**Curriculum Vitae**

**Dr. Gina E. Fernandez Professor**

Department of Horticultural Science,

North Carolina State University, Box 7609 Raleigh, NC 27695-7609

**Education**

1. Ph.D. Cornell University, Ithaca, NY. 1994. Pomology.
2. M.S. University of Minnesota St. Paul, MN. 1987. Horticulture.
3. B.S. Ripon College, Ripon, WI. 1981. Biology.

**Professional History**

* 2019- present, Nell R. and John D. Leazar Distinguished Professor.
* 2010 – 2019: Professor, Dept. Hort. NCSU, Raleigh, NC. 2003 – present. Lead of raspberry and blackberry breeding programs. 2014-present, Lead strawberry breeding program.
* 2010 January – June: Visiting Scholar, University of Kwa-Zulu Natal, Pietermaritzburg, SA.
1. 2002-10: Associate Professor/Extension Specialist, Dept. Hort. NCSU, Raleigh, NC.
2. 1996-2002: Assistant Professor/Extension Specialist, Dept. Hort. NCSU, Raleigh, NC.
3. 1994-5: Post Doc, Dept. of Ecology, Cornell University, Ithaca, NY.
4. 1990-94: Graduate Research Fellow, Cornell University, Ithaca NY.
5. 1988-89: Small Fruit Research Specialist, University of Arkansas, Clarksville, AR.
6. 1985-87: Graduate Research Assistant, University of Minnesota, St. Paul, MN.

**Select Extension and Engagement Activities and Impacts**

Support to NC and regional caneberry (blackberry and raspberry) growers

* *Envisioned, developed, collaborated, and lead a team to make blackberries in North Carolina a viable economic market for producers.* Blackberries are the newest small fruit industry in North Carolina. In 2006, I facilitated the meeting of one large marketer with potential new growers in western NC. Contracts were signed for production on approximately 100 new acres. In subsequent years our team set up a series of agent and grower trainings that covered aspects of production to help the new growers. Budgets and a production guide were also developed. Today, there are 5-6 major marketers buying fruit produced on over 600 acres across the state. The industry has a farm market value of over $15,000,000.
* *Brought the scientific caneberry world to North Carolina for collaboration, discovery, and engagement.* NC State hosted the International Rubus and Ribes Symposium in 2015. This quadrennial meeting was held in NC to highlight our new blackberry industry. Pre-symposium tours included visits to growers in NC and SC. Scientific meetings took place in Asheville where 190 scientists from 26 countries presented 50 oral talks and 93 posters. I was the sole convener of the meeting and co-editor of the proceedings. More than one attendee stated “This meeting put NC/NC State on the map.”
* *Significantly reduced virus symptoms in blackberry production by leading a team to develop virus indexing protocols and promoting use of virus-tested stock.* As the blackberry industry was emerging in NC, new plantings throughout NC and SC were threatened by displays of virus-like symptoms. In collaboration with the NC State Micropropagation and Research Unit and Clean Plant Network, protocols were established for production of virus-indexed nuclear stock of blackberry cultivars which involved testing for more than 20 viruses. NCSU now recommends that growers buy plants from nurseries that sell only virus-tested, micropropagated planting stock. We no longer see virus symptoms in newly planted fields.

Support to NC and regional strawberry growers

* *Saved growers in southeast USA (SEUS) $3-4 million dollars per year by first developing suitable alternatives to methyl bromide (MB), then increasing adoption and retention of practices by producers in the region.* The imminent loss of methyl bromide (MB) threatened the southeastern USA (SEUS) strawberry industry. Research undertaken by our group addressed the practical concerns of growers faced in the SEUS with the loss of MB as a pre-plant soil treatment. Our research and extension programs identified both chemical and biological products and approaches best suited to our region as alternatives. This work won the Grange Specialist Award in 2010, North Carolina State University Search for Excellence for outstanding teamwork.
* *Developed cultural practices to increase yield substantially*. Fall applied row covers increases yield of ‘Camarosa’. Yields of strawberry cultivars are dependent on flower development in the fall and following spring and can therefore vary from year to year. We found that when row covers were used, yield increased by 1/4 to 1/3 lbs/plant for ‘Camarosa’, equivalent to an additional 875 lbs/acre. Fall application of row covers is now a standard practice when ‘Camarosa’ is grown. Fernandez, G.E. 2001. Fall-applied row covers enhance yield in plasticulture strawberries. HortTechnology. 11:440-444.
* *Incubated a statewide initiative in collaboration with NCCES, 4-H and Farm Bureau to have strawberry gardens as part of elementary school education in NC*. The idea was hatched when my daughter entered second grade and I helped her class plant a strawberry garden. <https://growforit.ces.ncsu.edu/curriculum/strawberries-in-schools/>.
* *NC State released ‘Rocco’ and ‘Liz’, two new strawberry cultivars in 2018.* ‘Rocco’ ripens early, has excellent flavor, rich red color and good yield. It is to be considered as an alternative to the early ripening standard ‘Sweet Charlie’. ‘Liz’ has very high yield, large medium firm fruit and is considered to be an alternative to the current industry standard ‘Camarosa.’

**Selected Professional Activities**

* Convener and Editor, XI International *Rubus* and *Ribes* Symposium, 2015
1. Serve as consultant for USAID Rubus project in Serbia, 2011
2. Chair ASHS Fruit Publication Award 2011, Fruit publication award committee member 2010, SR ASHS Fruit session 2014, SR ASHS Awards committee, 2017-present
3. Evaluator (panel member) of proposals for the European Union. FP7-KBBE-2010-4 KBBE.2010.1.2-04: Improving European berries production, quality, nuetraceutical and nutritional value. 2010
4. Panel member for proposal review, NE IPM SARE, 2015

**Selected Extension and outreach activities:**

* Agent only training, Caneberry Pruning 101. Sandhills and MHCREC, 2019
* NCSU Extension Homegrown. Spring is for NC Strawberries. 2018 Video <https://homegrown.extension.ncsu.edu/2018/05/spring-is-for-n-c-strawberries/>
* Farm to Fork Picnic. 2018. Taste test of blackberries and blueberries
* NC Extension Gardener Handbook. 2017. Small fruits chapter
* NC Cooperative Extension Annual meeting, Small fruit 101 and pruning basics
* On-farm testing of strawberry, raspberry and blackberry breeding lines, 2003-present

**Membership in professional organizations:**

* American Society for Horticultural Science, 1986 – present
* Southern Region American Society for Horticultural Science, 2002 - present
* International Society for Horticultural Science, 1997 - present
* North American Brambles Growers Association, 1996 - present
* North American Strawberry Growers Association, 1996 – present
* North Carolina Strawberry Association, 1996 – present
* North Carolina Commercial Blackberry and Raspberry Association, 2008 – present
* RosEXEC Committee, 2014-present

**Professional service on campus:**

* Horticulture Dept. Seminar Committee, 2003-2005, 2018-19
* Graduate Student Selection Committee, 2004-2007
* Selection committees for faculty. 2005, 2008, 2014, 2015, 2016.
* Southern Region Small Fruit Consortium Board member, 2013-present
* NCSU/NCDA&CS Small Fruits Field Day Chair 2005, 2007, 2009, 2010, 2012, 2014
* Study Abroad Scholarship Reader Committee, 2008-9, 2009-10, 2013
* University RPT Committee, 2011-2012
* Doctoral Mentoring Fellows, 2016-17.
* CALS Diversity Committee, 2017-2019
* CALS Research Committee, 2018-2019
* Building Future Faculty, 2018-19

**Professional Service off campus:**

* The North American Bramble Growers Association, Research Foundation Committee Chair, 1998 - 2017
* NCCC-212 - NC Project Coordinator, 1996 – present
* Northwest Center for Small Fruit Research Review Panel. 2018
* USDA-ARS Project Review Committee, 2007-8
* USDA-CGC, Small Fruit Crop Germplasm committee, 2016- present
* National Berry Crops Initiative Strategic Planning Committee, 2005
* American Society Horticultural Science
	+ Small Fruit and Viticulture Working Group Chair 2001
	+ Small Fruit Publication Committee Reviewer/Chair, 1997, 2000, 2010
	+ SR ASHS Fruit Session Program Chair 2014
* Northeastern Region IPM Partnership Grants, Review Panel 2015
* RosEXEC Committee. 2014-2017

**Honors and Awards**

* North American Raspberry and Blackberry Association, Distinguished Service Award 2019
* SR ASHS Distinguished Research Award, 2018
* SR ASHS Blue Ribbon Extension Award, Caneberry Guide, 2018
* SR ASHS Extension Blue Ribbon Communication Award 2011 for the [Blackberry & Raspberry Growers Information Portal](http://www.ncsu.edu/enterprises/blackberries-raspberries).
* Grange Specialist Award. 2010. North Carolina State University Search for Excellence. For outstanding teamwork (methyl bromide research).
* Alfred P. Sloan Pre-tenure Award, 2001-02
* Cornell University, Graduate Fellowship, 1990-1994
* Cornell University, Post Doctoral Fellowship, 1995

**Courses Taught**

* HS 422, Small fruit production, 2004-2016
	+ Course revamped in 2003 for 2004
	+ Average scores Instructor 4.0/5, Course 3.8/5
* HS 703 Breeding of asexually propagated crops
	+ Guest lecture, Caneberry and Strawberry Breeding 2011-17
* HS 205 Home Food Production, Falls 2010-2018

**Select Undergraduate Mentees (1-2/year, work study or volunteer)**

* Katie Lohff. 2019-present. Work study/intern. Introducing strawberry germplasm into tissue culture.
* Maria Lagnese, 2016-present. Work study student/Internship project supervisor
* Meredith Hempill, 2017-18. Volunteer/Intern. Searching for genes associated with white drupelet disorder in blackberry. Now working at MPRU
* Austin Wrenn. Hired by Sun Drop Farm and traveled to Australia and set up berry farm in TN
* Johanna Carter. 2016. Internship. Searching for genes associated with white drupelet disorder in blackberry.
* Skyja Adams 2013-14. NCSU Undergrad. Tunnel Raspberry internship.
* Ezkeial Overbaugh, 2012-14 Fingerprinting Rubus germplasm (ISHS poster and publication)now MS student in Crop Science
* Sarah Leach, 2011-12. Intern. Rubus breeding program assistant. Now museum of Life and Science. Rental Manager
* Dana Hope Masey. 2008. Work Study. Now owner of Plantworks Nursery
* Liz Riley. 2008. Work study. Now Dept Head Alamance Community College

**Graduate Students Directed Chair or Committee Member**

**Masters Theses (16)**

1. Shi, Xiaonan, 2018- present. Strawberry runner production. (Committee member)
2. Xu, Xiangnan, 2018-2019. Optimizing Environmental Parameters for Precision Indoor Propagation of Day-neutral Strawberry. (Committee member)
3. Mikel Ann Conway, Virginia Tech. University. 2015-2018. (Committee member)
4. Doug McPhie. 2016. Entomology. [Impacts of Anthonomus signatus (Curculionidae:Coleoptera) on annual plasticulture strawberries (Fragaria × ananassa).](https://repository.lib.ncsu.edu/handle/1840.16/11028) ﻿ (Committee member)
5. John Beck. 2012. Crop Science. Integrating compost, cover crops, arbuscular mycorrhizal fungi, and vermicompost as sustainable management practices for strawberry production in the Southeastern United States. (Co-Chair with Michelle Scroeder-Moreno)
6. Christine Bradish. 2011. Measured Variation in Flavonoid Composition of North Carolina Red Raspberry through Targeted Metabolite Profiling. (Co-Chair with P. Perkins-Veazie)
7. Jessica Spencer. 2011. Molecular Marker Analysis of Primocane-Fruiting Traits in Raspberry. (Co-Chair with Bryon Sosinski)
8. Ben Garland. 2009. Selecting Cover Crops for Diverse Functions: An Integrated Soil and Pest Management Approach for Organic Strawberry Production in North Carolina. (Co-Chair with Michelle Schroeder-Moreno)
9. Jennifer Swift. 2010. Effects of Frozen Storage and Harvest Time on the Textural and Sensory Properties of Rabbiteye Blueberries (Vaccinium virgatum Aiton). Dept. Hort. Science. (Committee Member)
10. Jeremy Delisle. 2009. Dept. Agriculture and Extension Education. Non-Thesis degree. 2009. (Committee Member)
11. Mary Helen Ferguson. 2006. Evaluation of three commercially available composts for use in strawberry production on plastic. Dept. of Horticultural Science. (Chair)
12. Tania L. Guzman-Baeny. 2003. Incidence, distribution, and symptom description of viruses in cultivated blackberry (*Rubus* subgenus *Eubatus*) in the southeastern United States. Dept. of Horticultural Science. (Chair)
13. Sandy Cook. M.S. 2002. Runner plant production and the effect of light intensity on flower and fruit development in day-neutral strawberries. Dept. of Horticultural Sciences. (Committee member)
14. Michelle Grabowski. 2001. Biologically- and Chemically-Based Alternatives to Methyl Bromide Fumigation in Strawberry Production. Dept. Plant Pathology. (Co-chair with Frank Louws)
15. Laura M. Butler. 1999. The biology of *Botrytis cinerea* and strawberry plant development in southeastern production systems. Dept. Plant Pathology. (Co-chair with Frank Louws)
16. Angelia Kegely. M.S. 1999. Evaluation of Atlantic Coastal and Piedmont sources of loblolly pine (*Pinus taeda* L.) seedlings and their hybrids for growth and cold hardiness. Dept. of Forestry and Environmental Resources (Committee member)

**Doctoral Dissertations Chair/Member/External Reviewer (7)**

1. Laura Kraft, NCSU Entomology Dept. (Committee member)
2. Jose Guillermo Chacon. 2019. Strawberry anthracnose breeding project. (Chair)
3. Christine Bradish. 2016. Studies of Linkage Mapping, Trait Heritability, and Pedigrees for Breeding Improvement of Southeastern Rubus. (Co-Chair with P. Perkins-Veazie)
4. Amanda McWhirt. 2016. The use of sustainable soil management practices in fumigated and non-fumigated strawberry production in the southeastern US. (Committee member/Adopted Co-Chair\*). \*Served as defacto advisor while major advisor was on sabattical leave the last 6 months dissertation preparation
5. Moo Jung Kim. 2014. Organically Grown Blackberries: Storage Life, Phenolic Composition, and Anti-inflammatory Activity. (Co-Chair with P.Perkins-Veazie)
6. Ramon Molina-Bravo. 2009. Development of a genetic linkage map and QTL analysis in Raspberry. Dept. of Horticultural Science. (Co-Chair with Bryon Sosinski)
7. Mark Stephens. Lincoln University, New Zealand. 2013. (External reviewer)

**Graduate Student Placement (served as major advisor or major committee member and helped them gain position)**

* Dr. Christine Bradish Cash, Avoca Plant breeder. NC
* Dr. Amanda McWhirt, University of Arkansas Extension Specialist. AR
* Dr. Moo Jung Kim, Senior Researcher, The Art of Natural Solution. NJ
* Dr. Ramon Molina Bravo, Professor at National University of Costa Rica. CR
* Dr. Mary Helen Ferguson, LSU Extension Agent. LA
* Jessica Spencer, Research Associate. NCSU Blueberry Breeding Program
* Tania Guzman, Research Assistant, NCSU MPRU. NC

**Selected Invited Presentations (see separate list for Extension)**

* Strawberry breeding for disease resistance and raspberry breeding for heat tolerance. 2018. Liaoning Institute of Pomology
* Strawberry breeding in North Carolina. 2018. China Agricultural University
* Strawberry breeding for disease resistance. 2018. Beijing Acad. Ag Forestry Sciences
* Strawberry production in the southeastern US. 2017. Symposium speaker at ASHS
* Beating the heat: The challenges of growing and breeding raspberries in the southern United States. 2015. XIth International Rubus and Ribes Symposium
* Blackberry Breeding and Production in the US. 2015. Fernandez G.
CORPOICA Grower Meeting Bogota Colombia

**Peer Reviewed Publications**

1. Bradish, C.M., J. M. Bushakra , L. R. Robbins , E. Karaadac, S. Teo, J. L. Willard, P. Perkins-Veazie, J. Lee, J. C. Scheerens, C.A. Weber , M. Dossett , N. V. Bassil, C. E. Finn and G. E. Fernandez. 2020. Standardized Phenotyping in Black Raspberry. Amer. Pom. Soc. 74 (1): 2-17
2. Jacobs, R.L., T. B. Adhikari, J. Pattison, G. C. Yencho, G. E. Fernandez, and F. J. Louws. 2019. Assessing Rate-Reducing Foliar Resistance to Anthracnose Crown Rot and Fruit Rot in Strawberry. Plant Disease, Vol. 104, No. 2:, 398-407.

https://apsjournals.apsnet.org/doi/10.1094/PDIS-04-19-0687-RE?ai=rs&ui=1z2&af=T

1. Jibran R, J. Spencer, G. Fernandez, A. Monfort, M. Mnejja, H. Dzierzon, J. Tahir, K. Davies, D. Chagné, D. and T. Foster.  2019. Two Loci, RiAF3 and RiAF4, Contribute to the Annual-Fruiting Trait in Rubus. Front. Plant Sci. 10:1341. doi: 10.3389/fpls.2019.01341
2. Samtani, J.B., C.R. Rom, H. Friedrich, S.A. Fennimore, C.E. Finn, A. Petran, R. W. Wallace, M. P. Pritts, G. Fernandez, C.A. Chase, C. Kubota, B. Berefurd. 2019. The status and future of the strawberry industry in the United States. HortTechnology. 29:11-24. DOI: <https://doi.org/10.21273/HORTTECH04135-18> .
3. Adhikari, T, G. Fernandez, G. Chacon, F. Louws. 2019. First Report of Anthracnose Causing both Crown and Fruit Rot of Strawberry by Colletotrichum siamense in North Carolina. Plant Disease. Accepted.
4. Jacobs, R., T. Adhikari, J. Pattison, G. C. Yencho, G. Fernandez, and F. Louws. 2019. [Inheritance of Resistance to Colletotrichum gloeosporioides and C. acutatum in Strawberry](https://apsjournals.apsnet.org/doi/abs/10.1094/PHYTO-08-18-0283-R). <https://doi.org/10.1094/PHYTO-08-18-0283-R>. Phytopathology. 109: 428-435.
5. [David P. Livingston III](https://www.jove.com/author/David%2BP._Livingston%2BIII), [Tan D. Tuong](https://www.jove.com/author/Tan%2BD._Tuong), [Mark Hoffman](https://www.jove.com/author/Mark_Hoffman), [Gina Fernandez](https://www.jove.com/author/Gina_Fernandez). 2018. [Protocol for Producing Three-Dimensional Infrared Video of Freezing in Plants](https://www.jove.com/video/58025/protocol-for-producing-three-dimensional-infrared-video-freezing). [doi: 10.3791/58025](http://dx.doi.org/10.3791/58025)

 <https://www.jove.com/video/58025/protocol-for-producing-three-dimensional-infrared-video-freezing>. Issue 139. e58025.

1. Perkins-Veazie, P., J. Pattison, G.E. Fernandez and G. Ma. 2016. Fruit Quality and Composition of Two Advanced North Carolina Strawberry Selections. International J. Fruit Science. 16:(Sup 1): 220-227.
2. Beck, J. E., Schroeder-Moreno, M. S., Fernandez, G. E., Grossman, J. M., & Creamer, N. G. 2016. Effects of cover crops, compost, and vermicompost on strawberry yields and nitrogen availability in North Carolina. [*HortTechnology*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=962)*, 26*(5), 604-613.
3. Bradish, C. M., Yousef, G. G., Ma, G. Y., Perkins-Veazie, P., & Fernandez, G. E. 2015. Anthocyanin, carotenoid, tocopherol, and ellagitannin content of red raspberry cultivars grown under field or high tunnel cultivation in the Southeastern United States. [*Journal of the American Society for Horticultural Science*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=388)*, 140*(2), 163-171.
4. Rysin, O., McWhirt, A., Fernandez, G., Louws, F. J., & Schroeder-Moreno, M. 2015. Economic viability and environmental impact assessment of three different strawberry production systems in the Southeastern United States. [*HortTechnology*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=962)*, 25*(4), 585-594.
5. Kim, M. J., Perkins-Veazie, P., Ma, G. Y., & Fernandez, G. (2015). Shelf life and changes in phenolic compounds of organically grown blackberries during refrigerated storage. [*Postharvest Biology and Technology*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=926)*, 110*, 257-263.
6. Molina-Bravo, R., Fernandez, G. E., & Sosinski, B. R. 2014. Quantitative trait locus analysis of tolerance to temperature fluctuations in winter, fruit characteristics, flower color, and prickle-free canes in raspberry. [*Molecular Breeding*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=1365)*, 33*(2), 267-280.
7. Fernandez, G. E., Ballington, J. R., & Perkins-Veazie, P. 2013. 'Von' thornless blackberry. [*HortScience*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=188)*, 48*(5), 654-656.
8. Burrack, H. J., Fernandez, G. E., Spivey, T., & Kraus, D. A. 2013. Variation in selection and utilization of host crops in the field and laboratory by Drosophila suzukii Matsumara (Diptera: Drosophilidae), an invasive frugivore. [*Pest Management Science*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=2443)*, 69*(10), 1173-1180.
9. Bradish, C. M., Perkins-Veazie, P., Fernandez, G. E., Xie, G. X., & Jia, W. 2012. Comparison of flavonoid composition of red raspberries (Rubus idaeus L.) grown in the Southern United States. [*Journal of Agricultural and Food Chemistry*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=242)*, 60*(23), 5779-5786.
10. Molina-Bravo, R., Arellano, C., Sosinski, B. R., & Fernandez, G. E. 2011. A protocol to assess heat tolerance in a segregating population of raspberry using chlorophyll fluorescence. [*Scientia Horticulturae*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=825)*, 130*(3), 524-530.
11. Garland, B. C., Schroeder-Moreno, M. S., Fernandez, G. E., & Creamer, N. G. 2011. Influence of summer cover crops and mycorrhizal fungi on strawberry production in the Southeastern United States. [*HortScience*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=188)*, 46*(7), 985-992.
12. Fernandez, G. E., & Ballington, J. R. 2010. Performance of primocane-fruiting experimental blackberry cultivars in the Southern Appalachian Mountains. [*HortTechnology*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=962)*, 20*(6), 996-1000.
13. Fernandez, G. E., Ballington, J. R., & Bryson, S. J. 2009. 'Nantahala' red raspberry. [*HortScience*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=188)*, 44*(1), 25-26.
14. Tzanetakis, I. E., Guzman-Baeny, T. L., VanEsbroeck, Z. P., Fernandez, G. E., & Martin, R. R. 2009. First report of impatiens necrotic spot virus in blackberry in the southeastern United States. [*Plant Disease*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=494)*, 93*(4), 432-432.
15. Warmund, M. R., Guinan, P., & Fernandez, G. 2008. Temperatures and cold damage to small fruit crops across the eastern United States associated with the April 2007 freeze. ([*HortScience*](http://www.lib.ncsu.edu/repository/scholpubs/search.php?page=journal&pos=1&jid=188)*, 43* 6) (pp. 1643-1647).
16. Leandro, L.F.S., L. M. Ferguson, F. J. Louws, and G. E. Fernandez. 2007. Strawberry growth and productivity in fumigated compared to compost-amended production systems. HortSci. 42:227-231. (Author order is from most significant to least, but program director is last).
17. Leandro, L.F.S., T. Guzman, L.M. Ferguson, G.E. Fernandez, and F.J. Louws. 2007. Population dynamics of trichoderma in fumigated and compost-amended soil and on strawberry roots. Applied Soil Ecology. 35: 237-246.
18. Sydorovych, O., C.D. Safley, L.M. Ferguson, E.B. Poling, G.E. Fernandez, P.M. Brannen, D.L. Monks and F.J. Louws. 2006. Economic evaluation of methyl bromide alternatives for the production of strawberries in the southeastern United States. Hort Tech. 16: 118-128.
19. Safley, C., O. Boldea, and G. Fernandez. 2006. Estimated costs of producing, harvesting, and marketing blackberries in the Southeastern United States. Hort Tech. 16: 109-117 (Author order is from most significant to least, but program director is last).
20. Butler, L.M., G.E. Fernandez, and F.J. Louws. 2002. Strawberry plant growth parameters and yield among transplants of different types and from different geographic sources, grown in a plasticulture system. HortTechnology. Vol. 12: 6-9.
21. Fernandez, G.E., L.M. Butler, and F.J. Louws. 2001. Strawberry growth and development in a plasticulture system. HortScience. Vol. 36: 100-103.
22. Fernandez, G.E. 2001. Fall-applied row covers enhance yield in plasticulture strawberries. HortTechnology. 11:440-444.
23. Fernandez, G.E. and M.P. Pritts. 1996. Carbon supply reduction has a minimal influence on current year’s red raspberry (*Rubus idaeus* L.) Fruit production. J. Amer. Soc. Hort. Sci. 121:473-477.
24. Fernandez, G.E. and M.P. Pritts.1994. Growth, carbon acquisition and source-sink relationships in ‘Titan’ red raspberry. J. Amer. Soc. Hort. Sci. 119:1163-1168.
25. Clark, J.R., K. Irvine and G.E. Fernandez. 1993. Effects of gibberellic acid on seed traces of 'Venus' and 'Saturn' grapes. J. Small Fruit and Vit. 2:11-19.
26. Patten, K., E. Neuendorff, G. Nimr, J.R. Clark and G. Fernandez. 1991. Cold injury of southern blueberries as a function of germplasm and season of flower bud development. HortScience 26: 18-20.
27. Fernandez, G.E., J.R. Clark and J.N. Moore. 1991. Effect of seed coat manipulation on the germination of stenospermocarpic grape embryos cultured *in ovulo*. HortScience 26: 1220.
28. Fernandez, G.E. and J.R. Clark. 1991. *In vitro* propagation of the erect thornless blackberry ‘Navaho’. HortScience 26: 1219.

**Acta Hort Proceedings**

1. Bradish, C.M., E. Overbaugh, J. Ballington, G.E. Fernandez, N.V. Bassil. 2016. Comparative diversity analysis of southeastern Rubus germplasm through molecular and pedigree techniques. Acta Hort. 1127:157-161.
2. Bradish, C.M., G.E. Fernandez, J.M. Bushakra, P. Perkins-Veazie, M. Dossett, N.V. Bassil, C.E. Finn. 2016. Evaluation of vigor and winter hardiness of black raspberry breeding populations (Rubus occidentalis) grown in the southeastern US. Acta Hort. 1133:129-134.
3. Perkins-Veazie, P., G. Ma, G.E. Fernandez, C.M. Bradish, J.M. Bushakra, N.V. Bassil, C.A. Weber, J.C. Scheerens, L. Robbins, C.E. Finn, M. Dossett. 2016. Black raspberry fruit composition over two years from seedling populations grown at four US geographic locations. Acta Hort. 1133:335-338.
4. Bradish, C.M., J.M. Bushakra, M. Dossett, N.V. Bassil, C.E. Finn, G.E. Fernandez. 2016. Genotyping and phenotyping heat tolerance in black raspberry (Rubus occidentalis L.). Acta Hort. 1127:321-324.
5. Kim, M.J., P. Perkins-Veazie, G.E. Fernandez. 2016. Phenolic compounds and antioxidant capacity of organically grown fresh market blackberries. Acta Hort. 1133:353-356.
6. Bassil, N., B. Gilmore, K. Hummer, M. Dossett, T. Mockler, S. Filichkin, M. Peterson, C. Finn, J. Lee, G. Fernandez, P. Perkins-Veazie, C. Weber, R. Agunga, E Rhodes, J.C. Scheerens, K. Lewers, J. Graham, F. Fernández-Fernández and S.J. Yun. 2014. Genetic and Genomic Resources in Black Raspberry. Acta Hort. 1048:19-24.
7. Fernandez, G.E. and P. Perkins-Veazie. 2013. Yield and post harvest attributes of caneberries grown under high tunnels and in the open field in North Carolina. Acta Hort. 987: 89-98.
8. Ballington, J.R. and G.E. Fernandez. 2008. *Rubus* breeding for the Southeastern United States. Acta Hort. 777:87-90.
9. Fernandez, G.E. and M.P. Pritts. 1993. Growth and source-sink relationships in ‘Titan’ red raspberry. Acta Hort. 352:151-157.
10. Martin, R., I. Tzanetakis, R. Gergerich, G. Fernandez and Z. Pesic. 2004. Blackberry yellow vein associated virus: A new crinivirus found in blackberry. Acta Hort. 656:137-142.
11. Fernandez, G. E. and J.R. Ballington. 2003. Double cropping of strawberries in an annual system using conditioned plug plants and high tunnels. Acta Hort. 614:547-552.
12. Fernandez, G.E. and M.P. Pritts. 1993. Growth and source-sink relationships in ‘Titan’ red raspberry. Acta Hort. 352:151-157.

**Patents**

* ‘Nantahala’ primocane fruiting red raspberry. Gina Fernandez and James R. Ballington. USPP #20689. Released 2007.
* ‘Von’ thornless floricane fruiting blackberry. US Patent PP27,299. 2016. Released 2012.
* ‘Liz’ NCS 10-038 Strawberry. Plant patent to be filed fall 2019. Released 2018.
* ‘Rocco’ NCS 10-156 Strawberry. Plant patent to be filed fall 2019. Released 2018.

**Book/Chapters**

* Fernandez, Gina; Hummer, Kim (eds). 2016. Proceedings of the XI International Rubus and Ribes Symposium. ISHS. 526 pg.
* Fernandez, Gina, Molina-Bravo, R. and F. Takeda. 2018. What we know about heat tolerance in *Rubus*. In Raspberry. Breeding, Challenges and Advances. Springer.
* Molina Bravo, R., M.L. Worthington, G.E. Fernandez. 2019. Advances and challenges in raspberry and blackberry breeding. In: Achieving sustainable cultivation of temperate zone tree fruits and berries. Vol. 2. Chap 27. Burleigh Dodds Science Press.

**Grants, Gifts and Contracts**

**Total $3,337,742/ to Gina Fernandez $1,428,640**

* Breeding Flavorful Disease Resistant Strawberry Cultivars. 01/01/2020 - 12/31/2021, NC Department of Agriculture & Consumer Services. $105,609.00/$105,609.
* Screening strawberries for resistance to Anthracnose crown (*Colletotrichum gloeosporioides*) and fruit rot (*C. acutatum*). Fernandez, Gina E., F. Louws, T. Adhikari. 2019 Southern Region Small Fruit Consortium. $5,000/ $5,000.
* Seasonal variation in blackberry nutrient concentration of primocane and floricane leaves in Prime-Ark® 45 and Traveler in double and single cropping systems. Fernandez, G. 2019. Southern Region Small Fruit Consortium. $5,000/$5000.
* Bi-Lingual Demonstration Videos for Strawberry and Blackberry Production in the SE United States. McWhirt, A. Fernandez, Lee and Garcia. 2017. Southern Region Small Fruit Consortium. $10,000/0.
* Finding genes that control white and red drupelet disorders in blackberry. Fernandez, Gina E. Ashrafi and R. Aryal. 2018. Southern Region Small Fruit Consortium. $5,000/$5,000.
* The Search for Genes Involved in Hemibiotrophic Resistance to *Colletotrichum gloeosporioides* and *C. acutatum* in Strawberry. Fernandez, Gina E., F Louws, T. Adhikari. 2018. North American Strawberry Growers Research Foundation, Inc. $6,251/$6,251.
* Vitamin C Content and Stability of Strawberry Selections and Varieties Grown in North Carolina from Harvest through Storage. Perkins-Veazie, Penelope, G. Fernandez. 2017. NC Strawberry Association. $6,250.00/$0.
* Integration of Allyl-Isothiocyanate, Steam and Exothermic Compounds for Soil Disinfestation in Strawberry Nurseries. Fernandez, Gina E., F Louws. 2017. University of California - Davis (USDA) - National Institute of Food and Agriculture).$30,000/0.
* Vitamin C Content in Blackberries During Storage Perkins-Veazie, Penelope, G. Fernandez. 2017. North American Bramble Growers Research Foundation, Inc. $2800.
* Development of New Strawberry Varieties Adapted to the North Carolina Plasticutlure System. G. Fernandez, F. Louws, M. Iorizzo. 2015- 2019. NC Strawberry Association. $64,500.00/ $64,500.
* The XIth International Rubus and Ribes Symposium. Fernandez, Gina E. 2015. NC Biotechnology Center $10,000/ $10,000.
* Trialing Advanced Strawberry Selections in the Southern Region of the U. S. Fernandez, G. 2017. Southern Region Small Fruit Consortium. $10,000/$10,000.
* Development of an Ebook for the Caneberry Production Guide. Fernandez, G. 2015. Southern Region Small Fruit Consortium. $5,000/ $5,000.
* Trialing Advanced Strawberry Selections in the Southern Region of the US, Final Year! Fernandez, Gina E. 2015. North American Strawberry Growers Research Foundation, Inc. $23,483/$23,483.
* Breeding Raspberries with Increased Heat Tolerance, Improved Post Harvest Attributes and Resistance to Pests. Fernandez, G., Perkins, P. and H. Burrack. 2014. NC Foundation Seed Producers, Inc. $8,000/$8,000.
* Preparing field plots for the International *Rubus* and *Ribes* Symposium. Fernandez, Gina E.. 2014. Southern Region Small Fruit Consortium. $5,000/$5,000.
* Breeding Raspberries with Increased Heat Tolerance, Improved Post Harvest Attributes and Resistance to Pests. Fernandez, Gina E., Perkins-Veazie, P and H. Burrack. 2014. NC Crop Improvement Association, Inc. $4,000/$4,000.
* Sustainable Soil Management Practices for Strawberries: Diverse Approaches for Facilitating Adoption. Schroeder, Michelle S, Cardoza, Y., G. Fernandez, H. Burrack, A. McWhirt. 2014. Univ. of Arkansas (Walmart Foundation). $103,784.00/$34,594.
* Sustainable Soil Management Practices for Strawberries: Evaluation of Individual and Integrated Approaches. Schroeder, Michelle S, Y. Cardoza, G. Fernandez, H. Burrack. 2013. University of Arkansas - Center for Agricultural and Rural Sustainability (Walmart Foundation). $78,034/$26,011.
* Strawberry Grower Education and Adoption of Research Innovations: Technology Transfer of Production Recommendations. Perkins-Veazie, Penelope, G Fernandez. 2013. University of Arkansas - Center for Agricultural and Rural Sustainability (Walmart Foundation). $158,391/$79,195.
* Can we use long cane raspberries to advance the season of raspberry production in the southern US? Fernandez, Gina E. 2012. Southern Region Small Fruit Consortium. $10,000 $10,000.
* Vermicompost and Mycorrhizal Interactions for Reduction of Spider Mite Populations in Short-Day Strawberry Cultivars. Schroeder, Michelle S, Y. Cardoza, G. Fernandez, H. Burrack. 2012. North American Strawberry Growers. $4,080.
* Breeding Marketable Raspberries for North Carolina. Fernandez, Gina E. 2012. NC Department of Agriculture & Consumer Services (USDA). $80,000/$80,000.
* Color Reversion in fresh market blackberries. Perkins-Veazie, Penelope, G Fernandez. 2012. Southern Region Small Fruit Consortium. $5,000.
* Developing the Genomic Infrastructure for Breeding Improved Black Raspberries. Perkins-Veazie, P., G. Fernandez. 2011. USDA NIFA. $262,297/$131,148.
* Roadmap Development for U.S. Raspberry Producers: Forging Links Between New Tools For Breeding Programs And Crop Markets. Fernandez, Gina E. 2011. Washington State University (USDA). $50,000/0.
* Update the blackberry Diagnostic Tool. Fernandez, G. 2011. Southern Region Small Fruit Consortium. $1,800/$1,800.
* Screening of Raspberry Fruit for Carotenoids: Impact On Flavor And Color? Perkins-Veazie, P., G. Fernandez. 2011. North American Bramble Growers. $2,400.00/0.
* Fostering Strawberry Gardens in Schoolyards. Driscoll, E and G. Fernandez. 2010. Southern Region Small Fruit Consortium. $1,000.00.
* Organic Blackberry Production Systems for Improved Yield, Fruit Quality, and Food Safety in Fresh and Processed Markets. Perkins-Veazie, P., Rejesus, R, O. Rysin, L. Jaykus, G. Fernandez, C. Safely, T. Phister. 2010. Oregon State University (USDA). $529,985/$75,712.
* Postharvest Treatments for Shelf Life Extension and Antioxidant Promotion of Caneberries. Perkins-Veazie, Penelope, G Fernandez. 2010 North American Bramble Growers Research Foundation, Inc. $2,765.00.
* Raspberries: Development of Varieties Adapted to the Southern U.S. For Local Sales and Commercial Shipping. Fernandez, Gina E. B Sosinski, P. Perkins-Veazie. 2010. NC Department of Agriculture & Consumer Services. (USDA). $65,624/$65,624.
* Management of Virus Complexes in Rubus Burrack, Hannah, G Fernandez. 2009. University of Arkansas. (USDA). $157,155/$78,577.
* Post Harvest evaluations of raspberry and blackberry selections for use in tunnels in warm production regions. Perkins-Veazie P and G. Fernandez. 2009. Southern Region Small Fruit Consortium. $5,000/0.
* Thrips Prevalence and Management in Southeastern Blackberries Burrack, Hannah, G Fernandez. 2008. University of Florida. (USDA). $15,000/0.
* Targeting Market Windows for Raspberry and Blackberry Production in Western North Carolina. Fernandez, Gina E. 2008. Golden Leaf Foundation. $50,000/$50,000.
* Development and Implementation of a Text Messaging Service to Enable Greater Distribution of Timely Weather Information to the People of North Carolina. Brooks, Mark S, A. Sims, R. Boyles, B. Shew, G Fernandez. 2007. NCSU University Extension Grant Program. $10,000/0.
* Efficacy of Drip and Shank Applied Fumigants in Single and Double Row Beds of Strawberry. Fernandez, Gina E. F. Louws. 2007. NC Strawberry Association. $500/$500.
* Selecting Cover Crops for Diverse Functions: An Integrated Soil and Pest Management Approach for Organic Strawberry Production in North Carolina. Schroeder, Michelle S, N. Creamer, G. Fernandez. 2007. University of Georgia (USDA). $200,000/$66,667.
* Targeting Market Windows for Rasbperry and Blackberry Production in Western North Carolina. Fernandez, Gina E. 2006. Golden Leaf Foundation. $30,000/$30,000.
* Raspberry Breeding for the southern Region Fernandez, G, Ballington, and Z. Pesic-Van Esbroeck. 2005. Southern Region Small Fruit Consortium. $25,000/$25,000.
* Comparison of runner-tip production among classes of certified nursery stocks of strawberry cultivars. Pesic Van Esbroeck-Z, Ballington, J and G. Fernandez. 2004. Southern Region Small Fruit Consortium. $10,000/0.
* Development of Raspberries Cultivars for the Southeastern United States and Mexico. Fernandez, Gina E. 2007. Dole Berry Company (SunnyRidge Farm). $50,000/$50,000.
* Evaluation of Three Composts for Annual Strawberry Plasticulture Production. Fernandez, Gina E. 2005. NC Strawberry Association. $2,500/$2,500.
* Reinvigoration of the North Carolina Bramble Breeding Program Fernandez, Gina E., J Ballington. 2005. NC Foundation Seed Producers, Inc. $2,000/$2,000.
* Virus study of blackberries at farms in the region. Fernandez, Gina E., Z. Pesic Van Esbroeck. 2004. Southern Region Small Fruit Consortium. $5,000/$5,000.
* Development, Evaluation, and Extension of Integrated Methyl Bromide Transition Strategies in Vegetable and Strawberry Production Systems. Louws, F. D. Monks, G. Fernandez. 2004. (USDA). $347,411/$115,803.
* Development of the Certification Program for Blackberry in North Carolina through Micropropagation, Virus-indexing. Pesic, Z, G. Fernandez, Ballington, James R. 2003 NC Crop Improvement Association, Inc. $1,000.
* The abasement of an emerging epidemic in blackberry. Fernandez, Gina E., Z. Pesic Van Esbroeck. 2003. Southern Region Small Fruit Consortium. $5,000/$5,000.
* Integrated Approaches to Pest Management in Methyl Bromide Dependent Plasticulture Production Systems in Southeastern US. Louws, Frank J., G. Fernandez, Z Pesic-Van Esbroeck, B. Poling, D Sanders. 2002. (USDA). $351,854/$70,370.
* Enhancement of Blueberry Production Through Breeding, Micropropagation, Virus-Indexing and Field Evaluation for Trueness-to-Type Pesic-Van Esbroeck, Z. J Ballington, W. Cline, G. Fernandez. 2001. NC Blueberry Council. $59,810/0.
* Sloan Pre-Tenure Leave Fellowship Program. Fernandez, Gina E. 2001. Alfred P. Sloan Foundation. $25,000.00 + Provost Match Total: $50,000/$50,000.
* Estimated coasts and returns of producing, harvesting and marketing blackberries in the south region of the US. Safely, C and G. Fernandez. 2005. Southern Region Small Fruit Consortium. $3,000.00.
* Integrated Methyl Bromide Transition Strategies in the Southeastern United States. Louws, Frank J., G. Fernandez, Z Pesic-VanEsbroeck, E B Poling, D Sanders. 2000. (USDA). $269,016/$53,803.
* Diagnostic Tool for eastern US blackberries Fernandez, Gina E. 2004. Southern Region Small Fruit Consortium. $2,000/$2,000.
* Development of a Viticultural Research Program in North Carolina Fernandez, Gina E. 1999. NC Grape Council. $15,000/$15,000.
* Establishment of a Viticultural Research Program in North Carolina. Fernandez, Gina E. 1999. NC Grape Council. $14,793/$14,793.
* Alternatives to Methyl Bromide for Production of Plasticulture Strawberries in NC, Phase II: Research Station, On Farm. Fernandez, Gina E., F. Louws. 1999. NCSU Integrated Pest Management Center. $8,150/$8,150.
* Off Season Strawberry Production Using Conditioned Transplants and Protective Culture. Bish, Eric B., G Fernandez. 1999. NC Strawberry Association. $1,200.00
* Off Season Production of Blueberries. Fernandez, Gina E., J R Ballington. 1999. NC Blueberry Council. $3,800/$3,800.
* Alternatives to Methyl Bromide for Production of Plasticulture Strawberries in North Carolina Phase II: Research Station. Fernandez, Gina E., F. Louws. 1997. NC Strawberry Association. $7,500/$7,500.
* Evaluation of Wild Strawberry Germplasm for Heat Tolerance. Fernandez, Gina E. 1997. $5000/$5000.

**Select Extension Agent Training**

* **SRSFC Strawberry Agent training. Savannah GA. Strawberry breeding 101.**
* **Agent training NCCES Annual meeting. MPRU, the best kept secret. 2019.**
* **Agent only Caneberry/Tree fruit pruning. 2019. 2 in-the field training. 25 agents attended.**
* **High tunnel/Blackberry agent training. 2018. SRSFC multistate training for 30 agents from 6 states. Hendersonville NC.**
* Small fruit cultivars. 2017. **SRSFC multistate training for 30 agents from 5 states. Raspberry cultivar recommendations. Savannah GA.**
* NCSU Agent Training Annual Extension Conference. 2017. Small Fruit pruning.

**Selected Extension Publications**

* Southeast Caneberry Production Guide. NCCES/Southern Region Small Fruit Consortium. 2016. Gina E. Fernandez, Elena Garcia and David Lockwood. <https://rubus.ces.ncsu.edu/spotlight/caneberry-production-guide/>.
* Sustainable Practices for Plasticulture Strawberry Production in the Southeast. 2015. Amanda McWhirt, Dr. Gina Fernandez and Dr. Michelle Schroeder-Moreno. <http://content.ces.ncsu.edu/sustainable-practices-for-plasticulture-strawberry-production-in-the-southeast/#section_heading_4750>.
* Extension Master Gardener Handbook. Small Fruit chapter co-author. https://content.ces.ncsu.edu/extension-gardener-handbook/14-small-fruits.
* Teach from the Garden: Strawberries. 2013. Publication Number: 4H-527 Job Number: 13-CALS-3373. ftp://ftp.soil.ncsu.edu/Driscoll/strawberryproject/.
* Blackberries for the home garden. 2011. <http://www.ces.ncsu.edu/hil/pdf/blackberries.pdf> (Revised in 2019).
* Fernandez G. Southeast Regional Brambles Integrated Management Guide. <http://www.smallfruits.org/SmallFruitsRegGuide/Guides/2016/2016BrambleSprayGuide.pdf>
* Social Media
	+ Twitter: @NCteamrubus
	+ Blog: <http://teamrubus.blogspot.com/>
	+ Facebook: TeamRubus
* Web Portals <http://rubus.ces.ncsu.edu/>, <http://strawberries.ces.ncsu.edu>.
* Co-author, Quarterly Seasonal Caneberry Chores for SRSFC and NARBA, 2006-present.

**Select Extension Talks Past 5 years (Invited speaker)**

* **In the past 5 years, I have given over 75 talks to grower organizations in NC, the region, nationally and internationally reaching at least 1000 people each year.**
* Modifying cane architecture of blackberry with prohexidione calcium. 2019. Southeast Regional Fruit and Vegetable Conference. Savannah GA (100 attendees), and 14th Annual Caneberry Production Workshop Woodburn OR. (150 attendees)
* Seasonal Changes in blackberry leaf nutrients. 2019. Southeast Regional Fruit and Vegetable Conference. Savannah GA and NC Commercial Blackberry and Raspberry Association Annual meeting (70 attendees)
* Mystery Crop Loss in primocane fruiting blackberry. 2019. Southeast regional Fruit and vegetable conference. Savannah GA. (80 attendees)
* On farm trials of advanced strawberry breeding lines. 2019. Southeast regional Fruit and vegetable conference. Savannah GA. (80 attendees)
* Rocco and Liz, two new strawberries for SE growers. 2019. SC Strawberry Growers meeting. (60 attendees)
* Night harvest of blackberry. 2018. Southeast regional Fruit and vegetable conference Savannah GA (150 attendees) and NC Commercial Blackberry and Raspberry Association Annual meeting, Shelby NC (100 attendees) and North American Raspberry and Blackberry Association Annual meeting, Ventura CA. (150 attendees)
* Drupes and Genes. 2018. Southeast regional Fruit and vegetable conference. Savannah GA (80 attendees) and North American Raspberry and Blackberry Association Annual meeting, Ventura CA (50 attendees)
* Strawberry Breeding and Future Direction at NCSU. 2018. Southeast regional Fruit and vegetable conference. Savannah GA (75 attendees)
* Blackberry harvest prediction. 2018. Southeast regional Fruit and vegetable conference. Savannah GA (60 attendees)
* Raspberries for the south. Great Plains conference. Jan 2018. (remote via Zoom)
* Blackberry cane management. 2018. Mountain Apple Conference. (60 attendees)
* Strawberry Breeding and Future Direction at NCSU. 2018. Mid Atlantic berry growers meeting. Feb. Virginia Beach VA. (200 attendees)
* Blackberry harvest prediction. 2018. NARBA annual conference. Ventura CA. (100 attendees)
* Strawberry breeding update. 2018. SE Strawberry EXPO. (80 attendees)
* Managing PF blackberries and NCSU Strawberry Breeding Program. 2017. SE Regional Fruit and Vegetable conference. (75 attendees)
* It's been a crazy year for Caneberries. SE Regional Fruit and Vegetable Conference. 2017. (100 participants)
* RNAseq, Caneberry Resources and and Upcoming Trials. 2017. NC Commercial Blackberry and Raspberry Association. 2017. (90 attendees)
* Blackberry Production A to Z. Virginia Berry Conference, Virginia State University. 2017 (remote via Zoom)
* Strawberry Breeding Program update. SE Strawberry Expo. 2017. (150 attendees)
* Strawberry Breeding Program update. GA Strawberry Growers Association. 2017. (remote via Zoom)
* XI International Rubus Ribes Symposium, things I learned that you should know. 2016
NC Commercial Blackberry and Raspberry Association (80 attendees)
* Back to Basics: Caneberry Growth through the Year. 2016. SE Regional Fruit and Vegetable Conference Savannah, GA. (200 attendees)
* Fundamentals of Caneberry Production2016. North American Raspberry and Blackberry Association. Williamsburg, VA. (150 attendees)
* Variety Selection for Southern Climates. 2016. North American Raspberry and Blackberry Association. Williamsburg, VA. (100 attendees)
* Invited presentations 1996-2015. 5-15 per year at county, state and national grower meetings.

**Outreach to Local Schools/Service**

* Athens Drive High School Scholarship Award Committee, 2014, 2015, 2016.
* Caneberry Breeding: Traditional Approach and beyond. NCSU Stem HS. 2013/ 2014.
* Swift Creek Elementary School. Assist with strawberry garden for 2nd/ 3rd graders since 2009. Oak Grove Elementary, 2011-2019, most years. (Provide plants and technical help as needed). Both are Wake Co. schools.
* Summer internship for HS teacher to complete her M.E. Evelyn Baldwin. 2013. SSR fingerprinting study of *Rubus*.
* Strawberries in Schools Teacher Training. 2012 and 2013. The Schoolyard Strawberry Project. Trained 25 teachers at Piedmont and Cherry Farm Research Stations. Sponsored by Farm Bureau, NCCES and NC Strawberry Association.