5. Beauchamp, W.R., **J.M. Pickens**, J.L. Sibley, J.A. Chappell, N.R. Martin, A.F. Newby, and. 2017. Response of bibb lettuce to salt additives in integrated aquaponic systems. *Inter. J. Veg. Sci.* <https://doi.org/10.1080/19315260.2017.1378787>
4. Danaher, J.J., **J.M. Pickens**, J.L. Sibley, J.A. Chappell, T.R. Hanson and C.E. Boyd. 2016. Tomato seedling growth response to different water sources and a substrate partially replaced with dewatered aquaculture effluent. *Int. J Recycl Org Waste Agriculture*. 5:25-32
3. Danaher, J.J., **J.M. Pickens**, J.L. Sibley, J.A. Chappell, T.R. Hanson, and C.E. Boyd. 2013. Petunia growth response to container substrate amended with dewatered aquaculture effluent. *HortTechnology* 23(1): 57-63.
2. Danaher, J.J., **J.M. Pickens**, J.L. Sibley, J.A. Chappell, T.R. Hanson, and C.E. Boyd. 2014. [Growth of tomato seedlings in commercial substrate amended with dewatered aquaculture effluent. *Inter. J. Veg. Sci.* 20\(4\): 340-353.](#)
1. **Pickens, J.M.**, G.B. Fain, J.L. Sibley, C.H. Gilliam and J.W. Olive. 2009. Evaluation of clay aggregates in perennial offshoot production. *J. Environ. Hort.* 27:1-6.

Peer-review Articles Submitted

1. Lindquist, A. *, J Pickens, R Prasad, E Brantley, G Fain, **P Bartley**. 2024. Evaluation of petunia growth characteristics in response to application of a novel poultry-derived fertilizer. *HortTechnology*.

Abstracts, Posters and Presentations at Professional Conferences and Meetings

49. Syed, H., J. Pickens, and T. Rehman. 2024. Smart Inventory Management and Quality Assurance System for Ornamental Nurseries. Auburn Research Symposium.
48. Lindquist, A., G. Fain, J. Pickens, E. Brantley, R. Prasad, and P. Bartley. 2024. Nutrient release characteristics of a novel poultry-litter derived fertilizer. Auburn Research Symposium.
47. Syed, H., Rehman, T. U., & Pickens, J. 2023. Automated In-field Ornamental Nursery Plant Counting and Quality Assessment with End-to-End Deep

- Learning for Inventory Management. Graduate Research Poster Showcase, Auburn, AL, October 26, 2023.
46. Syed, H., Rehman, T. U., & Pickens, J. 2023. Automated In-field Ornamental Nursery Plant Counting and Quality Assessment with End-to-End Deep Learning for Inventory Management. Graduate Engineering Research Showcase, Auburn, AL, October 13, 2023.
 45. Kesheimer, KA, *K Owsley, and J Pickens. 2023. Managing two-spotted spider mites, *Tetranychus urticae*, in greenhouse hemp in Alabama. "Science of Hemp: Production and Pest Management Meeting Proceedings (2022)," Science of Hemp Annual Meeting: Vol. 3, Article 1. Available at: <https://digitalcommons.murraystate.edu/soh/vol3/iss1/1>
 44. Owsley, K, KA Kesheimer, and J Pickens. 2024. Evaluating the use of the plant growth regulator, Uniconazole, on hemp transplants. "Science of Hemp: Production and Pest Management Meeting Proceedings (2023)," Science of Hemp Annual Meeting: Vol 4, Article 1. Accepted.
 43. Ryals, J.B. P.R. Knight, R. A. Melanson, A.T. Bowden, C.E.H. Coker, S.A. Langlois. H.N.Williams, J.M. Pickens, R.C. Stephenson and G. Bi. Effects of X-ray irradiation on populations of *pseudomonas amygdali* pv. *Loropetali* pv. Nov. SR ASHS Oklahoma City, OK. 2023.
 42. Ryals, J. P.R. Knight, C.E. Coker. G.B. Posadas, S. Lu, J. Pickens and R. Stephenson. 2023. Utilizing x-ray irradiation as a method of control of *loropetalum* gal. ASHS Orlando, FL 2023.
 41. Bartley, P.C., J.M. Pickens, and J.S. Fields. 2023. Evaluation of commercially available moisture sensors for irrigation management in container plant nurseries. ASHS Orlando, FL 2023.
 40. Pickens, J.M., K.T. Owsley, Paul C. Bartley. 2023. Effects of lime particle size and rate on pH buffering capacity and growth of container grown nursery crops in coastal Alabama. ASHS Orlando, FL 2023.
 39. Majumbdar, A., A. Chambliss, H. Willis, E. Sikora, K. Kesheimer, J. Pickens, E. Vinson, E. Coneva, J. Kemble, A. da Silva. D. Han, R. Prasad, A. Gamble, S. Li, A. Rabinowitz, J. Jacobi, K. Conner, S. Thomas, and M. Ulmer. 2022. How the Alabama Extension Commercial Horticulture Program Team utilized social media and evaluation metrics for virtual event planning during the Covid-19 pandemic. SR ASHS. New Orleans, LA.
 38. McBrayer, R.H., J.M. Pickens, D.E. Wells, J.L. Sibley. 2022. Root zone temperature of 'Soft Touch' Holly affected by pot color and density. SR ASHS New Orleans LA
 37. Owsley, K. J. Pickens, and K. Kesheimer. 2021. Phytotoxicity of Tolerant Exempt Pesticides on Hemp Production. 2nd Annual Science of Hemp Conference. (Poster and Abstract)
 36. Owsley, K., K. Kesheimer and J. Pickens. 2021 Evaluation of Biological Insecticides Efficacy for Spider Mites on Greenhouse Hemp. 2nd Annual Science of Hemp Conference. (Scientific Presentation and Abstract)
 35. D.A. Pattillo, D. Wells, **J.M. Pickens**, W. Foshee, T. Monday, and T. Hanson. 2020 . Performance of aquaculture effluent for vegetable crop production in outdoor raised beds in Alabama. Aquaculture America.

34. Shi, R., D.E. Wells, **J.M. Pickens**, F.W. Woods, and D.M. Blersch. 2019. Effects of root zone temperature on total phenolics of hydroponic lettuce (*Lactuca sativa* L. 'Rex') grown under full spectrum LED. HortScience.
33. Blanchard, C.E., D.E. Wells, **J.M. Pickens**, D.M. Blersch. And M.R. Smith. 2019. Optimum planting density and substrate combination for Socrates' cucumber grown in an aquaponic system. HortScience 54:S396
32. Blanchard, C.E., D.E. Wells, **J.M. Pickens** and D.M. Blersch. 2019. Optimum production cycle length for 'Delsta' cucumbers grown in an aquaponic system. HortScience 54:S371
31. Shi, R., D.E. Wells, **J.M. Pickens**, and D.M. Blersh. 2019. Effects of root zone temperature on growth of hydroponic lettuce (*Lactuca sativa* L. 'Rex') grown under full spectrum LED. HortScience 54:S368.
30. Xia, M., D. Wells, F. Woods, and **J.M. Pickens**. 2019. Effects of root zone chilling on growth and total phenolic content of romaine lettuce varieties grown using nutrient film technique. HortScience 54:S368
29. Kroft, C., A. Newby, and **J. Pickens**. 2019. Collection of on-site irrigation management data in Alabama nurseries. HortScience 54:S367
28. **Pickens, J.M.**, D.E. Wells and J.R. Kessler. 2019. Evaluation of shade cloth type on greenhouse cooling. HortScience 54:S378.
27. **Pickens, J.M.**, D.E. Wells, and J.L. Sibley. 2019. Effects of sodium chloride on hydroponically grown lettuce from high salinity irrigation sources. HortScience. 54:S385
26. Xia, M., D. Wells, F. Woods, and **J. Pickens**. 2019. Mitigating Lettuce Tipburn by Increasing Horizontal Air Flow Speed in Deep Water Culture System. HortScience 54:S397.
25. Burkett, K., and **J.M. Pickens**. 2018. Economics of building a greenhouse in Alabama. Southern Extension Economics Committee. (**in press**)
24. Wells, D.E. and **J.M. Pickens**. 2018. Effects of Nutrient Solution Temperature on Growth of Greenhouse Grown Lettuce (*Lactuca sativa*L.) HortScience 53:S467.
23. Witcher, A.L., and **J.M. Pickens**. 2018 Container color effects on Root Zone Temperature and Growth of Arborvitae (*Thuja occidentalis* 'Green Giant'). HortScience. 53:S467
22. **Pickens, J.M.**, D.E. Wells, J.R. Kessler, Jr.3, and J.L. Sibley. 2018. The effect of shade cloth color on greenhouse cooling efficiency. HortScience 53:S491.
21. **Pickens, J.M.**, L.C. Graham, and K. Palmer. 2017. Evaluation of bifenthrin for control of tawny crazy ants (*Nylanderia fulva*) in container substrates. Annual Imported Fire Ant and Other Invasive Ants Conference. Mobile, AL.
20. **Pickens, J.M.**, L.C. Graham, and K. Palmer. 2017. Evaluation of bifenthrin for control of tawny crazy ants (*Nylanderia fulva*) in container substrates. Alabama Association of County Agriculture Agents and Specialist. Point Clear, AL.
19. **Pickens, J.M.**, L.C. Graham, and K. Palmer. 2017. Evaluation of bifenthrin for control of tawny crazy ants (*Nylanderia fulva*) in container substrates. Alabama National Association of County Agriculture Agents. Salt Lake City UT.

18. **Pickens, J.M.**, L.C. Graham, and K. Palmer. 2017. Evaluation of bifenthrin for control of tawny crazy ants (*Nylanderia fulva*) in container substrates. Southeastern Branch of the Entomological Society of America Annual Meeting. Memphis. TN.
17. Landers, E.T., D.E. Wells, and **J.M. Pickens**. 2017. Effects of increased nutrient solution temperature on lettuce (*Lactuca sativa* L. 'Rex') grown using nutrient film technique. 2017. Southern Region American Society for Horticulture Science. Mobile, AL. (in press)
16. Holmes, S.C., D.E. Wells, J.M. Kemble, and **J.M. Pickens**. 2017. Using sensory evaluation to assess consumer preference for hydroponically-grown lettuce. Southern Region American Society for Horticulture Science. Mobile, AL. (in press)
15. **Pickens, J.M.** and S.C. Marble. 2017. Evaluation of phytotoxicity of preemergent herbicides in container grown windmill palm (*Trachycarpus fortunei*). Southern Region American Society for Horticulture Science. Mobile, AL. (in press)
14. Holmes, S, D, Wells, **J. Pickens**, and J. Kemble. 2016. Quantifying buyer preference for greenhouse grown lettuce. *HortScience* 51:S52.
13. Graham, L.C., K. Palmer, and **J.M. Pickens**. Status and management of tawny crazy ants (*Nylanderia fulva*) in Alabama, 2015. Imported Fire Ant and Invasive Pest Ant Conference Proceedings
12. **Pickens, J.M.** 2014. Integrating recirculating aquaculture systems with greenhouse vegetable production. Alabama Water Resource Conference Mobile, AL.
11. **Pickens, J.M.**, J.J. Danaher, J.A. Chappell, J.L. Sibley, T.R. Hanson, and C.E. Boyd. 2013. Nutrient assimilation of aquaponic cucumbers and its role in economics and aquaponic system design. *Aquaculture America*. Nashville, Tennessee. Page 858.
10. Danaher, J.J., **J.M. Pickens**, J.A. Chappell, J.L. Sibley, T.R. Hanson, and C.E. Boyd. 2013. Marigold and petunia growth response to filtrate exiting a geotextile bag dewatering aquaculture effluent. *Aquaculture America*. Nashville, Tennessee. Page 646.
9. Danaher, J.J., **J.M. Pickens**, J.A. Chappell, J.L. Sibley, T.R. Hanson, and C.E. Boyd. 2013. Potential benefits of aquaculture effluent. *Aquaculture America*. Nashville, Tennessee. Page 972
8. Danaher, J.J., **J.M. Pickens**, J.L. Sibley, J.A. Chappell, T.R. Hanson, and C.E. Boyd. 2013. Dewatered aquaculture effluent as substrate amendment for tomato transplant production. *Aquaculture America*. Nashville, Tennessee. Page 643.
7. **Pickens, J.M.**, J.L. Sibley, J.A. Chappell, J.J. Danaher, T.R. Hanson, C.E. Boyd. 2013. Phytoremediation of aquaculture effluent using beet alpha cucumber production. Southern Region American Society for Horticulture Science. Orlando Florida. *HortScience* 48(9):S41.
6. J.J. Danaher, J.L. Sibley, J.A. Chappell, **J.M. Pickens**, T.R. Hanson, and C.E. Boyd. 2013. Growth of tomato (*Lycopersicon esculentum*) seedlings in commercial substrate amended with dewatered aquaculture effluent. Southern

- Region American Society for Horticulture Science. Orlando Florida. HortScience 48(9):S63.
5. Beauhamp, W.R., J.L. Sibley, J.A. Chappell, N.R. Martin, and **J.M. Pickens**. 2013. Response of hydroponic bibb lettuce (*Lactuca sativa*) to salt additives in integrated aquaponic systems. Southern Region American Society for Horticulture Science. Orlando Florida. HortScience 48(9):S20.
 4. **Pickens, J.M.**, J.J. Danaher, J.A. Chappell, J.L. Sibley, T.R. Hanson, and C.E. Boyd. 2012. Using aquaculture effluent for media based aquaponic production of be it alpha cucumbers. International Conference of Recirculating Aquaculture, Roanoke, Virginia. Page 174.
 3. **Pickens, J.M.**, J.J. Danaher, J.A. Chappell, T.R. Hanson, J.L. Sibley, and C.E. Boyd. 2012. Aquaponics: A horticulture perspective. Proceedings of the Aquaculture Engineering Society's Sixth Issues Forum. Roanoke, Virginia. Page 2.
 2. Danaher, J.J., **J.M. Pickens**, J.L. Sibley, J.A. Chappell, T.R. Hanson, and C.E. Boyd. 2012. Dewatered aquaculture effluent from an intensive recirculating nile tilapia biofloc production system as a component of horticultural container substrate: Effects on petunia growth. Proceedings of the Aquaculture Engineering Society's Sixth Issues Forum. Roanoke, Virginia. Page 7.
 1. **Pickens, J.M.**, J.J. Danaher, J.A. Chappell, T.R. Hanson, J.L. Sibley and W.G. Foshee, III. 2011. Integration of intensive aquaculture and plant production. Alabama Fisheries Association Conference.

Non-refereed Research Publications (Symposium and Published Conference Proceedings)

27. J. Pickens and D. Held. 2021. Efficacy of various products for managing carpenter worm on oak, 2017. Arthropod Management Test 46 TSAB 103. (Editor reviewed technical article).
26. D. Held, J. Pickens, and K. Owsley. 2021. Effect of application timing on the efficacy of spinosad against Chilli thrips on potted Cleyera, 2019. Arthropod Management Test 46 TSAB 124. (Editor reviewed technical article).
25. Owsley, K., J. Pickens, J. Olive and D. Held. 2021. Comparison of plant protectants as a foliar spray against Chilli thrips, 2018. Arthropod Management Test 46 TSAB 102. (Editor reviewed technical article).
24. A.M. Murphy, S.A. Prior, G.B. Runion, H.A. Torbert, J.L. Sibley, G.B. Fain, and J.M. Pickens. 2019. Greenhouse gas emissions as impacted by high wood fiber substrate in the production of three annual crops. Proc. SNA Res. Conf. 63:51-66.
23. Pickens, J.M., K.N. Conner, and J.W. Olive. 2019. Research update on bacterial gall of Loropetalum. Proc. SNA Res. Conf. 63:110-114.
22. Pickens, J.M., R.J. Kessler, and D.E. Wells. 2019. Evaluation of shade cloth color in cooling efficiency. Proc. SNA Res. Conf. 63:175-178.
21. Witcher, A.L. and **J.M. Pickens**. 2019. Effects of compost substrates on root zone temperature and growth of arborvitae. Proc. SNA Res. Conf. 63:44-50.

20. Pickens, J.M., and J.W. Olive. 2019. Effects of lime and fertilizer rate on the growth of citrus rootstock, *Poncirus trifoliata* var. *monstrosa* 'Flying Dragon.' Proc. SNA Res. Conf. 63:37-43
19. Pickens, J.M., D. Held, and K. Owsley. 2019. Time of day influences performance of spinosad against Chilli thrips. Proc. SNA Res. Conf. 63:193-197.
18. Palmer, K., L.C. Graham, and **J.M. Pickens**. 2018. Let's get the info out about crazies (tawny crazy ants, that is). **NCUE need update info**
17. Brown B.W., J.L. Sibley, J.M. Pickens and H.A. Torbert. 2018. Results using flue gas desulfurization gypsum in soilless substrates for greenhouse crops. Proc. SNA Res. Conf. 62:26-28.
16. Pickens, J.M. and A.L. Witcher. 2018. Effects of container color on root zone temperature and growth of 'Green Giant' Arborvitae. Proc. SNA Res. Conf. 62:2-6.
15. Fudd, L.C. and **J.M. Pickens**. 2016. Status of Tawny Crazy Ants in Alabama. Imported Fire Ant Conference.
14. Pickens, J.M. and L.C. Graham. 2016. Evaluation of bifenthrin in controlling Tawny Crazy Ants (*Nylanderia fulva*) in container substrates. Proc. SNA Res. Conf. 61:
13. Marble, S.C. and J.M. Pickens. 2015. Who wants to be a researcher? Conducting on-farm Research. Com. Proc. Int. Plant Prop. Soc. 65: (in press).
12. Pickens, J.M., L.C. Graham, K.R. Paler, and J.W. Olive. 2015. Tawny crazy ant: A potential new ant pest in container nurseries. Proc. SNA Res. Conf. 60: (in press).
11. Marble, S.C. and J.M. Pickens. 2015. Weed control inside greenhouses and enclosed structures. Society of American Florists 31st Annual Pest and Production Management Conference Proceedings. Pages 51-55.
10. Sleeper, A.M., J.A. Chappell, J.M. Pickens, W.G. Foshee, III, and J.L. Sibley. 2009. Integration of intensive aquaculture and greenhouse crop production. Proc. SNA Res. Conf. 54:106-110.
9. Pickens, J.M., J.L. Sibley, C.H. Gilliam, S.F. Bilgili, J.B. Hess, K.S. Macklin, and J.O. Donald. 2009. Evaluation of bark-based poultry litter as a substrate component in nursery crop production. Proc. SNA Res. Conf. 54:121-123.
8. Pickens, J.M., J.L. Sibley, G.B. Fain, C.H. Gilliam and J.W. Olive. 2009. The lightweight aggregate HydRocks® as a perlite substitute. Proc. SNA Res. Conf. 54:401-404.
7. Pickens, J.M., J.L. Sibley, C.H. Gilliam, G.B. Fain, D.E. Wells and J.W. Olive. 2008. Lightweight aggregate HydRocks®: A novel approach to rooting and bare root cuttings. Com. Proc. Int. Plant Prop. Soc. 58:573-577.
6. Pickens, J.M., J.L. Sibley, E.K. Blythe, C.H. Gilliam, J.W. Olive, and G.B. Fain. 2008. Evaluation of the lightweight aggregate HydRocks® as a rooting substrate. Proc. SNA Res. Conf. 53:218-221.
5. Pickens, J.M., J.L. Sibley, G.B. Fain, J.W. Olive, M.S. Wilson, and C.H. Gilliam. 2008. Use of lightweight aggregate HydRocks® as a bare rooting substrate in perennial offshoot production. Proc. SNA Res. Conf. 53:244-246.

4. Wilson, M.S., J.L. Sibley, J.M. Pickens, and J.D. Williams. 2008. Partnerships to enhance departmental impact through endowments. Proc. SNA Res. Conf. 53:306-308.
3. Yang, X., W. Lu, J.M. Pickens, and J.L. Sibley. 2007. Effect of foliar applied paint on growth of *Ficus benjamina* L. Proc. SNA Res. Conf. 52:459-460.
2. **Pickens, J.M.**, J.L. Sibley, C.H. Gilliam, G.B. Fain and J.W. Olive. 2007. Use of lightweight aggregate 'HydRocks'[®] as a weed barrier. Proc. SNA Res. Conf. 52:187-189.
1. Pickens, J.M. and J.L. Sibley. 2006. Evaluation of HydRocks[®] as a substrate component for horticulture crops. Proc. SNA Res. Conf. 51:314-316.

Posters and Presentations at Field Days and Professional Meetings (where no proceedings or abstracts were published):

15. Pickens, J.M. 2024. White containers may reduce fertilizer costs. GSHE Research Conference
14. **Pickens, J.M.** 2023. A fresh look at lime rates. GSHE Research Conference
13. **Pickens, J.M.** 2023. Revisiting root zone temperatures. GSHE Research Conference
12. Kesheimer, K.A., K. Owsley, J. Pickens, 2022. Challenges in hemp IPM. Eastern Branch of the Entomological Society of America Annual Meeting, Philadelphia, PA.
11. Kesheimer, K.A., K. Owsley, J. Pickens. 2022. Managing two-spotted spider mites, *Tetranychus urticae*, in greenhouse hemp in Alabama. Science of Hemp: Production and Pest Management Meeting. Lexington, KY.
10. **Pickens, J.M.**, L. Graham, and K. Palmer. Stakeholder resources for management of the tawny crazy ant, *Nylanderia fulva* (Mayr). ESA-SEB meeting, March 5 2019, Mobile AL.
9. Owsley, K., D.W. Held, **J. Pickens**. 2019. Trying to prevent insecticide resistance among Chilli thrips in woody plant nurseries in Alabama. ESA-SEB meeting, March 5 2019, Mobile AL.
8. Held, D.W., **J.M. Pickens**, and D. Bartlett. Ethanol lures are not attractive to wood boring moths (Lepidoptera: Cossidae and Sesiidae). ESA-SEB meeting, March 5 2019, Mobile AL.
7. Held, D.W., **J. Pickens**, and D. Bartlett. 2018. Carpenterworm moths do not respond to ethanol baited traps. ESA annual meeting, Nov 11-14, Vancouver BC
6. **Pickens, J.M.**, J.A. Chappell, T.R. Hanson, J.L. Sibley, and J.J. Danaher. Using aquaculture effluent for horticulture crops. 2012. Aquaculture America. New Orleans, LA.
5. Sleeper, A.M., J.M. Pickens, J.A. Chappell, J.L. Sibley and W.G. Foshee. Ornamental Horticulture Substation Field Day. 2009. Integrating intensive aquaculture with horticulture crop production. Mobile, AL.
4. Pickens, J.M., J.A. Chappell, J.L. Sibley, and W.G. Foshee. Ornamental Horticulture Substation Field Day. 2009 Poster: Integration of recirculating aquaculture and horticulture crop production in Alabama. Mobile, AL.

3. **Pickens, J.M.,** J.A. Chappell, J.L. Sibley, and W.G. Foshee. Ornamental Horticulture Substation Field Day. 2009 Poster: Integration of recirculating aquaculture and horticulture crop production in Alabama. Mobile, AL.
2. **Pickens, J.M.,** J.L. Sibley, C.H. Gilliam, G.B. Fain, and J.W. Olive. 2008. Ornamental Poster: HydRocks® as a perlite substitute. Ornamental Horticulture Substation Field Day. Mobile, AL.
1. **Pickens, J.M.,** J.L. Sibley, C.H. Gilliam, G.B. Fain, and J.W. Olive. 2008 Ornamental Horticulture Substation Field Day. Poster: Use of HydRocks® expanded clay aggregate for weed control. Mobile, AL

Technical Research Reports:

9. Chappell, J.A., T.R. Hanson. T. O’Keefe, J. Guest, J. Jeannings, H. Tran. **J. Pickens,** A. Da Silva, J. Etherton. 2023. Envisioning Controlled Environment, Integrated Aquaculture and Horticulture in the United States: A Project for Illustrating and Describing Economic Feasibility and Analysis of Multiple Elements Surrounding an Industrial Scale Aquaculture Business. USB Project Number 2230-252-0407.
8. **Pickens, J.M.,** W.E. Wells, and C. Blanchard. 2020. Feasibility of Medium-to-Large Scale Greenhouse Vegetable Production in Alabama. Rural Business Enterprise Grant.
7. **Pickens, J.M.** 2020 Corteva Insecticide Trial Results.
6. **Pickens, J.M.** 2020 Israel Chemical Company Fertilizer Trial Results.
5. **Pickens, J.M.** 2019 Israel Chemical Company Fertilizer Trial Results.
4. **Pickens, J.M.** JB. 2017. Nixon . Evaluation of Shade Products
3. **Pickens, J.M.** and J.L. Sibley. 2013. Final Report: Bio120 Wood Pellet Furnace Field Evaluation. Lee Energy Solutions.
2. **Pickens, J.M.** and J.L. Sibley. 2013. Final Report: Evaluation of Heatilator DV3 Wood Pellet Burning Heater at Bonnie Plant Farm. Lee Energy Solutions. 25 pages.
1. **Pickens, J.M.** and J.L. Sibley. 2012. Evaluation of Heatilator Greenhouse System at Bonnie Plant Farm. Lee Energy Solutions. 27 pages.

GRANT ACTIVITY

Competitive Grants, Contracts, and Gifts Received.

64. Evaluation of select fungicides for control of Needle Blight (*Passalora sequoia*) on Leyland Cypress Christmas Trees. (\$11,320). Jeremy Pickens. Christmas Tree Promotion Board. 2024 to 2025.

63. Drone-based automated pests and diseases scouting in specialty crops (\$40,000). Tanzeel Rehman, **Jeremy Pickens**, Andre de Silva. USDA Specialty Crop Block Grant Program. 2023-2025.
62. Statewide Extension IPM Coordination Program. (\$769,408). D. Held, S. Li, G Williams, A. Majumdar, K. Conner, M. Shrader, E. Vinson, and **J. Pickens** USDA NIFA 2024 to 2027.
61. Alabama Department of Agriculture. SCBG. 2023. Expanding learning opportunities for Alabama Christmas tree growers. Jeremy Pickens (on behalf of the Southern Christmas Tree Association). \$15,000.
60. USDA NIFA. Reimagining controlled environment agriculture in a low carbon world. B. Higgins, D. Wells, D. Blersch. S. Adhikari. J. Hossein, N. Potnis, J. Pickens and D. Cline. 2022. \$10,000,000. (\$104.845)
59. USDA NIFA. A smart ground-based vision system for automated nursery inventory management and quality evaluation. T. Rehman, Y., Bao. And J. Pickens. 2023 \$299,961
58. Alabama Department of Agriculture. Use of non-traditional production practices to produce peach trees budded on MP-29 rootstock. 2022. E. Vinson. M. Salazar-Gutierrez. J. Pickens. M. Price and J. Rowan. \$36,930.
57. Improving Irrigation Efficiency Thru Modeling and Spatial Distribution Analysis. 2022. Bartley, P., J. Pickens, and J. Fields. Horticulture Research Institute. \$40,519.
56. Recipient of the Alabama Farmers Federation's Rittenour Award for Excellence in Production Agriculture. 2021 \$10,000 gift
55. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Pandemic Virtual Outreach Project for Growers and Beginning Farmers 2021.. J.M. Pickens, \$40,000.
54. 2021. Contract with Monarch Chemical to evaluate plant safety of new herbicide \$3,000.
53. 2021. Contract with Sherpa Industries to develop potting soil. \$4,000.
52. 2021. Contract with Corteva to evaluate a new biopesticide on whiteflies. \$5,000.
50. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. 2021. Enhancing Profitability of Alabama Christmas Tree Farms. J.M. Pickens, \$40,000.

49. Horticulture Research Institute. 2021. Improved Irrigation Efficiency Through Modeling and Spatial Distribution Analysis. P. Bartley, J. Pickens, J. Fields, Jim Owen, and B. Prorok. \$34,157. This was awarded in 2022.
48. AAES Production Agriculture Research Funding Program. 2020. S. Peresin, D. Wells, **J. Pickens**, G. Richey, D. Blersch. \$49,286.
47. Internal Line Item Mini Grant. 2020. Improving Cooling Efficiency of Protected Culture Structures. **J. M. Pickens**. \$3,350
46. Internal Line Item Mini Grant. 2020. Planting Depth Impact on Orchard Establishment. **J. M. Pickens**. \$5,000
45. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Reducing Temperatures in High Tunnels and Greenhouses 2020. **J.M. Pickens**, \$40,000.
44. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Improving Nursery Production by Reducing Root Zone Temperatures 2020. **J.M. Pickens**, \$40,000.
43. Dow Agro Sponsored Trial. 2019. J.M. Pickens. J.W. Olive and K.O. Owsley. \$6,000.
42. ICL Specialty Fertilizers. 2019. Contract work. Effect of Selected CRF on Container Nursery Crops in SE USA. J. Pickens and J. Olive. \$12,000.
41. Fruit and Vegetable Line Item Mini Grant. Methods to control common dayflower in pecan orchards. B. Wilkins, **J. Pickens**, and S. Li, \$5,000.
40. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Plant Something: Alabama. 2019. R. Woods and **J.M. Pickens**,³ \$25,000.
39. Alabama Department of Ag. And Industries, Specialty Crop Block Grant. 2019. Alabama Greenhouse Vegetable E-Book. **J. Pickens**, D. Wells, J. Kemble, and A. Chambliss. \$24, 994
38. Southern Company Services, Inc. 2019. Feasibility of Controlled Environment Agriculture in Alabama. D. Wells **and J. Pickens**. \$60,617
37. Rural Enterprise Business Grant. USDA Rural Development. 2019. Feasibility of Medium-to-Large Scale Greenhouse Vegetable Production in Rural Alabama. **J. Pickens**¹. D. Wells, J. Kemble, K. Burkett, and A. Chambliss. \$47,562.

36. Southern Extension and Risk Management Education 2019 Projects. 2019. Alabama Specialty Crop Budgets. K. Burkett, W. East, G. Gray, W. Golden, J. Kemble, **J. Pickens**³, A. Majumdar, and A. Chambliss. \$38,192.
35. Alabama Pecan Growers Association. Gift. 2018. Pickens. \$500.
34. APHIS: FY18 Farm Bill Section 10007. Best management practices for control of bacterial gall on loropetalum (*Pseudomonas savastanoi*) 2018. K. Conner, J.W. Olive, and **J.M. Pickens**². \$54,494.
33. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Plant Something: Alabama. 2018. R. Woods and **J.M. Pickens**,³ \$25,000.
32. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Reducing production cost in Christmas tree production through improved fertilizer practices. 2018. **J.M. Pickens**¹, A.V. Gamble, J. Miles, and W. East. \$31,500.
31. Everris. 2018 Comparison of Controlled Release Fertilizer in Southern Nursery Crops. **J.M. Pickens**² and J.O. Olive. \$15,000.
30. J. Frank Schmidt Family Charitable Foundation. 2017. Reduction of evaporative water loss in field production using polymulch. J.L. Sibley and **J.M. Pickens**. \$12,000.
29. BASF. Product Evaluation. 2018. J.M. Pickens \$4,000.
28. APHIS: FY18 Farm Bill Section 10007. Best management practices for control of bacterial gall on loropetalum (*Pseudomonas savastanoi*) (continued). 2017. K. Conner, J.W. Olive, and **J.M. Pickens**³. \$49,207.
27. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. IPM for Chili thrips in nurseries. 2017 **J.M. Pickens**. \$25,000.
26. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Alternative methods for applying liquid preemergent herbicide in container nurseries. 2017., **J.M. Pickens**¹, X.Z. Li, S.C. Marble. \$24,951.
25. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Improving Irrigation Efficiency in Alabama Nurseries. 2017 A.F. Newby, **J.M. Pickens**². \$36, 987.
24. Alabama Fruit Nut and Vegetable Industry Grant. Improving lime and fertilizer practices for container grown citrus. 2017. **J. Pickens**. \$2,200.

23. Alabama Fruit Nut and Vegetable Industry Grant. Investigating early maturing pecan varieties for non-traditional pecan production areas. 2017. **J. Pickens**, D.E. Wells and L. Chapman. \$2,000.
22. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Monitoring cypress weevil and carpenter worm in oak and cypress production to reduce significant losses for nurseries. 2016. D.W. Held. And **J.M. Pickens**. \$25,000.
21. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Monitoring Improving hydroponic lettuce production by heating the nutrient solution. 2016. D.E. Wells. and **J.M. Pickens**. \$21,941.
20. Alabama Fruit Nut and Vegetable Industry Grant. Improving lime and fertilizer practices for container grown citrus. 2016. **J. Pickens**, J. Spiers, J.W. Olive, and D.E. Wells. \$2,550.
19. Alabama Fruit Nut and Vegetable Industry Grant. Effects of Flue Gas. Reducing production cost of greenhouse lettuce through alternative heating methods. 2016. **J. Pickens**, and D.E. Wells. \$2,800.
18. USDA Farm Bill. Best management practices or control of bacterial gall on loropetalum (*Pseudomonas savastanoi*) (continued). 2016. Conner, K., J. Olive, and **J. M. Pickens**. \$54,494.
17. Southern IPM Center, IMP Working Group Grant, Creation and dissemination of tawny crazy ant Extension materials. 2017. L.C. Graham, K. Palmer, J.M. Pickens. \$40,000.
16. USDA Farm Bill. Best management practices or control of bacterial gall on loropetalum (*Pseudomonas savastanoi*). 2015. Conner, K., J. Olive, and **J. M. Pickens**. \$39,000.
15. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Enhancing specialty crop production by improving cooling efficiency in greenhouses and high tunnels. 2015. J. Harwell, **J.M. Pickens**¹, J. Sibley, D. Wells, A. Majumdar, and J. Olive \$24,985.
14. Project support from Alabama Landscape and Nursery Association to work on Tawny Crazy Ant. 2015. L.C. Graham and **J.M. Pickens**¹. \$5,000.
13. Project support from the South Alabama Nursery Association to work on Tawny Crazy Ant. 2015. L.C. Graham and **J. Pickens**². \$500.
12. Project support for Extension programming from Atlas Greenhouse, Techne Structures, Everis, and Grower Supply Center. 2015. **J.M. Pickens**. \$500.

11. USDA NIFA Southern Regional Aquaculture Center publication project. 2015. **J.M. Pickens¹**. \$4,000.
10. USDA-ARS Soil Dynamics Lab. 2014. Use of flue gas desulfurization gypsum (FGDG) to improve crop & horticulture production in the south. 7/1/14 – 3/31/16. J.L. Sibley, **J.M. Pickens³**, and B.W. Brown. \$34,507.
9. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant, Enhancing greenhouse lettuce production through non-traditional heating and cooling systems. 2014. M. Higginbotham, **J.M Pickens¹**, D. Wells, J. Sibley, and J. Spiers. \$20,000.
8. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant, Investigating opportunities for the sale of local specialty crops to public intuitions in Southwest Alabama. 2014. B. Keller, **J. Pickens¹**, D. Wells, J. Miles, J. Sibley, and J. Spiers. \$14,593.
7. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant, Utilization of novel irrigation and fertilization practices to enhance pecan production in Alabama. 2014. D. E. Wells, J. D. Spiers, W. G. Foshee, **J. M. Pickens³**, and J. L. Sibley. \$60,000.
6. Alabama Fruit Nut and Vegetable Industry Grant. Effects of Flue Gas Desulfurization gypsum on greenhouse vegetable production. 2014. J. Sibley, W. Foshee, **J. Pickens²**, and B. Brown \$2,000.
5. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant. Enhancing production systems for specialty crops. 2013. J. D. Spiers, J. L. Sibley, **J. Pickens³**, and G. Fain. \$60,000.
4. Rural Business Enterprise Grant USDA Rural Development. Integration of intensive aquaculture facilities. 2012. J. Chappell, J. Sibley, **J. Pickens¹**, T. Hanson, W, Foshee, J. Danaher, and T. Monday. \$99,950.
3. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant, Demonstration of hydroponic greenhouse specialty crops in Alabama. 2012. G.B. Fain. J.L. Sibley, **J.M. Pickens¹**, J.W. Olive, J.J. Danaher, and W.R. Beauchamp. \$25,000.
2. Alabama Agriculture Experiment System Grant, Development of integrated aquaculture and plant production systems in Alabama. 2011. J.A. Chappell, T.R. Hanson, J.L. Sibley, W.G. Foshee, J.J. Danaher, and **J.M. Pickens¹**. \$25,000.

1. J. Frank Schmidt Family Charitable Foundation. 2007. Effect of foliar-applied paint on growth of deciduous trees. J.L. Sibley, **J.M. Pickens**³, W. Lu, and X. Yang. \$4000

Competitive Grants or Contract Proposals Submitted and Pending

2. Sustainable Nursery Crop Production Practices (Micro-irrigation, Fertilization, and Soil Amendments) to Improve Plant Quality. (\$598,950). A. Witcher, M. Behnaz, J. Pickens. A, LeBude. USDA NIFA. 2025 to 2028.

1. A plastic Audit of Floricultural Container Live Goods. P. Bartley and J. Pickens (\$87,400).

Competitive Grant or Contract Proposals Submitted but NOT Funded. Total \$12,807,392

36. Alabama Department of Agriculture. SCBG. Mitigatin the spread of Botryosphaeria stem blight in Alabama's blueberry farms. S. Ru. E. Coneva, K. Lawrence. And J. Pickens. \$40,000.
35. Alabama Department of Agriculture. SCBG. 2022. Irrigation Management Tools to Reduce Container Nursery Input Cost. P. Bartley and J. Pickens. \$40,000.
34. USDA NRCS. Promoting Gulf Coast Christmas Tree Production Through Climate-smart Practices. Siegert, C., J. Granger, H. Renninger, A. Himes. A. Polinko. K. Pou. And J. Pickens. \$5,131,820
33. Alabama Department of Agriculture. SCBG Reducing Labor Cost with PGR's in Container Nurseries. 2022. J. Pickens. \$40,000
32. Christmas Tree Promotion Board. Research Project. 2021. Evaluation of foliar fertilizer for Southern Christmas tree production. J.M. Pickens. \$20,000.
31. AAES Award for Interdisciplinary Research. 2021. Improved irrigation efficiency through modeling and spatial distribution. P. Bartley, T. Knappenberger, J. Pickens and B. Prorok. \$150,000.
30. USDA. 2020. Systems analysis of commercial-scale aquaponics to enhance sustainability. D. Blersch. D. Wells, D. Cline B. Higgins, T. Hanson, **J. Pickens**, and T. Huang. \$9,988,680

29. USDA. Systems analysis of commercial-scale aquaponics to enhance sustainability. D. Blersch, D. Wells, D. Cline B. Higgins, T. Hanson, **J. Pickens**, and T. Huang. \$9,988,680
28. Alabama Agriculture Experiment Station PAR. Integration of Renewable Energy in Greenhouses. Adhikari, S., J. Davis, O. Fasina, S. Shanmugam, T. Hanson, D. Wells, **J. Pickens**³. \$50,000.
27. USDA Rural Business Development. Development of Row-Covers and Cold Wrap from Mineral Wool By-Products. 2018. Sibley, J.E., D.E. Wells, **J.M. Pickens**³, and E.D. Vinson. \$101,086.
26. IPM and extension for ornamental producers managing Chilli thrips in the southeast. Held, D., A. Jacobson, J. Pickens¹, A. G. Appel. Crop Prot. Pest Mgt. ARDP \$199,988.
25. Horticulture Research Institute. Tawny Crazy Ant Control Efficacy and Repellency of Incorporated Bifenthrin and Fipronil in Container Nursery Production. 2018. **J.M. Pickens**, D. Oi, and L.C. Graham. \$20,143.
24. Horticulture Research Institute. Microirrigation Emitter Efficiency and Cost Analysis for Container Grown Nursery Crops. 2018. A. Witcher and **J. Pickens**. \$22,485.
23. Southern Risk Management Education Grant. Alabama Specialty Crop Budget Education 2017. K, Burkett, J. Kemble, J. Pickens, N, Kelly, E, Vinson, A. Chambliss et al., \$49,868
22. USDA AMS, FY 2017. Specialty Crop Multi-State Program. Development of improved herbicide application techniques for Southeastern nursery production. 2017. **J.M. Pickens**², S.C. Marble, X. Li, and A. Witcher. \$585,906.
21. APHIS: FY18 Farm Bill Section 10007. Development of Alabama citrus nursery stock certification program. 2017. and **J.M. Pickens**¹ K. Conner, J.W. Olive, J. Spiers. \$49,245.
20. USDA-NIFA-Crop Protection and Pest Management Competitive Grants Program. A tale of two thrips: Development of IPM tools for Alabama's ornamental plant industries. D.W. Held, A. Jacobson, and **J.M. Pickens**² \$199,000
19. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant, Alabama Christmas Tree Marketing Campaign. 2017. **J.M. Pickens**¹ and R. Gilbert \$25,000.
18. USDA-NIFA Special Research Grants Program – Aquaculture Research.

- Improving RAS water and nutrient utilization through integration of multi-trophic production processes. 2015. J.A. Chappell, J.M., D.E. Wells, D.M. Blersch, T.R. Hanson, and **J.M. Pickens²**. \$292,374.
17. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant Proposal. Variety trials for heat tolerant romaine lettuce for Alabama greenhouse growers. 2015. **J.M. Pickens¹**, D. Wells, J. Kemble, and J. Sibley. \$11,006.
 16. USDA Rural Business Enterprise Grant. Improving production efficiency of catfish ponds in rural western Alabama utilizing floating In-Pond Raceway Systems. 2012. T. Hanson, J. Chappell, E. Peatman, **J. Pickens¹**, and J. Danaher \$99,938.
 15. Alabama Agriculture Experiment Station. Development of nutrient guidelines for aquaponic vine crop production. 2013. J. Chappell, J. Sibley, T. Hanson, **J. Pickens¹**, Jason Danaher. \$99,998.
 14. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant Proposal. Increasing aquaponics production of specialty crops production in Alabama. 2013. J.L. Sibley and **J.M. Pickens¹**, J.A. Chappell, J. Danaher, and W. Beauchamp. \$24,915.
 13. EPA-G2012-STAR-H1. Nutrient capture and reuse with integrated aquaculture production systems. 2012. J.L. Sibley, J.A. Chappell, **J.M. Pickens³**, and J.J. Danaher. \$99,855.
 12. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant Proposal: Development of an inexpensive farm-built compost tea brewer for organic vegetable production in Alabama. 2012. J.L. Sibley, **J.M. Pickens¹**, W.R. Beauchamp and G.B. Fain. \$25,000.
 11. The Alabama Innovation Fund. Integrated fish and plant production systems in Alabama. 2012. J. Sibley, J. Chappell, T. Hanson, **J. Pickens¹**, and J. Danaher. \$257,540.
 10. Ray C. Anderson Foundation. Demonstration of hydroponic greenhouse Specialty Crops in Alabama. 2012. G.B. Fain, J.L. Sibley, **J.M. Pickens¹**, and J.J. Danaher. \$59,883.
 9. Ray C. Anderson Foundation. Integration of aquaponics into marine aquaculture. 2012. J.L. Sibley, J.A. Chappell, T.R. Hanson, **J.M. Pickens¹**, and J.J. Danaher. \$59,356.
 8. Ray C. Anderson Foundation. Development, evaluation, and demonstration of In Pond Floating Raceway System in Alabama. 2012. J. Chappell, T. Hanson, J. Danaher, and **J. Pickens¹**. \$59,885.

7. Alabama Department of Agriculture and Industries, Specialty Crop Block Grant Proposal. Development and demonstration of integrated vegetable and fish production systems in Alabama. 2011. J.L. Sibley, W.G. Foshee, J.A. Chappell, T.R. Hanson, **J.M. Pickens**¹, J.J. Danaher, W.R. Beauchamp, and D.J. Cline. \$40,637.
6. Alabama Agriculture Experiment Station. Development of integrated plant production systems in Alabama. 2010. J.A. Chappell, T.R. Hanson, J.L. Sibley, W.G. Foshee, and **J.M. Pickens**¹. \$199,864.
5. Alabama Nut Fruit and Vegetable Industries. Aquaponic production of Beit-alpha seedless cucumber production. 2010. **J.M. Pickens**¹, W.G. Foshee, J.L. Sibley and J.A. Chappell. \$5000.
4. Alabama Nut Fruit and Vegetable Industries. Evaluation of hydroponic ever-bearing strawberries in Alabama. 2010. **J.M. Pickens**¹, W.G. Foshee, J.L. Sibley and J.A. Chappell. \$5000.
3. Center for Applied Nursery Research, Dearing, GA. Evaluation of HydRocks as a non-chemical weed barrier in nursery crop production. 2007. J.L. Sibley, **J.M. Pickens**², C.H. Gilliam, G.B. Fain and J.W. Olive. \$2,200.
2. Alabama Agricultural Experiment Station. Supplemental Equipment Grant Program. Proposal I: Digital Camera Units. 2007. J.L. Sibley, R. Akridge, L. Wells, A. Caylor, R. Dawkins, and **J.M. Pickens**³. \$1,340.
1. Center for Applied Nursery Research, Dearing, GA. Evaluation of HydRocks[®] as a non-chemical weed barrier in nursery crop production. 2006. J.L. Sibley, **J.M. Pickens**³, C.H. Gilliam, and G.B. Fain. \$2,200.

C. INSTRUCTION AND SUPERVISION

Teaching appointments: N/A

Graduate Student Advisor and Committee Involvement:

23. Littler, Aerianna, PhD Entomology and Plant Pathology. Managing Chilli Thrips in Container Nurseries. Began 2022
22. Sayed, Hamid, PhD Biosystems. Ornamental Nursery Management and Quality Assessment. (Committee Member). Began 2023
21. Stamm, Emily, PhD Horticulture. Cultivating Sustainability: Biodegradable containers in horticultural production. (Committee Member. Began 2023)

20. Tuany, Volz, MS. Horticulture. Title TBD (Committee member) Began 2022 and finished 2024.
19. Rials, Jenny. PhD. Title. Survey of Ioropetalum gall in nurseries. (Committee Member Began 2022, Finished 2024)
18. Blanchard, Caroline. PhD Horticulture. Title TBD. (Committee Member, Began 2024)
17. Pennington, Mackenzie, MS. Horticulture. Green roof substrate. (Began 2022, Finished 2024.)
16. Tweet, Ivy. MS. Entomology. Exploring IPM Strategies in Southeastern Hemp (*Cannabis sativa* L.)(Committee Member. Began 2021. Finished 2023).
15. McBrayer. Hunter. M.S. Horticulture. Improving root zone temperatures in container nurseries. (Chair. Began 2020. Finished 2021)
14. Jones, Zachary. M.S. Horticulture. Improving production practices in Alabama Christmas Tree Farms. (Chair. Began 2020, Finished 2021)
13. Owsley, Kyle. M.S. Horticulture. Improving hemp transplant quality. (Chair. Began 2020, Estimated Completion 2024)
12. Langemeier, Ryan. Ph.D. Crops Soils and Environ. Sci. Title TBD. (Committee Member. Began 2019, Estimated Completion 2024)
11. Nabors, John. M.S. Horticulture. Reducing Phytotoxicity of Preemergent Herbicides in the seasonal Color Beds through unique applications techniques. (Chair. Began 2018. Switched Programs 2019)
10. Kroft, Claire. M.S. Horticulture. On-site Analysis of Irrigation Management Practices in Alabama Container Nurseries. (Chair. Began 2018. Finished 2020)
9. Carter, Caitlin. M.S. Horticulture. Title TBD (Committee Member. Began 2018. Finished 2019).
8. Blanchard, Caroline. M.S. Horticulture. Aquaponic Effluent pH Influence on Nutrient Use Efficiency and Growth of Greenhouse Cucumber (Committee Member. Began 2018. Finished 2019).
7. Shi, Ran. M.S. Horticulture. Title TBD. (Committee Member. Began 2018. Finished 2019).

6. Murphy, Anna-Marie. Ph.D. Horticulture. Best Management Practices for Reducing Greenhouse Gas Emissions in Ornamental Plant Production (Committee Member. Began 2016. Finished 2020)
5. Bartlett, Dylan. M.S. Entomology. Carpenter Worm (Committee Member. Began 2017 - changed program in 2019)
4. Xia, Ming. M.S. Horticulture. Optimizing temperature for greenhouse lettuce production (Committee Member. Began Fall, 2017. Finished 2019).
3. Holmes, Sydney, M.S. Horticulture Heat tolerance of lettuce varieties grown hydroponically. (Committee Member. Finished August, 2017).
2. Landers, Evan, M.S. Effects of nutrient solution temperature on lettuce grown in a nutrient film technique system. (Committee Member. Finished December, 2017).
1. Thaxton, Blake, R., M.S. Evaluation of manufactured organic soil amendments for consumer use. (Committee Member. Finished August, 2011).

D. PUBLIC SERVICE AND OUTREACH

CONTRIBUTIONS TO EXTENSION (30% starting August 2014-2016, 50% 2016 to present)

Extension Publications (refereed):*Indicating the corresponding author

11. Pickens, J. A. da Silva and E. Ayipio. 2023. Transplant Production for Hydroponic and Greenhouse Systems. ACES ANR 2954.
10. Blanchard, C., J. Pickens*, A. da Silva, and D. Wells. 2023. Greenhouse Tomato Production. ANR 2955
9. Pickens, J*. and D, Wells. 2022. Controlling the Greenhouse Environment for Vegetable Crops. ANR 2925.
8. Blanchard, C., J. Pickens* and D. Wells. 2022. Greenhouse Cucumber Production. ACES. ANR 2926
7. Pickens*, J., D.A. Wells, and C. Blanchard. 2022. Greenhouse Lettuce Production. ACES. ANR 2903.
6. Pickens*, J., C. Marble, and S. Li. 2021. Weed Control in Container Nurseries. ACES ANR 2787.

5. Held, D., and J. Pickens. 2021. Carpenterworm in Nursery Trees. ACES. ANR 2786.
4. Held, D, and J. Pickens. 2020. Bores of Ornamental Plants, ANR 2472.
3. Krofft, C, and J. Pickens*. 2020. Auditing Overhead Irrigation Systems in Container Nurseries: Distribution Uniformity, ANR 2705.
2. Krofft, C, and J. Pickens*. 2020. Auditing Overhead Irrigation Systems in Container Nurseries: Irrigation Rate, ANR 2704.
1. Krofft, C, and J. Pickens*. 2020. Auditing Overhead Irrigation Systems in Container Nurseries: Leaching Fraction, ANR 2706.

Extension publications (non-refereed):

10. **Pickens, J.M.**, K. Burkett, P. Brown. 2019. Economic Impact of a New Greenhouse in Alabama. ACES ANR- 2590. *provided data, reviewed and edited in collaboration with Decision Innovation Solutions
9. **Pickens, J.M.** and L.C. Graham. 2019. Fire Ant Quarantine Compliance for Container Nurseries. ACES, ANR_2557.
8. Graham, L.C., K.R. Palmer and **J.M. Pickens**. 2019. Managing Tawny Crazy Ants Around the Home ACES, ANR-2547.
7. **Pickens, J.M.**, Graham, L.C., and Palmer, K.R. 2019. Managing Tawny Crazy Ants in Plant Nurseries. ACES, ANR-2640.
6. Held, D., and **J.M. Pickens**. 2018. Borer Pests of Woody Ornamental Plants. ACES, ANR-2472.
5. Held, D., and **J.M. Pickens**. 2018. Thrips: Pests of Ornamental Plants. ACES, ANR- 2500
4. **Pickens, J.M.**, D. Wells, and J. Danaher. 2017. Vegetable Transplants in Aquaponic Systems. Southern Regional Aquaculture Center. Pub. No. 5011.
3. **Pickens, J.M.** and J. Danaher. 2016. Controlling the Greenhouse Environmental for Aquaponics. Southern Regional Aquaculture Center. Pub. No. 5008.
2. **Pickens, J.M.**, J. Danaher, and D, Wells, 2016. Greenhouse Crops and Cropping Systems for Commercial Aquaponics. Southern Regional Aquaculture Center, Pub No. 5009.

1. Marble, S.C. and **Pickens, J.M.** 2015. Weed control inside greenhouses and enclosed structures. University of Florida, Institute of Food and Agricultural Sciences Fact Sheet. UF IFAS Extension Fact Sheet ENH1267. (Updated 2018)

Articles, Blog Post and Other creative writing

15. **Pickens, J.** 2019. Complying with the Fire Ant Quarantine for Nurseries: Bifenthrin Incorporation Treatment. Last accessed 6/18/19.
<https://www.aces.edu/blog/topics/nursery-landscape-crops/complying-with-the-fire-ant-quarantine-for-nurseries-bifenthrin-incorporation-treatment/>
14. **Pickens, J.**, and D. Held. 2018. Results on Chilli Thrips Study in Greenhouse. ACES Commercial Hort Blog.
13. Kemble, J. and J. Pickens. 2018. Greenhouse Vegetables and Ethylene Damage. ACES Commercial Hort Blog.
12. **Pickens, J.** 2018. Approaching Boxwood Quarantine. ACES Commercial Hort. Blog.
12. Chapman, D. J. **Pickens, J.** Olive and D. Held. 2017. Pest Alert: European Pepper Moth. ACES Commercial Hort. Blog.
11. **Pickens, J.M.** 2017. Crop Insurance listening session for proposed nursery growers. ACES Commercial Hort Blog.
10. **Pickens, J.M.** 2017. New educational resources for aquaponics. ACES Commercial Hort Blog.
9. **Pickens, J.M.** 2017. Precautions with low water pH and copper fungicides. ACES Commercial Hort. Blog.
8. **Pickens, J.M.**, L.C. Graham and K. R. Palmer 2017. Bifenthrin treated substrate for control of tawny crazy ants (*Nylanderia fulva*) in container nurseries. National Ass. County Agriculture Agents
7. **Pickens, J.M.**, L.C. Graham and K. R. Palmer 2017. Bifenthrin treated substrate for control of tawny crazy ants (*Nylanderia fulva*) in container nurseries. AL. Ass. County Agriculture Agents and Specialist.
6. **Pickens, J.M.** and J.M. Kemble. 2015. Controlling algae in greenhouse lettuce production. ACES Commercial Horticulture Blog.
5. **Pickens, J.M.** and J.L. Sibley. 2015. Greenhouse cooling: An overview of fan and pad systems. ACES Commercial Horticulture Blog.
4. **Pickens, J.M.** 2015 Greenhouse and high tunnel cooling: Shading. ACES

Commercial Horticulture Blog.

3. Danaher, J.J., **J.M. Pickens**, J.L. Sibley, J.A. Chappell, T. Hanson. 2015. Aquaculture effluent partially replaces growing mix for plant production. Global Aquaculture Advocate May/June: 72-74. Circulation, 3,000.
2. **Pickens, J.M.**, and A.M. Murphy. 2014. Weed control in ornamental greenhouses. ACES Commercial Horticulture Blog.
1. **Pickens, J.M.** and J.L. Sibley. 2007. Picking the right palm. American Nurseryman 205 (9):24-29. Circulation 14,000.

Extension Presentations

Invited	Year	Contacts	Event and Title
I	2023	48	Southeast Green, Tailgate Diagnostics, Atlanta GA
I	2023	15	Southeast Green, Controlling Fire Ants. SE Green Atlanta
I	2023	45	UGA Extension Workshop, Tailgate Diagnostics. UGA Extension Workshop
I	2022	150	Revisiting Root Zone Temperatures. Eastern Region International Plant Propagators Society, Long Island New York
I	2018	130	Aquaponic farming for cash. Advance Aquaponics Workshop: Applications for Commercial Production. Aquaculture America. Las Vegas NV.
	2018	18	Alabama Fruit and Vegetable Growers Conference, Plant Nutrition in Greenhouse Systems, Clanton, AL.
	2018	17	Alabama Fruit and Vegetable Growers Conference, Greenhouse equipment and maintenance. Clanton, AL.
	2018	14	Alabama Fruit and Vegetable Growers Conference, Greenhouse and High Tunnell Pest Management
I	2017	80	North Mississippi Fruit and Vegetable Conference, Introduction to greenhouse vegetable production. Tupelo MS.
	2017	25	Alabama Fruit and Vegetable Growers Conference, Understanding Greenhouse Environmental Controls Opelika, AL
	2017	25	Alabama Fruit and Vegetable Growers Conference, Economics of Greenhouse Vegetable Production.
I	2016	50	Alabama Farmer's Federation Commodity Conference: Horticulture Crops. Vegetable Transplant Production.
I	2016	110	Alabama Master Gardeners State Meeting. "Backyard Aquaponics"

	2016	80	Gulf Coast Horticulture Expo. Pest Management Seminars: Pesticide Safety
I	2015	50	Alabama Fruit and Vegetable Growers Conference. Vegetable transplant production. Clanton, AL.
I	2015	15	Alabama Sustainable Agriculture Network, Regional Food and Farm Round Table Forum. Round table discussion group on hydroponics and aquaponic crop production. Mobile, AL. November, 2015. (Estimated participation 15).
I	2015	30	Evaluating non-traditional heating and cooling systems with aquaponic and hydroponic lettuce production. Aquaculture America. New Orleans, LA.
I	2015	30	Introduction to greenhouse vegetable production. Developed a workshop in collaboration with Tennessee Valley Women in Agriculture. Huntsville, AL.
	2015	48	Pickens, J.M. *Nursery Pest Management Workshop. Tawny Crazy Ants: A potential new nursery pest. Mobile, AL.
	2015	15	Mobile County Master Gardner's Training Course. Lectured on hobby greenhouses. Mobile, AL.
I	2015	47	AAMU Small Farms Research Center: Agriculture Risk Management and Business Development Workshop. Spoke on greenhouse vegetable production. Mobile, AL
	2015	15	Mobile County Master Gardner's Training Course. Lectured on greenhouse classrooms. Mobile, AL
	2015	12	Hydroponics 101: An introduction to greenhouse vegetable production. Mobile, AL.
	2015	30	Pickens, J.M. **AQUAPONICS 101: Teaching with Tilapia and Tomatoes. Spoke on hydroponics and aquaponics in the classroom. Gadsden, AL.
	2015	5	Featured speaker at Mobile County Farmers Federation county cook-off. Spoke on GMO crops and issues. Mobile, AL.
I	2015	10	Alabama Fruit and Vegetable Growers Association Conference. "Economic considerations in greenhouse vegetable production." Opelika, AL.
I	2015	30	Alabama Farmer's Federation Commodity Conference: Nursery, Greenhouse Sod. Spoke on economic considerations of greenhouse vegetable production. Montgomery, AL.
I	2015	35	Alabama Farmer's Federation Commodity Conference: Horticulture Crops. "Introduction to greenhouse vegetable production." Montgomery, AL.
I	2015	50	Bay Area Food Bank. Community Garden Workshop Series: Backyard Hydroponics, Aquaponics and Microgreens. Spoke on greenhouse vegetable production and aquaponics. Mobile, AL.
	2015	20	Gulf Coast Fruit and Vegetable Meeting. Spoke on GMO Crops and current issues. Mobile, AL.

	2014	40	Seafood Savvy. Spoke on greenhouse vegetable production, aquaponics and an overview of the Alabama catfish industry. Fairhope, AL.
	2014	45	Hydroponics 101: An introduction to greenhouse vegetable production. Auburn, AL.
	2014	15	Alabama Sustainable Agriculture Network, Regional Food and Farm Round Table Forum. Led round table discussion group on hydroponics and aquaponic crop production. Foley, AL.
	2014	30	Sunbelt AG Expo. Aquaculture and Pond Management Seminars. "Commercial aquaponic production." Moultrie, GA.
	2014	70	Ornamental Horticulture Research Center Field Day. Demonstration of greenhouse vegetable production systems. Mobile, AL.
	2014	20	Alabama Green Industry Greenhouse Workshop. Spoke on greenhouse vegetable production and nutrition and fertilization of floriculture crops.
I	2014	25	Aquaponics 101. University of Florida/Institute of Food and Agriculture Sciences. Jay, Florida.
I	2014	30	Hydroponic vegetable production. Alabama Farmers Federation Commodity Conference, Montgomery, Alabama.
	2014	22	Hydroponic Vegetable Production, Mobile County Fruit and Vegetable Growers Meeting, Mobile, AL.
I	2013	18	Aquaponics 101. University of Florida/Institute of Food and Agriculture Sciences. Cantonment, Florida.
	2013	20	Aquaponics Workshop, Alabama Cooperative Extension System, Gadsden, Alabama.

E. PROFESSIONAL SERVICE

Service

Service to Professional Societies and Memberships

- Alabama Nursery and Landscape Association *Board member (2019-present)
- Southern Christmas Tree Association *Board member (2018-present)
- Southern Region International Plant Propagators Society Executing Committee Director (2023 and 2024)
- Southern Region International Plant Propagators Society *Local Site Chair 2021 meeting
- Auburn University College of Agriculture Alumni Life Member
- Southern Nursery Association
- Gamma Sigma Delta, Agriculture Honorary Society

- Alabama Fruit and Vegetable Association
- American Society for Horticulture Science (ASHS)
- Southern Region (ASHS)
- Southern IPM Center: Tawny Crazy Ant Working Group
- Preparing Future Faculty Fellow, Biggio Center, Auburn University, 2010-2011.
- Alabama Farmers Federation

Peer Reviews:

Water -1 manuscript (2018)

Hort Technology – 7 manuscripts (2016, 2016, 2017 and 2019)

Horticulturae – 3 manuscripts (2017, 2017, and 2018)

Sustainability – 2 manuscripts (2018 and 2019)

Southern Regional Aquaculture Center – 1 Regional Fact sheet (2015)

University of Florida, Institute of Food and Agriculture – 1 Extension Fact Sheet. (2015)

Agriculture – 1 manuscript (2019)

Agronomy – 2 manuscripts (2019)

Grant Reviews:

Provided critical review of Icelandic Research Fund Grant Proposal. Economic optimization of geothermal aquaponics. 2015.

Promotion Reviews:

County Agent Promotional Review - University of Florida IFAS - (2018).

County Agent Promotional Review - University of Florida IFAS (2022).

County Agent Promotional Review - Mississippi State University Extension System (2024)

Services for Professional Associations:

Judge SR-ASHS PhD Oral Paper Competition (2024)

Judge- SR-ASHS Poster Competition (2021)

Judge – SR ASHS Poster Competition (2019)

Judge – SR-ASHS student competition (2017)

Editor – SNA student research competition (2018)

Judge – SNA student research competition (2109)

Departmental Service:

- Auburn University Department of Horticulture Extension Committee, 2015-present.
- Auburn University Department of Horticulture Alumni and Friends Committee, 2014 to present.
- Auburn University Department of Horticulture Website Committee 2015 to present.

Service to Professional Societies:

2019 to Present Board Member - Alabama Nursery and Landscape Association
 2022 to Present Board Member Southern Region International Plant Propagators Soc.
 2017 to Present Board Member – Southern Christmas Tree Association

Judge SR-ASHS PhD Oral Paper Competition (2024)

Judge- SR-ASHS Poster Competition (2021)

Judge – SR ASHS Poster Competition (2019)

Judge – SR-ASHS student competition (2017)

Editor – SNA student research competition (2018)

Judge – SNA student research competition (2109)

Certifications:

- Alabama Research and Demonstration Pesticide License
- Completed Responsible Conduct of Research (RCR) - training required to receive USDA-NIFA funds.
- Certified as a “train the trainer” for EPA Worker Protector Standards.

PROFESSIONAL DEVELOPMENT ACTIVITIES

Research Conference, Grower Meetings and Trade Show Attendance:

- Southern Nursery Trade Show and Research Conference, 2005-2009 and 2014 to 2019.
- Southern Region International Plant Propagators Society Meeting, 2004, 2007, 2008, 2012, and 2018.
- International Recirculating Aquaculture Conference, 2012.
- Aquaculture Engineering Society Issue Forum. 2012.
- Aquaculture America, 2012, 2013 and 2015.
- Alabama Fisheries Association Conference, 2011.
- Southern Region America Society of Horticulture Science, 2013 and 2018
- Southern Sustainable Agriculture Working Group Conference, 2015.
- Alabama Fruit and Vegetable Growers Association Conference, 2010 and 2014 to 2019
- Gulf States Horticultural Expo. 2006, 2007, and 2015 to 2020.
- FarWest Nursery Trade Show and Educational Seminars, Portland, OR. 2006 and 2007.
- Alabama Water Resource Conference. Orange Beach, AL. 2014.
- Alabama Association for County Agriculture Agents and Specialist. 2017.
- National Association for County Agriculture Agents. 2017.
- National Conference on Urban Entomology and Invasive Ant Conference 2016
- Imported Fire and Invasive Ant Conference. 2017.
- Southern Entomological Society of America 2019.

- Southern Region American Society of Horticulture Science. 2017,2018, 2019

Completed Professional Development Courses:

- The Search Committee Process: Hiring Selections Made Easier. Auburn University, Human Resource Department, 2011.
- Train the Trainer. Auburn University Human Resource Department, 2011.
- Focus. Auburn University Human Resource Department, 2010.
- Procurement and Payment Services. Auburn University Human Resource Department, 2010.

Other Professional Development:

- Visited and toured over 110 nursery, greenhouse and garden centers through conference tours, class field trips and extension related activities, 2001-Present.
- Attended Ornamental Horticulture Research Station Field Day, Auburn University, Mobile, AL. 2007-2009, and 2014.
- Attended Ornamental Horticulture Field Day. Mississippi State Coastal Research and Extension Center, Poplarville, MS, 2015.
- Attended Center for Applied Nursery Research Field Day. Dearing, GA. 2006.
- Toured University of Florida, West Florida Research and Education Center Jay, Florida, 2015.
- Toured University of Florida. Mid-Florida Research and Education Center. Apopka FL, 2015.
- Toured the following public gardens:
 - US National Arboretum, Washington, D.C.
 - Dothan Botanical Gardens, Dothan, AL
 - Birmingham Botanical Gardens, Birmingham AL.
 - Aldridge Botanical Gardens, Hoover, AL.
 - Mobile Botanical Gardens, Mobile, AL.
 - Bellingrath Gardens and Home, Theodore, AL.
 - Lewis Ginter Gardens, Henrico VA.
 - Portland Japanese Garden, Portland OR.
 - Washington Park International Rose Test Garden, Portland, OR.
 - Atlanta Botanical Garden, Atlanta, GA.
 - Callaway Gardens, Pine Mountain, GA .
 - Hills & Dales Estate, LaGrange, GA.
 - Boone Hall Plantation and Gardens, Mount Pleasant, SC.
 - Middleton Place, Charleston, SC.
 - Bodnant Garden, Conwy, Wales.
 - Kew Royal Botanic Gardens, London England.
 - The ABQ Biopark Botanic Garden, Albuquerque, NM.
 - Temple Square, Salt Lake City, UT.
 - Jungle Gardens, Baton Rouge, LA.

F. INTERNATIONAL EXPERIENCE

8. Punta Cana, Dominican Republic – personal trip 2024
7. Antigua, Guatemala – personal trip 2022
6. Cancun, Mexico – personal trip 2020
5. Netherlands 2019. Greenhouse Lighting Workshop at Wageningen University
4. Mantanzas, Cuba to assist with a three day workshop on nursery production and landscape management. 2017
3. Orphanage Emmanuel, Guaimaca, Honduras, to assist in building two commercial greenhouses for aquaculture and hydroponic crop production. 2012.
2. Negril, Jamaica - personal trip. 2012
1. Scotland, England and Wales to tour public gardens. 2006