

Paul C. Bartley III

Department of Horticulture
 College of Agriculture
 Auburn University
 Auburn University, AL 36849
 (334) 844-5472
 paul.bartley@auburn.edu

EDUCATION

- 2019** **Doctor of Philosophy**, North Carolina State University
 Major: Horticultural Science
 Minor: Soil Science
 Advisor: Brian E. Jackson
 Dissertation Title: Multidimensional characterization of horticultural substrates.
- 2015** **Master of Science** (Horticulture), Auburn University
- 2013** **Bachelor of Science** (Horticulture), Auburn University

POSITIONS

- 2019-Present Assistant Professor, Auburn University, Auburn, AL (60% Research, 40% Teaching)
- 2016-2019 Graduate Teaching Assistant, North Carolina State University, Raleigh, NC
- 2014-2015 Graduate Research Assistant, Auburn University, Auburn, AL

RESEARCH AND EXTENSION GRANTS AND SCHOLARLY AWARDS RECEIVED

Total direct support at AU to date: \$243,590

Total support submitted: \$1,252,014

Total support submitted and not funded: \$1,008,424

GRANTS RECEIVED

- 2022 **P.C. Bartley III**, J. Pickens, J. Fields, J. Owen, B. Prorok. Improved irrigation efficiency through modeling and spatial distribution analysis.
- Agency/Organization of Funding: Horticulture Research Institute
 - Role: PI
 - Responsibility: 80%
 - Amount Received: \$34,157

S. Ru, Y. Bao, J. Spiers, E. Coneva, P. Munoz, H. Ashrafi, **P.C. Bartley III**. Enabling high-throughput yield prediction for efficient blueberry production.

- Agency/Organization of Funding: Southern Region Small Fruit Consortium
- Role: Co-PI
- Responsibility: 5%
- Amount Received: \$5,000

2021 S. Ru, Y. Bao, J. Spiers, E. Coneva, P. Munoz, H. Ashrafi, **P.C. Bartley III**. Enabling high-throughput yield prediction for efficient blueberry production.

- Agency/Organization of Funding: California Blueberry Commission
- Role: Co-PI
- Responsibility: 5%
- Amount Received: \$31,008

P.C. Bartley III. Gypsum use in horticulture research.

- Agency/Organization of Funding: USDA-ARS
- Role: PI
- Responsibility: 100%
- Amount Received: \$100,000

2020 K. Kesheimer, **P.C. Bartley III**, et al. Walk-in environmental growth chamber

- Agency/Organization of Funding: AAES ARES
- Role: Co-PI
- Responsibility: 20%
- Amount Received: \$73,425

GRANTS SUBMITTED AND NOT FUNDED

2021 S. Peresin, **P.C. Bartley III**, R. Gonzalez, L.A. Lucia. One Pot bio-based films platform: from food packaging to agricultural materials.

- Agency/Organization of Funding: AL Research and Development Enhancement Fund
- Role: Co-PI
- Responsibility: 30%
- Amount Requested: \$262,689

S. Peresin and **P.C. Bartley III**. Enhanced bio-based fertilizer carriers.

- Agency/Organization of Funding: AL Research and Development Enhancement Fund
- Role: PI
- Responsibility: 30%
- Amount Requested: \$307,944

P.C. Bartley III, J. Pickens, T. Knappenberger, B. Prorok. Improved irrigation efficiency through modeling and spatial distribution analysis.

- Agency/Organization of Funding: AAES SEED
- Role: PI
- Responsibility: 60%
- Amount Requested: \$150,000

Y. Olshansky, T. Knappenberger, **P.C. Bartley III**, J. Shaw. Effect of organic amendments on dynamic anaerobic microsites in upland soils.

- Agency/Organization of Funding: USDA-SEED
- Role: Co-PI
- Responsibility: 20%
- Amount Requested: \$262,791

2020 **P.C. Bartley III**. Development of X-ray microtomography for the analysis of root-media systems in container production.

- Agency/Organization of Funding: AAES SEED
- Role: PI
- Responsibility: 100%
- Amount Requested: \$25,000

REFERRED JOURNAL PUBLICATIONS

- 2022 **Bartley III P.C.**, W.C. Fonteno, B.E. Jackson. Particle shape and size analysis of soilless container substrates using a computerized particle analyzer. *HortSci*. *In review*
- Bartley III P.C.**, W.C. Fonteno, B.E. Jackson. A review and analysis of horticultural substrate characterization by sieve analysis. *HortSci*. *In review*
- Bartley III P.C.**, A. Amoozegar, W.C. Fonteno, B.E. Jackson. Particle density of horticultural substrates. *HortSci*. 57(3):379-383. <https://doi.org/10.21273/HORTSCI16319-21>
- 2019 Bertucci, M.B., **P.C. Bartley III**, K.M. Jennings, D.W. Monks, and B.E. Jackson. Quantification of palmer amaranth seed number using a computerized particle analyzer. *Agriculture and Environmental Letters*. <https://doi.org/10.1002/ael2.20003>
- Bartley III, P.C.**, B.E. Jackson, W.C. Fonteno. Effect of particle length to width ratio on sieving accuracy and precision. *Powder Technology* 355:349-354. Cited by: 1
<https://doi.org/10.1016/j.powtec.2019.07.016>
- Miller, G.L., G.D. Pinnix, **P.C. Bartley III**, R.K. McCauley, and B.E. Jackson. Evaluation of turfgrass clippings from mulching versus side discharge mower operation. *Crop, Forage, and Turfgrass Management* 5:190050. <https://doi.org/10.2134/cftm2019.06.0050>
- 2017 **Bartley III, P.C.**, G.R. Wehtje, A.-M. Murphy, W.G. Foshee, C.H. Gilliam. Mulch type and depth influences weed control of three major weed species in nursery container production. *HortTechnology* 27:465-471. Cited by: 6
- 2016 **Bartley III, P.C.**, G.R. Wehtje, A.-M. Murphy, W.G. Foshee, C.H. Gilliam. Effects of woody mulches and dimethenamid-p on container grown *Ligustrum japonicum* and *Viburnum macrocephalum*. *Journal of Environmental Horticulture* 34(2):63-66. Cited by: 1

PEER-REVIEWED JOURNAL PUBLICATIONS – IN PREPARATION

- Bartley III, P.C.**, D. Maldonado, S. Peresin, D. Watts, A. Torbert. Flue gas desulfurized gypsum improves hydration efficiency of container peat substrates. Intended Journal: Scientia Horticulturae
- Bartley III, P.C.**, Y. Bao. Root A.I.: Developing root tracking tools for plant root segmentation in image analysis. Intended Journal: Scientific Reports
- Bartley III, P.C.**, L. Erbrick, D. Watts, A. Torbert. Flue gas desulfurized gypsum affects phosphorus leaching in container pine bark substrates. Intended Journal: JEH
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Three-dimensional characterization of horticultural substrates and plant growth using X-ray computed tomography. Intended Journal: Scientific Reports.
- Bartley III, P.C.**, J. Singh, A. Sans-Saez. X-ray attenuation affected by soil texture and depth. Intended Journal: Agronomy.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Granulometric comparison of sieve analysis and computerized particle analyzer. Intended Journal: Communications in Soil Science and Plant Analysis.

CONFERENCE PROCEEDINGS PUBLICATIONS

- 2021 Durand, S., B.E. Jackson, **P.C. Bartley**, W.C. Fonteno, J.C. Michel. New tools for particle shape analysis of substrate components: initial results and future prospects. *Acta Hortic. In press*
- 2020 **Bartley III, P.C.**, A. Amoozegar, B.E. Jackson, and W.C. Fonteno. Particle density of substrate components measured by gas pycnometer. *Acta Hortic.* 1273:17-22.
- 2019 **Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Computerized particle analyzer: the next generation of particle analysis. *Acta Hortic.* 1266:97-102.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Characterization of substrates with X-ray microtomography. *Acta Hortic.* 1266:1-6.
- 2015 **Bartley III, P.C.**, M.W. Burrows, G. Wehtje, and C.H. Gilliam. Mulch type affects degradation and weed control potential in container production. *International Plant Propagators' Combined Proceedings.* Vol 65:425-429.
- Bartley III, P.C.**, G.R. Wehtje, A.-M. Murphy, and C.H. Gilliam. Mulch type and depth influences weed control on three major weed species in nursery container production. *SNA Research Conference* Vol. 60:274-280.
- 2014 **Bartley III, P.C.**, G.R. Wehtje, A.-M. Murphy, and C.H. Gilliam. Mulch type and depth influences weed control on three major weed species in nursery container production. *International Plant Propagators' Combined Proceedings,* Vol. 64:415-420.
- Bartley III, P.C.**, G.R. Wehtje, C.H. Gilliam, W.G. Foshee, and A.-M. Murphy. Efficacy of preemergence-applied, granular flumioxazin (Broadstar) as influenced by moisture and the distance separating prills and weed seed. *SNA Research Conference* Vol. 59:278-281.

RESEARCH ABSTRACTS

- 2022 Erbrick*, L., **P.C. Bartley**, D. Watts, A. Torbert. Flue gas desulfurized gypsum affects phosphorus leaching in container pine bark substrates. *HortSci. In press*
- 2018 **Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Where's my water? Spatial distribution of water within containers revealed by X-ray tomography. *HortSci* (In press).
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Utilizing image analysis to obtain particle size distributions of substrate components. *HortSci* (In press).

- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Comparing saturation and particle density methods to derive substrate porosity. HortSci (In press).
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Total porosity of horticultural substrates derived from particle density. HortSci (In press).
- Bartley III, P.C.**, A. Amoozegar, B.E. Jackson, and W.C. Fonteno. Particle density of substrate components measured by gas pycnometer. Acta Hort (In press).
- Bertucci, M., **P. Bartley**, K. Jennings, D. Monks, B. Jackson. Automated seed counts and verification of seed production estimates of palmer amaranth using a computerized particle analyzer. WeedScience (In press).
- 2016 **Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. CPA Horoscope: The Future of Particle Analysis. HortScience 51(9):S313.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. The Nuts and Bolts of Computerized Particle Analysis. HortScience 51(9):S313.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. CPA versus Rotap: Granulometric Analytical Comparison. HortScience 51(9):S314.
- 2014 **Bartley III, P.C.**, G.B. Fain, R. Kessler, J. Olive, and A.L. Witcher. Substrate components and drench applied paclobutrazol effects growth and flowering of poinsettia. HortSci 49(9):S18.

ADDITIONAL PUBLICATIONS

- 2019 **Bartley III, Paul Carver**. Multidimensional characterization of horticultural substrates. PhD dissertation. North Carolina State University, Raleigh, NC.
- 2015 **Bartley III, Paul Carver**. Alternative mulch species, with and without dimethnamid-p, for weed control in nursery container production. M.S. Thesis. Auburn University, Auburn, AL.

SCIENTIFIC ORAL PRESENTATIONS – INTERNATIONAL

- 2021 Durand, S., B.E. Jackson, **P.C. Bartley**, W.C. Fonteno, J.C. Michel. New tools for particle shape analysis of substrate components: initial results and future prospects. ISHS, Ghent, Belgium.
- 2018 **Bartley III, P.C.**, A. Amoozegar, B.E. Jackson, and W.C. Fonteno. Particle density of substrate components measured by gas pycnometer. International Horticultural Congress. Istanbul, Turkey.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Applications of X-ray tomography to horticultural science. University of Nottingham, Nottingham, UK. Hosted by the Hounsfield Facility.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Visualizing plant root architecture in organic-based media. University College Dublin, Dublin, Ireland. Invited speaker of the School of Agriculture and Food Science.

SCIENTIFIC ORAL PRESENTATIONS – DOMESTIC

- 2022 Erbrick*, L., **P.C. Bartley**, D. Watts, A. Torbert. Flue gas desulfurized gypsum affects phosphorus leaching in container pine bark substrates. Southern Region American Society of Horticultural Science. New Orleans, LA. Feb 12.
- 2018 **Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. X-ray vision for the future of plant science. American Society of Horticultural Science. Washington, D.C. August 2, 2018.
<https://ashs.confex.com/ashs/2018/videogateway.cgi/id/5617?recordingid=5617>

- 2017 **Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Computerized particle analyzer: the next generation of particle analysis. International Symposium on Growing Media, Soilless Culture, and Compost Utilization in Horticulture. Portland, OR. August 23, 2017.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. Characterization of substrates with X-ray microtomography. International Symposium on Growing Media, Soilless Culture, and Compost Utilization in Horticulture. Portland, OR. August 21, 2017 – **First Place Award**
- 2015 **Bartley III, P.C.**, C.H.Gilliam, G.R. Wehtje, and W.G. Foshee. Mulch type and depth influences weed control on three major weed species in nursery container production. Southern Nursery Association Research Conference. Atlanta, GA. July 22, 2015.
- 2014 **Bartley III, P.C.**, C.H.Gilliam, G.R. Wehtje, and W.G. Foshee. Mulch type and depth influences weed control on three major weed species in nursery container production. International Plant Propagators' Society, Southern Region. Hickory, NC. – **First Place Award**
- Bartley III, P.C.**, C.H.Gilliam, and G.R. Wehtje. Efficacy of preemergence-applied, granular flumioxazin (Broadstar) as influenced by moisture and the distance separating prills and weed seed. Southern Nursery Association Research Conference. Atlanta, GA. – **Third Place Award**
- Bartley III, P.C.**, G.B. Fain, R. Kessler, J. Olive, and A.L. Witcher. Substrate components and drench applied paclobutrazol effects growth and flowering of poinsettia. American Society of Horticultural Science, Southern Region. Dallas, TX. – **Second Place Award**

SCIENTIFIC POSTER PRESENTATIONS

- 2022 Erbrick*, L., **P.C. Bartley**, D. Watts, A. Torbert. Flue gas desulfurized gypsum affects phosphorus leaching in container pine bark substrates. Southern Region American Society of Horticultural Science. New Orleans, LA. Feb 12.
- 2018 **Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. 2018. Where's my water? Spatial distribution of water within containers revealed by X-ray tomography. American Society of Horticultural Science. Washington, D.C.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. 2018. Utilizing image analysis to obtain particle size distributions of substrate components. American Society of Horticultural Science. Washington, D.C.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. 2018. Comparing saturation and particle density methods to derive substrate porosity. American Society of Horticultural Science. Washington, D.C.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. 2018. Total porosity of horticultural substrates derived from particle density. American Society of Horticultural Science. Washington, D.C.
- 2016 **Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. 2016. CPA Horoscope: The Future of Particle Analysis. American Society of Horticultural Science Meeting. Atlanta, GA.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. 2016. The Nuts and Bolts of Computerized Particle Analysis. American Society of Horticultural Science Meeting. Atlanta, GA.
- Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. 2016. CPA versus Rotap: Granulometric Analytical Comparison. American Society of Horticultural Science Meeting. Atlanta, GA.

- 2015 **Bartley III, P.C.**, C.H.Gilliam, G.R. Wehtje, and W.G. Foshee. 2015. Mulch type affects degradation and weed control potential in container production. International Plant Propagators' Society, Southern Region. Tampa, FL.
- 2014 **Bartley III, P.C.**, C.H.Gilliam, G.R. Wehtje, and W.G. Foshee. 2014. Mulch type and depth influences weed control on three major weed species in nursery container production. International Plant Propagators' Society, Southern Region. Hickory, NC.

SCIENTIFIC MEETINGS ATTENDED – INTERNATIONAL

- 2018 XXXth International Horticultural Congress. Istanbul, Turkey. Aug 12, 2018.

SCIENTIFIC MEETINGS ATTENDED – DOMESTIC

- 2021 International Plant Propagators Society Southern Region Meeting, Mobile, AL Oct 23-27
American Society of Horticultural Science Annual Meeting. Denver, CO Aug 5-11
- 2018 American Society of Horticultural Science Annual Meeting. Washington, DC. July 31 – Aug 3.
- 2017 International Symposium on Growing media, Soilless Culture, and Compost Utilization in Horticulture. Portland, OR. Aug 19-23
- 2016 International Plant Propagators Society Southern Region Meeting. Virginia Beach, VA. Oct 22-26
American Society of Horticultural Science Annual Meeting. Atlanta, GA. Aug 8-11
- 2015 International Plant Propagators Society Southern Region Meeting. Tampa, FL. Oct 24-28
Southern Nursery Association Annual Meeting. Atlanta, GA. July 21-23
- 2014 International Plant Propagators Society Southern Region Meeting. Hickory, NC. Oct 18-23
Southern Nursery Association Annual Meeting. Atlanta, GA. July 22-24
American Society of Horticultural Science Southern Region Meeting. Dallas, TX. Feb 3-5

EXTENSION EXPERIENCE

- 2014 Intern, Alabama Cooperative Extension Service. Commercial Vegetable and Fruit Production and Plant Pathology. Jefferson Co., AL.

INDUSTRY EXTENSION PUBLICATIONS

- 2018 **Bartley III, P.C.**, B.E. Jackson, and W.C. Fonteno. If Superman were a substrate scientist. *GrowerTalks* 81(11):64-65.
Bartley III, P.C., B.E. Jackson, and W.C. Fonteno. A new look at substrates: inside and out. *GrowerTalks* 81(10):50-51.
- 2017 Jackson, B.E., and **P.C. Bartley III**. Wood substrates: the plant's perspective. *GrowerTalks* 80(10):54-57.
- 2016 **Bartley III, P.C.**, G.R. Wehtje, and C.H. Gilliam. 2016. A case for mulch. *Nursery Management Magazine*. 10:26-35.

INDUSTRY EXTENSION PRESENTATIONS

- 2018 **Bartley III, P.C.** Peat characterization by X-ray tomography. Newbridge, Republic of Ireland. May 28 – Invited Speaker. 11 Attendees.
Bartley III, P.C., and J.C. Neal. 2018. Greenhouse weed control. Raleigh, NC. June 26 – Invited Speaker. 18 Attendees.
- 2016 **Bartley III, P.C.** Maximizing weed control efficacy in container production. Academy of Crop Production Meeting. Athens, GA. June 12-15, – Invited Speaker. 34 Attendees.

INDUSTRY HOSTED OR TOURED

Please email if you would like to request the list of industry hosted or toured.

TEACHING EXPERIENCE

- 2019-Present **Primary Instructor**, Auburn University, Auburn, AL
 HORT 3200 – Woody Landscape Plant Identification I; Fall
 HORT 3210 – Woody Landscape Plant Identification II; Spring
 HORT 3220 – Arboriculture; Fall
- 2017 **Primary Instructor**, NC State University, Raleigh, NC
 HS 111 – Ornamental Plant Identification; Fall
- 2017 **Teaching Assistant**, NC State University, Raleigh, NC
 HS 303 – Ornamental Plant Identification; Spring
- 2016 **Teaching Assistant**, NC State University, Raleigh, NC
 HS 304 – Ornamental Plant Identification; Fall

DOMESTIC PROFESSIONAL MEETINGS ATTENDED

- 2019 Gulf States Horticultural Expo. Mobile, AL. Jan 15-17
- 2018 AmericanHort Cultivate '18. Columbus, OH. July 14 – 17
 Landscape Color and Professional Field Day. Raleigh, NC. June 26
 NCERA-101 Committee on Controlled Environment Technology and Use Annual Meeting. Raleigh, NC. April 15 – 16
- 2017 AmericanHort Cultivate '17. Columbus, OH. July 15 – 17, 2017.
- 2015 Alabama Landscape Workshop. Auburn AL. Sep 23 – 24
- 2014 Alabama Landscape Workshop. Auburn AL. Sep 25 – 26

PROFESSIONAL ORGANIZATION MEMBERSHIP

National Association for Landscape Professionals
 Alabama Nursery and Landscape Association
 American Society for Horticultural Science
 International Society for Horticultural Science
 International Plant Propagators Society

Pi Alpha Xi – National Honor Society for Horticulture (2017-2019)

SCHOLARSHIPS, AWARDS, AND HONORS

- 2021 3rd Place – J.B. Edmond Undergraduate Research Competition – Landon Erbrick*
- 2019 Auburn University New Faculty Scholars Fellowship
1st Place – NC State Graduate Student Poster Competition
- 2017 James K. Rathmell, Jr. Memorial Scholarship for Horticultural Work/Study Abroad – American Floral Endowment
1st Place – Graduate Student Presentation – ISHS Symposium on Soilless
Pi Alpha Xi National Honor Society for Horticulture membership
- 2014 1st Place – Graduate Student Presentation – IPPS Southern Region
3rd Place – Graduate Student Presentation – S. Nurseryman’s Assoc.
2nd Place – J.B. Edmond Undergraduate Research Competition – ASHS Southern Region
- 2013 Auburn University College of Ag. Undergraduate Fellowship

COMMITTEES SERVED

- 2021-Present College of Agriculture Scholarship Committee
- 2021-Present Department of Horticulture Scholarship Chair
- 2020-Present Campus Tree Advisory Committee

INTERNATIONAL TRAVEL

- 2018 Turkey – August 10-18
 - Attended and presented at the International Horticultural Congress.
 Ireland – May 27-31
 - Invited Speaker of Owen Doyle, Head of Horticulture at the University College Dublin.
 England – May 21-26
 - Hosted by Sacha Mooney and the Hounsfield Facility.
 France – May 10-20
 - Hosted by Jean-Charles Michel, Associate Professor in Soil and Growing Media Science, Agrocampus Ouest in Angers, France.
- 2013 Italy – May 4-14
 - One of five selected undergraduate students to receive the Henry P. Orr Scholarship to experience horticulturally and historically significant sites throughout central Italy.