

NATALIE R. BUMGARNER CURRICULUM VITAE

Education

- Ph.D. The Ohio State University - 2012** Horticulture and Crop Science Department, Crop physiology specialization. Dissertation title: "Biomass and composition of leafy crops as affected by abiotic conditions in fall to spring production"
- M.S. West Virginia University - 2007** Plant and Soil Science Department, Horticulture specialization. Thesis title: "Methods of season extension for market gardeners"
- B.S. West Virginia University- 2005** Plant and Soil Science Department, Horticulture production focus, Summa cum laude

Professional Positions

- 2025-Present** **Professor, Residential/Consumer Horticulture Extension Specialist**
University of Tennessee Institute of Agriculture, Knoxville, TN
- 2020-2025** **Associate Professor, Residential/Consumer Horticulture Extension Specialist**
University of Tennessee Institute of Agriculture, Knoxville, TN
- 2014-2020** **Assistant Professor, Residential/Consumer Horticulture Extension Specialist**
University of Tennessee Institute of Agriculture, Knoxville, TN
- 2012-2014** **Horticulturist and Researcher**
CropKing Incorporated, Lodi, OH
- 2012** **Post-doctoral Researcher**
The Ohio State University- Ohio Agriculture Research Development Center, Wooster, OH
- 2008-2012** **Graduate Research Assistant and Fellow**
The Ohio State University- Ohio Agriculture Research Development Center, Wooster, OH
- 2005-2007** **Graduate Research Assistant**
West Virginia University, Morgantown, WV

Professor/Associate Professor/Assistant Professor and Residential and Consumer Horticulture Extension Specialist: Needs assessment, planning, delivery, and evaluation of a statewide residential and consumer horticulture program focusing on noncommercial fruit and vegetable production as well as ornamental landscape stewardship. Includes leadership/facilitation of three workgroups (Master Gardener, Home Fruit and Vegetable, Sustainable Landscapes) that consist of agent and specialist collaborators who plan and lead statewide efforts. Includes development and delivery of applied research, Extension publications, digital trainings, as well as development, management, and support of all web and social media platforms. In addition to statewide responsibility in applied research and outreach in the area, also responsibility for supporting county agent questions and inquiries across the consumer horticulture area.

Statewide Coordinator of the Tennessee Extension Master Gardener Program: Needs assessment, planning, delivery, and evaluation of the statewide Extension Master Gardener volunteer program. Includes responsibility for the development of all print and digital teaching and training resources (includes distance training program, curriculum, and training website). Responsible for planning, organization, and execution of regional and statewide conferences and leadership trainings as well as financial management of the fee-based training program. Development and support of the state Extension Master Gardener website as well as separate volunteer reporting database are also included as is the training and support of the county agents who lead the approximately 40 local EMG groups with over 3,000 EMG volunteers.

Horticulturist and Researcher: Operated as technical support as well as greenhouse manager for family-run greenhouse vegetable and hydroponic growing supplier sales and support business. Involved in developing trainings and delivering workshops to new and prospective greenhouse growers, conducting greenhouse trials and evaluations, writing, and presenting technical material to grower audiences on soilless production, and providing on-call technical support to greenhouse vegetable growers across the United States as well as international customers.

Post-Doctoral Researcher: Vegetable grafting research as well as cropping systems research related to international production of food crops to address food insecurity in developing countries. Also included dissemination of results through publications and extension outreach to scientific, industry, and grower communities. This post-doctoral project was completed part-time during the year 2012 while also employed at CropKing Inc.

Graduate Research Assistant and Fellow (The Ohio State University): Vegetable production system research including design, setup, data collection and analysis of vegetable crop studies conducted in outdoor, low tunnel and high tunnel as well as greenhouse systems. Laboratory assessments of plant composition followed crop production. Also included dissemination of results through publications and extension outreach to scientific and grower communities.

Graduate Research Assistant (West Virginia University): Organic vegetable production research in the area of season extension for small-scale organic vegetable producers. Also included the planning, planting, harvest and management of the WVU organic research farm market garden as well as supervising undergraduate employees and conducting sales through bi-weekly in-season farmers markets.

Horticulture Industry Experiences/Employment:

Vic and Margaret Ball internship as a production ornamental greenhouse grower at Oglevee Ltd.

Urban gardening internship with City of Morgantown beautification commission

Floriculture greenhouse employee working in production and sales for 7 spring seasons

EXTENSION AND INDUSTRY OUTREACH AND TEACHING

Outreach and Teaching Summary

- Taught 541 field day sessions, county workshops, or Extension volunteer training sessions with 28,712 participants
- Invited speaker for 52 Industry conference sessions, Out of State or National Extension sessions/workshops with 4,639 participants
- Planned (61) or participated in (27) a total of 88 Extension agent in-service trainings, programs or retreats with 3,101 participants
- Planned or led 53 conferences, workshops, or statewide digital trainings for Extension volunteers or classroom teachers with 16,360 participants
- Planned and taught in 30 beginner greenhouse industry grower workshops with approximately 550 participants
- Taught 36 as a guest lecturer for undergraduate classes with over 1,829 students
- Instructor or co-instructor for 4 semesters of graduate courses, 1 semester and 1 summer of undergraduate courses with 50 students
- Over 147,500 in-person, telephone, or email contacts with stakeholders (since Oct. 2014)
- Over 14,728,000 newsletter, print, television, or web contacts with stakeholders (since Oct. 2014)
- \$753,527 in Extension fee-based programming revenue and gifts (2015- 2024)

Horticulture Extension Outreach and Teaching Overview (while at UT)

- Vegetable crop selection and management- 237 sessions; 10,779 participants
- Extension Master Gardener volunteer development, organization management- 119 sessions; 8,351 participants
- Botany, plant physiology, plant pathology, entomology, and soil science- 49 sessions; 2,476 participants
- Sustainable landscapes, ornamental and native plant materials, cut flowers- 40 sessions; 2,996 participants
- Consumer horticulture, health, and well-being benefits of plants- 27 sessions; 1,087 participants
- Fruit selection and production- 40 sessions; 1,881 participants
- Greenhouse, high tunnel, season extension, cut flower, and hydroponics- 27 sessions; 992 participants

Industry/Out of State/National Outreach and Teaching Overview

- Trials, budgets and beyond: The TN Cut Flower Team- UGA Center for Urban Ag Webinar
- Cut flower research update- PickTn Conference
- The who and why of horticulture consumers- Ohio Master Gardener Volunteer Conference
- Connecting research and education with the National Initiative for Consumer Horticulture- GardenComm Int.
- UT Fruit Trials- Southeastern Fruit and Vegetable Conference
- UT blackberry and blueberry trials: What have we learned so far? – PickTN Conference
- Cut flower research and Extension outreach in Tennessee- PickTn Conference
- Vegetable trial Round-up: From yield to consumer evaluations- PickTN Conference
- Reaching new horticulture consumers- PickTN Conference
- Teaching resources for the plant-people connection- Extension Master Gardener Coordinator National Webinar
- NICH Collaboration and partnerships- EMG National Coordinator's Conference
- Extension Career Perspective- American Society for Horticulture Science
- Tasty, timely- microgreens for the home grower- Ohio EMGV Zoom series

- Our EMGNC strategic plan and next steps- Extension Master Gardener Coordinator National Webinar
- Taking the trial to the people- Ohio Extension Master Gardener Volunteer State Conference
- The plant/people connections in our programs- Ohio Extension Master Gardener Volunteer State Conference
- Vegetable trialing in Tennessee- Kentucky Master Gardener State Conference
- Consumer horticulture brown bag lunch- National Association of Agriculture and Specialists Conference
- True love and home-grown tomatoes- Arkansas Master Gardener Workshop
- When the great outdoors just isn't enough- home greenhouses- International Master Gardener Conference
- Engaging secondary students in agricultural science career paths through integration of controlled environment food production education- NIFA Project Directors Meeting
- Surveying Master Gardeners- Arkansas Master Gardener Leadership Conference
- Microgreens at home- Abingdon, VA Garden Faire
- Know your varieties- Mississippi Greenhouse Tomato Short Course
- What you will learn in year 1- Mississippi Greenhouse Tomato Short Course
- Tomato cultivars for hydroponic producers- Mid Atlantic Fruit and Vegetable Convention
- Microbial probiotics in hydroponic lettuce- Mid Atlantic Fruit and Vegetable Convention
- Root zone temperature management- Mid Atlantic Fruit and Vegetable Convention
- Cultivar trialing- American Hort Grow-Pro Conference
- Balancing yield and quality in greenhouse tomato production- American Hort Grow-Pro Conference
- Balancing yield and quality in greenhouse cucumber production- American Hort Grow-Pro Conference
- Introduction to greenhouse vegetable production- Michigan Greenhouse Growers Expo
- Greenhouse vegetable panel- Indoor Ag Con
- Greenhouse tomato production- American Hort Cultivate Pre-Conference Tour
- My early life in industry- ASHS conference graduate student session
- Greenhouse vine crops- Cornell Extension workshop
- Greenhouse vegetable production- Mid-Atlantic Crop School
- Leafy crops in soilless systems- North Carolina Greenhouse Vegetable Growers Association
- Introduction to leafy and vine crop production for commercial greenhouse growers (CropKing) – 30 sessions

Extension Publications Summary

- Peer-reviewed Extension publications -99
- Peer-reviewed Extension manual/handbook chapters edited or authored- 17
- Other Extension educational factsheets or technical information – 54
- Extension teaching materials/curricula/lesson plans- 45
- Educational videos, teaching or technical recordings- 105
- Extension electronic newsletters- 109
- University or Extension press releases or communications- 44
- Popular press or trade publications- 55

Peer-Reviewed Extension Factsheets and Bulletins

Painter R, Bell E, Bowling B, Bumgarner N, and Scott C, Tennessee cut flower summer annual enterprise budgets. UT Extension W1348. <https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2025/10/W1348.pdf>

Bumgarner N, and Reeder T, Making and using compost in residential and community gardens and landscapes. UT Extension (in press).

Bumgarner N, and Scott C, Woodland plants for Tennessee shade gardens. UT Extension (in press).

Bumgarner N, and Vogel A, Managing caneberries in residential production in Tennessee. UT Extension (in press).

Bumgarner N, and Vogel A, Managing strawberries in residential production in Tennessee. UT Extension (in press).

Bumgarner N, Ary B, Dunlap A, Gunter J, O’Ferrall M, Rose M, Sykes V, Upchurch G, Whitehouse S, and Whitbeck K, 2026 Tennessee home fruit and vegetable garden calendar. UT Extension W-436 (2025).
<https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2024/02/W436.pdf>

Bumgarner N, Dunlap A, O’Ferrall, and Treadway H, Small space outdoor food production. UT Extension W-1288A (2025). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/04/W1288A-Small-Space-Outdoor.pdf>

Bumgarner N, Dunlap A, and Treadway H, Small space indoor food production. UT Extension W-1288B (2025).
<https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/04/W1288B-Small-Space-Indoor.pdf>

Bumgarner N, Dunlap A, and Treadway H, Crops and cultivars for small space food production. UT Extension W-1288C (2025). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/04/W1288C-Small-Space-Cultivars.pdf>

Bumgarner N, Lockwood D, Upchurch, and Rose M, Selecting grapes for residential production in Tennessee. UT Extension W-895E (2025). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/02/W895E-Grapes.pdf>

Bumgarner N, and Lockwood D, Selecting peaches, plums, and cherries for residential production in Tennessee. UT Extension W-895F (2025). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/02/W895F-Peaches-Cherries-and-Plums.pdf>

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<https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/01/W436-2025-version.pdf>

Campbell T, and Bumgarner N, Growing indoor plants with pets. UT Extension W1128C (2025).
<https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/10/W1128C.pdf>

Sykes V, Bumgarner N, Tennessee home garden variety trials: 2024 results. UT Extension W-1313 (2025).
<https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/03/2024-Home-Garden-Trial-Results-W1313.pdf>

Bumgarner N, Whitehouse S, and Lockwood D, Managing blueberries in residential production in Tennessee. UT Extension (in press).

Brosnan J, Bumgarner N, Bowling R, Breeden G, and Scott C, Update on Roundup branded herbicides for consumers UT Extension W-1237 (2024). <https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2024/05/W1237.pdf>

McKim K, Fulcher A, Rihn AL, Warner LA, LeBude AV, Velandia M, Bumgarner N, and Schexnayder S, The role of automation in addressing the nursery industry labor shortage, Part II: Advances in automation with task. UT Extension Publication. W- 1235 (2024). <https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2024/10/W1235.pdf>

Brosnan J, Bowling RG, Breeden G, and Bumgarner N, 2024 Lawn care maintenance calendar. UT Extension SP-1903 (2024). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2025/01/PB1903-2025.pdf>

Rose M, and Bumgarner N, Selecting culinary herbs for Tennessee gardens. UT Extension W-1225-A (2024). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2024/07/W-1225A.pdf>

Bumgarner N, and Rose M, Growing culinary herbs in Tennessee. UT Extension W-1225-B (2024). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2024/07/W1225B.pdf>

Sykes V, Bumgarner N, Tennessee home garden variety trials: 2023 results. UT Extension W-1231 (2024). <https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2024/07/W1231.pdf>

Bumgarner N, Dunlap A, Lockwood D, McGee L, Ary B, Gunter J, Rose M, Sammons L, Sykes V, Upchurch G, and Whitehouse S, Tennessee home fruit and vegetable garden calendar-2024. UT Extension W-436 (2023). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2024/01/W436-2024.pdf>

Bumgarner N, Dunlap A, Scott C, Ludwig A, Ary B, Gunter J, Rose M, Reeder T, Rumble L, Sykes V, Treadway H, Upchurch G, and Whitehouse S, Welcome Home: Gardening in Tennessee. UT Extension SP-1919 (2023). <https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2023/10/PB1919.pdf>

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Bumgarner N, Tennessee Extension Master Gardener Program Guide- Volunteers. UT Extension W-099 (revision) (2025). <https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2023/10/W099.pdf>

Sykes V, Bumgarner N, Keadle B, and Schoonheim J, Tennessee home garden variety trials: 2022 results. UT Extension W-1162 (2023). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/W1162.pdf>

Fulcher A, Rihn AL, Warner LA, LeBude AV, Velandia M, Bumgarner N, and Schexnayder S, The Role of Automation in Addressing the Nursery Industry Labor Shortage, Part I: Current Automation Adoption. UT Extension Publication. W1147 (2023). <https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2023/10/W1147.pdf>

Bumgarner N, and Garrison M, Selecting indoor plants for the home or office. UT Extension W-1128A (2022). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/W1128A.pdf>

Bumgarner N, and Garrison M, Caring for indoor plants. UT Extension W-1128B (2023). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/W1128B.pdf>

Bumgarner N, Keadle B, and Lockwood D, Selecting strawberries for residential production in Tennessee. UT Extension W-895C (2022). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/W895C.pdf>

Bumgarner N, Lockwood D, and Hansen Z, Selecting apples and pears for residential production in Tennessee. UT Extension W-895-D (2022). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/W895D.pdf>

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Hansen Z, Vail K, Hale F, and Bumgarner N. Disease and insect control in home fruit plantings. UT Extension PB-1622 (2021). <https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/PB1622.pdf>

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- Scott C, Reese C, Sammons L, Holman L, Dimond J, and Bumgarner N, Annuals and biennials for Tennessee landscapes. UT Extension W874-A (2020).
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Extension and Industry Digital Education and Outreach Creative Activities

- Site developer, manager, and editor for the Tennessee Extension Residential Horticulture website. (2017-present) <https://uthort.com>

- Manager for UT Master Gardener Instagram account. https://www.instagram.com/ut_mastergardeners/
- Creator and Manager for UT Residential and Consumer Horticulture YouTube channel. (2015-present) <https://www.youtube.com/channel/UCjS3d1IkIH1OZ1Z2qPvhgfQ>
- Revision and ongoing management of the Tennessee Extension Master Gardener Database for volunteer education and service reporting statewide. (2014- present)
- Serve as manager and editor for the Tennessee Extension Master Gardener Website. (2015-present) <https://extension.tennessee.edu/MasterGardener/Pages/default.aspx>
- Development and management of new TEMG volunteer reporting database. (2018-present) <https://temg.tennessee.edu/>
- Developed and contributed monthly research and evaluation articles to the CropKing greenhouse blog (Nov. 2012- Nov. 2014) <https://www.cropking.com/blog>
- Edited and revised the CropKing Growers Manual, to accompany commercial greenhouse system packages (2012-2013)
- Redesign and revision of two-day training program for current and prospective CropKing growers and customers (2013)
- Fertilizer Composition and Method Provisional Patent Application OSU1159_293A (2011)

Undergraduate Student Education

- Sole instructor for UT PLSC 434 (Fall 2021) – Fruit and Vegetable Production
- Supervisor for nearly 20 undergraduate summer interns
- Invited lecturer yearly for UT PLSC 330 Plant Propagation (vegetable grafting)
- Invited lecturer yearly for PLSC 115 – Plants that Changed the World
- Co-Instructor for WVU Hort 293 in Summer 2004- Home Gardening Class
- Guest lecturer for OSU and WVU undergraduate classes

Graduate Student Education

- Graduate Teaching

Co-Instructor: PLSC 504 (Fall 2015, Spring 2016, Fall 2019, Spring 2020)

- Graduate Mentorship

Sam Humphrey, Ph.D. University of Tennessee, Plant Sciences- Member- 2025-present

Siena Jobkar, M.S., University of Tennessee, Plant Sciences- Member- 2024-present

Gracie Carter, Ph.D., University of Tennessee, Plant Sciences- Co-Advisor- 2024-2025

Joe Pardue, M.S., University of Tennessee, Plant Sciences- Member- 2024-present

Katelynn Rector, M.S., University of Tennessee, Plant Sciences- Member- 2022-present

Jaq Payne, M.S., University of Tennessee, Forestry Wildlife and Fisheries- Member- 2021-2024

Ross Thomas III, M.S., University of Tennessee, Plant Sciences- Co-Advisor- 2020-2021

Anna Duncan, M.S., University of Tennessee, Agriculture, Leadership, Education and Communications- Member- 2018-2020

Sally Dixon, M.S., University of Tennessee, Agriculture, Leadership, Education and Communications-Member- 2017-2018

RESEARCH PUBLICATIONS, PRESENTATIONS, AND GRANTS

Peer-Reviewed Publications

- Bumgarner N**, Rihn A, Painter R, and Burns S, Equipping Extension educators to use cultivar trials and sensory panels to support small fruit growers, *J. Extension* (in press).
- Fidler M, **Bumgarner N**, Haynes C, Mitchell K, Gomez C, Identifying cultivar preferences of compact tomato plants using a citizen science approach. *HortTechnology* (in press)
- Campbell JH, Dorn S, **Bumgarner N**, and Kirk-Ballard H, A Conjoint Analysis Framework for Evaluating Floral Marketing and Consumer Preferences in the United States. *HortScience* 60:1409–1414 (2025)
<https://doi.org/10.21273/HORTSCI18316-24>
- Lay-Walters A, Samtani J, Fernandez G, Havlin J, Coneva E, Stafne E, **Bumgarner N**, Lockwood D, Rubio Ames Z, Blaedow K, and McWhirt A, Survey of Seasonal Variation of Leaf Tissue Nutrient Concentration of Southeastern Blackberry. *HortScience*, 60: 1928–1937 (2025) <https://doi.org/10.21273/HORTSCI18867-25>
- Rihn A, Walters K, **Bumgarner N** and Pralhad B, Consumers’ risk perception of production practices to enhance the nutrient content of microgreens. *J. Ag. Food Res.* (2024). <https://doi.org/10.1016/j.jafr.2024.101542>
- Rihn A, Walters K, and **Bumgarner N**, The influence of risk perceptions of consumer willingness-to-pay for nutrient enhanced microgreens. *HortScience* 59(10):1465-1474 (2024). <https://doi.org/10.21273/HORTSCI17888-24>
- Bumgarner N**, Rihn A, Campbell J, and Dorn S, Growing the next generation of horticulture customers and clients through industry and Extension outreach collaborations. *J. Env. Hortic.* 42(1):23-30 (2024). <https://doi.org/10.24266/0738-2898-42.1.23>
- McWhirt A, Samtani J, Fernandez G, Stafne E, Coneva E, Lockwood D, Rubio Ames Z, **Bumgarner N** and Havlin J. Status of crop fertility management and plant tissue nutrient concentration of blackberry in the southeastern United States. *Acta Hortic.* 1388: 347-354. (2024) <https://doi.org/10.17660/ActaHortic.2024.1388.50>
- Stephens C, Kelso H, Jean-Philippe S, Richards J, **Bumgarner N**, Eckelkamp L, Rampold S, Eash N, and Lamons B, Agricultural entrepreneur involvement of eight Botswana women: A qualitative study. *J. Southern Agric. Ed. Res.* 73: 1-16 (2023). <http://jsaer.org/2023/08/30/agricultural-entrepreneur-involvement-of-eight-botswana-women-a-qualitative-study/>
- Fulcher A, Rihn A, Warner L, LeBude A, Schexnayer S, Altland J, **Bumgarner N**, Marble CS, Nackley L, Palma M, Ribera L, Velandia M, and Zhu H, Overcoming the nursery industry labor shortage with automation: A review of strategies to adapt to a reduced workforce, and current technology adoption levels, perceived helpfulness, and outcomes. *HortScience*. 58(12):1513-1523 (2023). <https://doi.org/10.21273/HORTSCI17230-23>.

- Bumgarner N**, Wilcox D, Wright H, Duncan A, Painter R, Rose M, Sammons L, Scott C, and Upchurch G, Building Volunteer Engagement in the Tennessee Extension Master Gardener Program from the Ground Up. *J. Extension* 60:3 (2022). <https://tigerprints.clemson.edu/joe/vol60/iss3/17/>
- Sykes V, **Bumgarner N**, Keadle S, Wilson A, and Palacios F, Citizen science in vegetable garden cultivar evaluation in Tennessee. *Horticulturae* 7: 422 (2021) <https://doi.org/10.3390/horticulturae7110422>
- Bumgarner N**, Bauske E, Bennett P, Close D, Dorn S, Durham R, Evensen C, James T, Kirk-Ballard H, Kuehny J, Polomski R, Smith K, and Walberg K, Multi-state Extension publication series highlights benefits of consumer horticulture to society and provides basis for further education efforts. *Acta Hort* 1330: 169-176. (2021) <https://doi.org/10.17660/ActaHortic.2021.1330.19>
- Dorn S, **Bumgarner N**, Maddox M, Pennisi S, Bauske E, and Newberry M, Extension Master Gardener Volunteers Contributing to Community Health and Wellbeing. *Acta Hort* 1330: 185-192. (2021) <https://doi.org/10.17660/ActaHortic.2021.1330.21>
- Dorn S, **Bumgarner N**, Relf D, Glen C, Flagler J, Fry J, Dunker K, and Helmholdt A, Pivot or paradigm shift? COVID-19 impact on Extension Master Gardener Training and Outreach. *Acta Hort* 1330: 253-260. (2021) <https://doi.org/10.17660/ActaHortic.2021.1330.30>
- Bennett P, **Bumgarner N**, and Dorn S, The National Initiative for Consumer Horticulture and the role it plays in human well-being. *Acta Hort* 1330: 177-184. (2021) <https://doi.org/10.17660/ActaHortic.2021.1330.20>
- McGinnis E, Rihn A, **Bumgarner N**, Krishnan S, Cole J, Sclar C, and Khachatryan H, Enhancing consumer horticulture's millennial outreach: Social media, retail, and public gardens perspective. *HortTechnology* 30: 642-649 (2020). <https://doi.org/10.21273/HORTTECH04697-20>
- Bumgarner N**, McGinnis E, Dorn S, Bennett P, Bauske E, Krishnan S, and Bradley L, Consumer horticulture advancement: Identifying critical research areas and cultivating collaborations. *HortTechnology* 29: 769-776 (2019). <https://doi.org/10.21273/HORTTECH04422-19>
- Meyer M, **Bumgarner N**, and Pulte A, Top 10 plants: Increasing awareness of plants. *Crop Science* 56:2329-2336 (2019). <https://doi:10.2135/cropsci2019.05.0341>
- Dorn S, Bradley L, Hamrick D, Weisenhorn J, Bennett P, Callabro J, Behe B, Bauske E, and **Bumgarner N**, The national initiative for consumer horticulture: Focusing on the critical role of communication and collaboration to further research, extension, and industry goals. *HortTechnology* 28: 414-421 (2018). <https://doi.org/10.21273/HORTTECH04013-18>
- Metallo R, Kopsell D, Sams C, and **Bumgarner N**, Influence of blue/red vs. white LED light treatments on biomass, shoot morphology, and quality parameters of hydroponically grown kale. *Scientia Horticulturae* 235: 189-197 (2018).

- Bumgarner N**, Collett B, Ludwig A, and Stewart C, Establishing campus rain gardens that link student experiential learning with stakeholder education and outreach. *Acta Hort.* 1189: 537-540 (2017).
<https://doi.org/10.17660/ActaHortic.2017.1189.107>
- Bradley L, Bewick T, Bauske E, Langellotto G, and **Bumgarner N**, United States national initiative for consumer horticulture – A strategic plan. *Acta Hort.* 1189: 407-410 (2017).
<https://doi.org/10.17660/ActaHortic.2017.1189.78>
- Bumgarner N**, Hitch J, Upchurch W, Christopherson M, Hamilton S, and Pulte A, From demonstration garden to botanic garden: The novel and successful model of the UT Gardens Crossville: Plateau discovery garden. *Acta Hort.* 1189: 329-332 (2017). <https://doi.org/10.17660/ActaHortic.2017.1189.63>
- Bradley L, Behe B, **Bumgarner N**, Glen C, Donaldson J, Bauske E, Dorn S, Langellotto G, Assessing the Economic Contributions and Benefits of Consumer Horticulture. *HortTechnology* 27: 1-8 (2017).
<https://doi.org/10.21273/HORTTECH03784-17>
- Bumgarner N** and Donaldson J, Assessing the Tennessee Extension Master Gardener Program Using Both County Coordinator and Extension Volunteer Perspectives. *J. Human Sciences Extension.* 5:3 143-152 (2017).
<https://www.jhseonline.com/article/view/775>
- Bumgarner N** and Buck J, Light emitting diode and metal halide supplemental lighting for greenhouse bibb lettuce production in the Midwestern United States. *J. Appl. Hort.* 18(2): 128-132 (2016).
- Bumgarner N**, Scheerens J, and Kleinhenz M, Nutritional yield: A proposed index for fresh food improvement illustrated with leafy vegetable data. *Plant Foods Human Nutr.* 67(3): 215-222 (2012). <https://doi.org/10.1007/s11130-012-0306-0>
- Bumgarner N**, Miller W, and Kleinhenz M, Digital image analysis to supplement direct measures of lettuce biomass. *HortTechnology* 22: 547-555 (2012). <https://doi.org/10.21273/HORTTECH.22.4.547>
- Bumgarner N**, Bennett M, Ling P, Mullen R, and Kleinhenz M, Active and passive zonal heating creates distinct microclimates and influences spring- and fall-time lettuce growth in Ohio. *HortTechnology* 22: 228-236 (2012).
<https://doi.org/10.21273/HORTTECH.22.2.228>
- Bumgarner N**, Scheerens J, Mullen R, Bennett M, Ling P, and Kleinhenz M, Root-zone temperature and nitrogen affect the yield and secondary metabolite concentration of fall and spring-grown, high density lettuce. *J. Sci. Food Agric.* 92: 116-124 (2012). <https://doi.org/10.1002/jsfa.4549>

Bumgarner N, Bennett M, Ling P, Mullen R, and Kleinhenz M, Canopy cover and root-zone heating effects on fall- and spring-grown leaf lettuce yield in Ohio. *HortTechnology* 21: 737-744 (2011).

<https://doi.org/10.21273/HORTTECH.21.6.737>

Bumgarner N, and Verlinden S, Effects of water inclusion in microclimate modification systems for warm and cool season vegetable crops on temperature and yield. *J. Appl. Hort.* 12(2): 87-92 (2010).

Published Abstracts and Academic Presentations

Bumgarner N, Rihn A, Duncan A, Ruth T, Consumers and the green industry: What do they really know about the realities of plant production? *HortScience*, 60: SXX (2025)

Gomez C, Cardeneas S, Fidler M, Mitchell K, **Bumgarner N**, Knuth M, and Haynes C, Citi-Sci: A multi-state gardening project to evaluate plant preferences and knowledge gained from Extension education. *HortScience* 60: SXX (2025)

Dorn S, Campbell J, **Bumgarner N**, and Kirk-Ballard, H, Using gardener identity to fine-tune Extension programming for consumer audiences. *HortScience* 60: SXX (2025).

Friedrich J, Armstrong S, **Bumgarner N**, Givens S, Pope J, Rihn A, and Walters K, Light intensity during radish and kale microgreen production influences nutritional quality and consumer perception. *HortSciences* 60: SXX (2025).

Lay-Walters A, Samtani J, Fernandez G, Havlin J, Coneva E, Stafne E, **Bumgarner N**, Lockwood D, Rubio Ames Z, Blaedow K, and McWhirt A, Regional survey recommends amendments to southeastern blackberry leaf tissue nutrient sufficiency ranges. *HortScience*, 60 (2S): SR33 (2025)

Bumgarner N, Scott C, Duncan A, Ludwig A, Whitehouse S, Reeder T, Rose M, Upchurch G, Rumble D, Mote M, Treadway H, Stefanski J, Welcome Home to Tennessee: Reaching new audiences with new collaborative outreach models *HortScience* 59: S167 (2024).

Fidler M, Mitchell K, **Bumgarner N**, Haynes C, and Gomez C, Using citizen science to evaluate preferences for compact tomato plants. *HortScience* 59:S442 (2024).

Fidler M, Mitchell K, **Bumgarner N**, Haynes C, and Gomez C, Evaluating knowledge gained from Extension education provided in a citizen-science gardening project. *HortScience* 59:S441 (2024).

Dorn S, Campbell J, **Bumgarner N**, and Kirk-Ballard, H, Gardener experience, knowledge, and identity: Do those who know more actually grow more? *HortScience* SR (2024).

Bumgarner N, Dorn S, Campbell J, and Kirk-Ballard, H, Understanding the why of gardening motivations helps educators and retailers support the how much of garden spending. *HortScience* SR (2024).

- Bumgarner N**, Rihn A, Campbell J, and Dorn S, Extension outreach and green industry retailer synergies to reach new horticulture consumers. HortScience 57: S29 (2022).
- Bumgarner N**, Rihn A, Campbell J, and Kirk-Ballard, H, Plant people perceptions: How gardeners see themselves is linked to both people and experiences. HortScience 58: S89 (2023).
- Bumgarner N**, Rihn A, Lockwood D, Integrating sensory evaluations into cultivar selection for small-scale small fruit growers. HortScience 58: S201 (2023).
- Campbell J, **Bumgarner N**, Dorn S, Kirk-Ballard, H, and Rihn A, Delivery Method and Topic for Gardening and Plant Information: What Drives Extension Programming at the User Level. HortScience 58: S70 (2023).
- Kirk-Ballard, H, Dorn S, Campbell J, and **Bumgarner N**, Newbie gardeners, What makes them grow? HortScience 58: S89 (2023).
- Dorn S, Campbell J, Kirk-Ballard, H, and **Bumgarner N**, Educator and Evangelist: Can We Make Gardeners out of Those Who Do Not Garden? HortScience 58: S89 (2023).
- Rihn A, **Bumgarner N**, Walters K, Tennesseans preferences for locally grown microgreens. HortScience 58: S126 (2023).
- Kirk-Ballard, H, Durham R, Dorn S, Campbell J, and **Bumgarner N**, ALL the benefits and the fun: Teaching NextGen gardeners. HortScience 58: SR19 (2023).
- Dorn S, Campbell J, Kirk-Ballard, H, and **Bumgarner N**, Identifying as a gardener: Is it a matter of perception? HortScience 58: SR21 (2023).
- Lay-Walters A, Samtani J, Fernandez G, Stafne E, **Bumgarner N**, Lockwood D, Rubio Ames Z, and McWhirt A, Survey of season variation in blackberry leaf and petiole nutrient content in the southeast. HortScience 58: SR52 (2023).
- Dorn S, **Bumgarner N**, Bennett P, and James T, People-plant connections: A train-the-trainer module for EMGs coordinators and volunteers. National Extension Conference on Volunteerism (2023).
- Bumgarner N**, and Rose M, Building volunteer groups with “personality”: Using personality assessments as a training tool to enhance local volunteer group culture and impact. National Extension Conference on Volunteerism (2023).
- Ludwig A, **Bumgarner N**, Scott C, and Berbiglea J, Tapping the Well that is Private Property to Address Community-Scale Challenges. University Council on Water Resources Annual Conference (2023).
- Bumgarner N**, Rihn A, Campbell J, and Dorn S, Extension outreach and green industry retailer synergies to reach new horticulture consumers. HortScience 57: S29 (2022).
- Stephens CA, Jean-Philippe SR, Richards JK, **Bumgarner N**, and Eckelkamp E, Agricultural Entrepreneur Involvement of Eight Botswana Women: A Qualitative Study. Association of International Agricultural and Extension (2021).

- Dorn S, **Bumgarner N**, Maddox M, Pennisi S, Bauske E, and Newberry M, Extension Master Gardener Volunteers Contributing to Community Health and Wellbeing. International Society for Horticultural Science/International Plant People Council Conference (2021).
- Dorn S, **Bumgarner N**, Relf D, Glen C, Flagler J, Fry J, Dunker K, and Helmholdt A, Pivot or paradigm shift? COVID-19 impact on Extension Master Gardener Training and Outreach. International Society for Horticultural Science/International Plant People Council Conference (2021).
- Bumgarner N**, and Garcia Chance L, The role of public gardens in human well-being. International Society for Horticultural Science/International Plant People Council Conference (2021).
- Bumgarner N**, Bauske E, Bennett P, Close D, Dorn S, Durham R, Evensen C, James T, Kirk-Ballard H, Kuehny J, Polomski R, Smith K, and Walberg K, Multi-state Extension publication series highlights benefits of consumer horticulture to society and provides basis for further education efforts. International Society for Horticultural Science/International Plant People Council Conference (2021).
- Wright H, **Bumgarner N**, Fulcher A, Brosnan J, Florence R, Hale F, Hansen Z, Holland R, Lockwood D, Rihn A, Samples T, Tsuruda J, Windham A, and Wszelaki A, Insights gained from distance technology during COVID-19: Evaluation of the horticulture hot topics series. HortScience 56: S147 (2021).
- Bumgarner N**, Bauske E, Bennett P, Close D, Dorn S, Durham R, Evensen C, James T, Kirk-Ballard H, Kuehny J, Pennisi S, Polomski R, Smith K, and Walberg K, Multi-institutional Extension publications in Consumer Horticulture- a success story. HortScience 56: S183 (2021).
- Bumgarner N**, Wilcox D, Wright H, Duncan A, Painter R, Rose M, Sammons L, Scott C, and Upchurch G, Investigating Extension Master Gardener programming volunteer engagement and interest in Tennessee through the local group lens. HortScience 56: S184 (2021).
- Bumgarner N**, and Sykes S, Vegetable variety trialing for non-commercial growers using citizen science. HortScience 55: S9 (2020).
- Bumgarner N**, Grafted tomato field trials to inform non-commercial grower decisions. HortScience 54: S315 (2019).
- Bennett P, **Bumgarner N**, Maddox M, and Orick J, The first-ever Extension Master Gardener national strategic plan. HortScience 54: S66 (2019).
- Bumgarner N**, and Sykes S, Taking the trial to the people: Citizen science project for Tennessee vegetable gardeners. HortScience 53: S302 (2018).

- Bumgarner N**, Research and outreach on grafted tomatoes directed to non-commercial producers in the southeast. HortScience 53: S21 (2018).
- Bumgarner N**, Richards J, Sarver D, Stevens C, and Swart J, CEA in the classroom: Connecting secondary students to agricultural career possibilities. HortScience 53: S64-65 (2018).
- Bumgarner N**, Placing horticulture within the human/nature discussion. HortScience 53: S12 (2018).
- Metallo R, Sams C, Kopsell D, **Bumgarner N**, and Kopsell D, Evaluating rank order of microgreen cultivars for biomass and water-soluble carbohydrate concentrations across diverse environments. HortScience 52: S344 (2017).
- Hadziabdic D, Duncan L, **Bumgarner N**, Critzer F, Edwards J, Gwinn K, Muller L, Stephens C, Velandia M, Buschermohle C, Gall E, Logan J, Ludwig A, Fryxell R, Wszelaki A, Guerry D, Kelly H, Ownley B, Lewis K, D'souza D, Jones K, Jean-Philippe S, Wilcox E, Prado M, and DeBruyn J, Foster a GIRLculture: STEM camp solving the grand challenges of the 21st century. APS Annual Meeting. 49-S (2017).
- Bumgarner N**, Collett B, Ludwig A, and Stewart C, Establishing campus rain gardens that link student experiential learning with stakeholder education and outreach. 6th International Conference on Landscape and Urban Horticulture, Abstracts: 90 (2016).
- Bradley L, Bewick T, Bauske E, Langellotto G, and **Bumgarner N**, United States national initiative for consumer horticulture – A strategic plan. 6th International Conference on Landscape and Urban Horticulture, Abstracts: 70 (2016).
- Bumgarner N**, Hitch J, Upchurch W, Christopherson M, Hamilton S, and Pulte A, From demonstration garden to botanic garden: The novel and successful model of the UT Gardens Crossville: Plateau discovery garden. 6th International Conference on Landscape and Urban Horticulture, Abstracts: 51 (2016).
- Bradley L, Bewick T, Bauske E, Meyer M, Durham R, Langellotto G, **Bumgarner N**, Pooler M, and Dorn S, The national initiative for consumer horticulture- A strategic plan. HortScience 51: S141 (2016).
- Bumgarner N** and Donaldson J, Designing evaluation metrics that meet state needs and recognize local realities. HortScience 51: S88 (2016).
- Bumgarner N**, Upchurch W, Christopherson M, and Hitch J, Taking the demonstration garden to the next level: The UT Gardens Crossville: Plateau Discovery Garden model. HortScience 51: S154 (2016).
- Bumgarner N** and Donaldson J, Volunteer and coordinator perspectives on the Tennessee Extension Master Gardener program. HortScience 50: S210 (2015).

- Bumgarner N** and Buck J, Evaluation of light emitting diode and metal halide supplemental lighting for greenhouse bibb lettuce production in the midwest United States. HortScience 49: S273 (2014).
- Bumgarner N**, Hansen R, McMahon R, Showell M, and Carpenter R, Investigating the incorporation of microbial probiotics in hydroponic lettuce production in Ohio. HortScience 48: S293 (2013).
- Bumgarner N**, Francis D, Hu B, Moyseenko J, Kleinhenz M, The composition, more so than yield, of organic field-grown tomato fruit is affected by grafting and rootstock. HortScience 48: S174 (2013).
- Bumgarner N**, Short S, Ballard C, Schmitz D, Vodovotz Y, Kleinhenz M, Can locally-grown crops replace nonfat dry milk in ready-to-use therapeutic foods? Innovative malnutrition solutions for Haiti. HortScience 48: S240 (2013).
- Bumgarner N**, Scheerens J, and Kleinhenz M, An index of fresh vegetable nutritional value which incorporates biomass yield and crop composition. HortScience 47: S149 (2012).
- Kleinhenz M and **Bumgarner N**, Active and passive microenvironment management effects on temperature profiles and crop yield in Ohio low and high tunnel systems. HortScience 47: S182 (2012).
- Bumgarner N**, Ling P, Lee W, and Hansen R, Hydroponic production of leafy crops with alternative lighting under Ohio winter conditions. HortScience 47: S189 (2012).
- Bumgarner N** and Kleinhenz M, Root and shoot zone temperature management in temperate zone high tunnel vegetable production: Profiles, influences and prospects. ISHS International High Tunnel Symposium (2011).
- Bumgarner N**, Kleinhenz M, Ling P, Mullen R, Bennett M, and Scheerens J, Microclimate effects on Ohio-grown baby lettuce: biomass accumulation and composition. HortScience 45(8): S100-101 (2010).
- Bumgarner N**, Kleinhenz M, West J, Miller W, and Ling P, Digital image analysis: A substitute for destructive measures in lettuce production research? HortScience 45(8): S103 (2010).
- Kleinhenz M, **Bumgarner N**, Miller W, West J, and Ling P, Digital image analysis in lettuce production research: associations between predicted and actual leaf area and biomass as influenced by growing condition, growth stage and variety. 28th International Horticultural Congress, Abstracts Vol. 1: 182 (2010).
- Kleinhenz M, **Bumgarner N**, Ling P, Mullen R, Bennett M, and Scheerens J, Off-season microclimate effects on baby lettuce in the U.S. midwest with attention to leaf yield and nutritional makeup. 28th International Horticultural Congress, Abstracts Vol. 2 (Symposia): 597 (2010).
- Bumgarner N** and Verlinden S, Season extension methods for market gardeners. HortScience 42: 954 (2007).

Grants, Contracts, and Funding Awarded

- Hayter J, Vogel A, **Bumgarner N**, Farm trials to Consumer Tastings: Supporting Strawberry Producers in Tennessee, Tennessee Department of Agriculture: Specialty Crops Block Grant (\$76,180) 2025-2028
- LeBude AV, Fulcher A, Adesso K, Altland J, **Bumgarner N**, Chen L, Gan H, Kantor G, Sultan M, Marble C, Nackley L, Palma M, Ribera L, Rihn A, Ruth T, Schexnayder S, Velandia M, Warner L, and Zhu H, Labor, Efficiency, Automation, and Production: LEAP Nursery Crops Toward Sustainability. USDA-NIFA-SCRI (\$9,825,677) 2024-2029
- Zhao X, Tonn B, Colby S, Sims C, **Bumgarner N**, Allard S, and Cronley C, SCC-PG: A Smart, Connected and Distributed Community Hydroponics System NSF (\$75,000)- 2024-2025
- Ludwig, A, **Bumgarner N**, and Duncan L, Technology Transfer of Nutrient Management and Water Quality Protection for Urban and Community Farmers. EPA- NASDA (\$198,408)- 2023-2026
- Bumgarner N**, Rihn A, Painter, R, Scott C, and Bell E, Equipping cut flower growers to expand their markets in Tennessee, TDA Specialty Crops Block Grant (\$50,000)- 2023-2026
- Bumgarner N**, Lockwood D, Rose M, and Painter R, Evaluating cultivar selection and management practices to support blueberry educators and growers in the mid-South. Southern Region Small Fruit Consortium- (\$5,000)- 2023-2025
- Jean-Phillipe S, and **Bumgarner N**, Exploring sustainable urban to rural practices in undergraduate research. UTK SURGE Grant (\$61,715)- 2022
- Campbell J, **Bumgarner N**, Dorn S, Kirk-Ballard H, James T, Pennisi, Smith K, Bennett P, Durham R, Polomski R, and Close D, Seizing the moment: growing green industry profits from an emerging market of plantspeople, Horticulture Research Institute (\$34,000)- 2020-2023
- Rihn A, Walter K, and **Bumgarner N**, Investigating New Crop Adoption and Success in Tennessee: Production Methods and Marketplace Acceptance of Microgreens, TDA Specialty Crops Block Grant (\$25,079)- 2021-2024
- Lockwood D, and **Bumgarner N**, Multistate Evaluation of Nitrogen Fertilizer Rate Impacts on Blackberry and Survey of Crop Nutrient Status in the Southeast. Southern Region Small Fruit Consortium (\$6,350)- 2022-2024
- Rose M, McKinney J, and **Bumgarner N**, Creating a cycle of sustainability on the homestead, Tennessee Department of Agriculture: Specialty Crops Block Grant (\$25,079)- 2021-2024
- Residential and Consumer horticulture leadership team funding proposal- Welcome Home Extension publication. Tennessee Extension Funding Proposal (\$8,260)- 2021-2023
- Residential and Consumer horticulture leadership team funding proposal- EMG County promotion kits. Tennessee Extension Funding Proposal (\$6,600)- 2021-2022
- Ludwig A, and **Bumgarner N**, Getting the job done right: Contractor training for small-scale water quality protection solutions, Tennessee Department of Agriculture: US EPA Contract (\$46,183)- 2021-2022

Bumgarner N, Lockwood D, Hansen Z, and Sykes V, Evaluating cultivar selection and trellis types to support blackberry growers in the mid-south. Southern Region Small Fruit Consortium- (\$5,000)- 2021-2022

Tsuruda J, and **Bumgarner N**, Increasing Pollinator Conservation and Habitat Through Science-based Outreach and Education for Underserved Farmers and Ranchers in TN, USDA-NRCS (\$16,499)- 2021-2024

Tsuruda J, and **Bumgarner N**, Building productive pollinator habitats in Tennessee through demonstration and science, USDA-NRCS (\$5,000)- 2021-2024

Fulcher A, LeBude A, Altland J, **Bumgarner N**, Marble C, Palma M, Nackey L, Kunkel B, Oki L, Warner L, LEAP Labor, efficiency, automation and production for sustainability in the nursery crops industry. USDA-SCRI (\$50,000)- 2020-2022

Bumgarner N, and Lockwood D, Creating a competitive advantage for Tennessee blackberry growers. TDA Specialty Crops Block Grant (\$23,814)- 2020-2023

Hansen Z, **Bumgarner N**, Lockwood D, Rose M, Butler D, and Sykes V, Demonstrating the impact of Brassica cover crops on soil management and plant health and quality in small fruit plantings in the Mid-South. Southern Region Small Fruit Consortium- (\$5,000)- 2020-2021

Jean-Phillipe S, and **Bumgarner N**, Exploring sustainable urban to rural practices in undergraduate research. UTK SURGE Grant (\$44,000)- 2020 deferred to 2021

Jean-Phillipe S, Richards J, **Bumgarner N**, and Eckelcamp L, Supporting the development of sustainable vegetable and animal production and sustainable landscapes in Ntlhantlhe, Botswana. UTK Global Catalyst Grant (\$12,500) – 2020- deferred due to COVID

Residential and Consumer horticulture leadership team funding proposal- Home Fruit Training and Trialing Program. Tennessee Extension Funding Proposal. (\$15,000)- 2019-2021

Hansen Z, **Bumgarner N**, Lockwood D, Rose M, Sykes V, Hopkins H, and Velandia M, Evaluation cultivar selection and integrated pest management practices in economic terms to support blueberry growers in the mid-south. Southern Region Small Fruit Consortium (\$5,000)- 2018-2020

Home Fruit and Vegetable Workgroup, Residential and Consumer horticulture leadership team funding proposal- Home Vegetable Training and Trialing Program. (\$9,392)-2017

Bumgarner N, Richards J, Stephens C, and Sarver D, Engaging secondary students in agricultural science career paths through integration of controlled environment food production. USDA-NIFA SPECA. (\$45,055)- 2016-2019

Residential and Consumer horticulture leadership team funding proposal- Tennessee Smart Yards Program Revision. Tennessee Extension Funding Proposal. (\$18,800)- 2016

Duncan L, **Bumgarner N**, Critzer F, Edwards J, Gwinn K, Muller L, Stephens C, Velandia M, Buschermohle C, Gall E, Logan J, Ludwig A, Fryxell R, Wszelaki A, Guerry D, Kelly H, Ownley B, Lewis K, D'souza D, Jones K, Jean-Philippe S, Wilcox E, Prado M, and DeBruyn J, Foster a GIRLculture: a girls STEM camp solving the grand challenges of the 21st century, USDA-NIFA (\$53,000)- 2015

Bumgarner N, UTIA AgResearch travel grant (\$1,500)- 2015

Bumgarner N, Kleinhenz M, Preparing farmers to meet quality goals, Paul C. and Edna H. Warner Endowment Fund for Sustainable Agriculture Interdisciplinary Grant for On-Farm Research (\$4,250) – 2011

Bumgarner N, Kleinhenz M, Fall through spring sustainable organic lettuce production in Ohio. Paul C. and Edna H. Warner Endowment Fund for Sustainable Agriculture Interdisciplinary Grant for On-Farm Research (\$4,000)- 2010

Bumgarner N, Concurrent gains in the biomass and nutritional yield of vegetable cropping systems will enhance their roles as drivers of prosperity and human health. The Ohio Agricultural Research and Development Center Research Enhancement Competitive Graduate Student Grants Program (\$5,000) – 2009

Research and Demonstrations – Extension, Industry, or Fee-Based Funding

- Citizen Science Home Garden Variety Trial (2017-present)
- Small fruit crop and cultivar demonstrations at county Extension sites (2020-present)
- Multi-state (IN, IA, TN, NC) urban container citizen science trial (2023-2024)
- All American Selections edible trial coordinator and judge (2015-2019)
- GreenStalk container demonstration and evaluation (2015)
- BioWish bio-stimulant hydroponic production system trials (2012-2014)
- 39 vegetable cultivar or production system studies for commercial greenhouse vegetable producers (2012-2014)

HONORS AND AWARDS

- NACAA Communications National Winner- Learning Module/Notebook- 2025
- NACAA Commercial and Consumer Horticulture Search for Excellent National Finalist- 2025
- NACAA Communications National Finalist- UT Hort Website- 2025
- NACAA Communications Regional Winner - UT Hort Newsletter- 2025
- American Society for Horticultural Science Extension Division- Outstanding Education Materials Award, 2024
- Cynthia Westcott Scientific Writing Award- GardenComm International- 2024
- Dutch and Marilee Cavender Publications Award- Welcome Home: Gardening in Tennessee-- University of Tennessee Institute of Agriculture, 2024
- NACAA Regional Winner and National Finalist- Publication- Welcome Home: Gardening in Tennessee- 2024
- Dutch and Marilee Cavender Publications Award- University of Tennessee Institute of Agriculture, 2023
- University of Tennessee Gamma Sigma Delta Team Award, 2022
- American Society of Agricultural and Biological Engineer Blue Ribbon Award for Tennessee Smart Yards website, 2022
- University of Tennessee- Knoxville Chancellor's Award for Excellence in Academic Outreach, 2021

- American Society for Horticultural Science Extension Division- Outstanding Education Materials Award- Benefits of Consumer Horticulture Series, 2021
- Gamma Sigma Delta Extension Award- University of Tennessee Institute of Agriculture, 2020
- Ann and Bill Hicks Outstanding New Extension Worker Award- University of Tennessee Institute of Agriculture, 2019
- J.E. Moss Achievement Award for Extension- University of Tennessee Institute of Agriculture, 2019
- Dutch and Marilee Cavender Publications Awards (2)- University of Tennessee Institute of Agriculture, 2019
- American Society for Horticultural Science Extension Division- Outstanding Education Materials Award- Tennessee Home Vegetable Garden 2018 Calendar, 2018
- National Association of County Agricultural Agents Communications Award- Learning Module or Notebook National Finalist. Tennessee Extension Master Gardener Handbook, 2018
- National Association of County Agricultural Agents Communications Award- Publication National Finalist. Tennessee Home Vegetable Garden 2018 Calendar, 2018
- American Society for Horticultural Science Consumer Horticulture and Master Gardener Working Group Distinguished Achievement Award, 2017
- Dutch and Marilee Cavender Publications Award- University of Tennessee, 2017
- CAFCS Outstanding Service to Students- The Ohio State University, 2015
- Crop Science Society of America Gerald O. Mott Graduate Student Meritorious Award- 2011
- American Society for Horticultural Science Student Travel Grant- 2010
- Susan L. Huntington Distinguished Ohio State University Fellowship -2008
- American Society for Horticultural Science Industry Division Student Travel Grant - 2007
- West Virginia University Order of Augusta -2005
- West Virginia University Foundation Outstanding Senior- 2005
- West Virginia University Division of Plant and Soil Sciences - Outstanding Senior -2005
- American Floral Endowment -Vic and Margaret Ball Internship –2005
- Gamma Sigma Delta Agriculture Honor Society–Outstanding Sophomore, Junior and Senior- 2003, 2004, 2005

ACADEMIC AND PROFESSIONAL SERVICE

National Service

- Southern Extension Research Activity- SERA-50
- National Initiative for Consumer Horticulture Board- 2022-present
 - Chair of Board of Directors- 2022-2025
- National Initiative for Consumer Horticulture- Community and Health Benefits Committee member- 2016-2023
- National Initiative for Consumer Horticulture- Economic Committee member- 2016-2018
- Extension Master Gardener National Committee Member- 2017-2021
 - Extension Master Gardener National Committee Chair- 2018-2019
- American Society for Horticultural Science Consumer Horticulture and Master Gardener Working Group
 - Chair. 2018-2019; 2025-2026
 - Vice- Chair. 2017-2018;2024-2025
 - Secretary 2016-2017; 2023-2024
- ASHS Industry Advisory committee and Outstanding Industry Scientist Committee- ASHS -2013, 2014
- Southern Region Consumer Horticulture Coordinating Committee- SCC-85
 - Member of writing committee -2016
 - Committee Chair 2017-2020

University Service

- Mentor for 4 assistant professors (2 in PLSC, 2 in EPP) (2020-present)
- Tennessee Extension Strategic Plan Implementation Team- Volunteerism- 2022-2025
- Tennessee Extension ANR Program Development Team- 2024-2025
- Tennessee Extension SUPER II External Client Module Team- 2023-2024
- Tennessee Extension Home Fruit and Vegetable Workgroup member- 2015-present
- Tennessee Extension Master Gardener Workgroup member- 2015-present
 - Chair 2015-2020
- Tennessee Extension Sustainable Landscapes Workgroup member- 2015-present
- Tennessee Extension Residential and Consumer Horticulture Leadership Team member – 2015-2021
- Tennessee Extension Residential and Community Forestry Workgroup member – 2020-present
- University of Tennessee, Department of Plant Sciences: Seminar Committee- 2014-2021
- University of Tennessee Institute of Agriculture Search Committees- Marketing and Communications, graphic artist, assistant director of Advancement; Jefferson Co. ANR agent, Davidson County ANR agent, Rutherford Co. ANR agent, Director of Diversity, Equity and Inclusion- UTIA, Plant Sciences Department head, Western Region Horticulture Area Specialist 2x, Plant Sciences digital curriculum specialist, Fayette Co. ANR agent, Madison Co AMR agent, Plant Sciences Turf Ext Spec faculty search, Plant Sciences SLD faculty search, Entomology and Plant Pathology Ext Pathology faculty search
- University of Tennessee Extension: Master Producer Oversight Committee- 2015-present
- 4-H Congress ANR faculty representative- 2015
- Ohio Agricultural Research and Development Center Library Review Committee- 2011
- Ohio Agricultural Research and Development Center Scholars - founding member, vice-president and secretary- 2011-2012
- The Ohio Agricultural Research and Development Center Research Enhancement Competitive Graduate
- Student Grants review panel - 2010, 2011
- Horticulture & Crop Science Department Graduate Research Retreat Planning Committee Chair - 2011
- Horticulture & Crop Science Department Graduate Research Retreat Competition Chair - 2009, 2010

PROFESSIONAL AFFILIATIONS

- American Society for Horticultural Science
- International Society for Horticultural Science
- Gamma Sigma Delta
- Tennessee Association of Agricultural Agents and Specialists