

Fruit Team FY2017

Team Members (directly reporting outputs):

Professional Staff

Sonia Schloemann, (SGS) MS, Extension Educator, Small Fruit and Viticulture, Fruit Team Leader, State SARE Coordinator

Jon Clements, (JMC) MS, Extension Educator, Tree Fruit, Integrated Orchard Management

Arthur Tuttle, (AFT) MS, Research Associate, Stockbridge School of Agriculture

Katherine M. Ghantous (KMG) PhD, Research Assistant, UMass Cranberry Station

Angela M. Madeiras, (AM), PhD, Extension Educator, Plant Diagnostic Clinic Specialist

Faculty

Wesley Autio, (WRA) PhD., Professor and Director Stockbridge School of Agriculture

Duane Greene, (DWG) PhD., Professor Stockbridge School of Agriculture, Director of UMass Cold Spring Orchard Research & Education Center

Daniel Cooley, (DRC) PhD., Professor Stockbridge School of Agriculture

Hilary Sandler, (HAS) PhD., Extension Faculty, Weed Specialist, Cranberry Specialist, State IPM Coordinator

Elsa Petit, (EP) PhD., Lecturer Stockbridge School of Agriculture, Viticulture Specialist

Graduate Students

Elizabeth Garofalo, (EWG) BS, Field Technician, Stockbridge School of Agriculture

UMass Cold Spring Orchard Staff

Shawn McIntire, (SM) Farm Superintendent, UMass Cold Spring Orchard Research & Education Center

Kristin Hanley, (KMH) Technical Assistant, UMass Cold Spring Orchard Research & Education Center

James Cronk, (JC) Technical Assistant, UMass Cold Spring Orchard Research & Education Center

James Krupa, (JK) Technical Assistant, UMass Cold Spring Orchard Research & Education Center

Jacob Aliengena, (JA) Technical Assistant, UMass Cold Spring Orchard Research & Education Center

Description of Plan:

Fruit farms and vineyards provide open space and scenic vistas that add significantly to the quality of life in Massachusetts. The lands surrounding agricultural production provide buffer zones for native species of plants and animals and corridors for their movement or expansion. To remain a vital part of the Massachusetts economy, both new and established growers must learn to produce crops sustainably and to adapt production systems to market opportunities. New varieties provide fruit farmers with opportunities for enhancing production, quality, sales and consumption. UMass Extension provides farmers with access to current research information on new and alternative species and varieties, advanced horticultural management techniques, marketing and business management strategies, pest-ecology, and pest-management procedures. Research on pest ecology and management informs approaches that optimize control, reduce chemical use and increase fruit quality. The knowledge and resources provided by Extension forge successful partnerships with Massachusetts's fruit producers that in turn foster a more secure, diverse and healthful food supply for the Commonwealth.

Situation & Priorities:

- **Integrated Pest Management** - the fruit program delivers current IPM information and training via publications, newsletters, twilight meetings, educational programs, and other outputs.
- **Economically Viable Food Production** - the fruit program helps growers achieve more economically viable production practices by presenting research based information on new production practices, new crops or varieties, season extension practices, etc. via publications, newsletters, twilight meetings, educational programs, and other outputs.
- **Environmentally Sustainable Food Production** - the small fruit program delivers information and training in environmentally sustainable production practices (beyond IPM), with particular attention to organic practices, via publications, newsletters, twilight meetings, educational programs, and other outputs.
- **Safe, local food** - the small fruit program delivers information and training in food safety, including for Good Agricultural Practices (GAP) certification, via publications, newsletters, twilight meetings, educational programs, and other outputs.

Stakeholder Input

The UMass Fruit Team has a long and valued research and education relationship with industry partners, through the Massachusetts Fruit Growers' Association, New England Vegetable and Berry Growers Association, Massachusetts Farm Winery and Growers Association, and other clients and growers. Ongoing communication (via meetings, grower visits, etc.,) with these partners is a valuable feedback tool to help plan research and education programs.

Evaluation Overview

Evaluations are conducted during twilight meetings for pesticide credit. A year-end program survey is conducted to evaluate program outputs and assess impacts. In addition, we will rely on observations and communication with growers.

Program Goals

Learning Outcome: Participants develop knowledge and skills that ensure the economic viability of Food Production

Learning Outcome: Participants develop knowledge and skills that ensure the environmental sustainability of Food Production

Action Outcome: Participants adopt practices that ensure the economic viability of Food Production

Action Outcome: Participants adopt practices that ensure the environmental sustainability of Food Production

OUTPUTS:
PUBLICATIONS

GUIDES, NEWSLETTERS, FACT SHEETS	Number /Issues	Circulation/ Subscriptions
GUIDES		
2017 New England Tree Fruit Management Guide (JMC, DRC, DWG, ARB) http://ag.umass.edu/fruit/new-england-tree-fruit-management-guide J. M. Clements - General Editor - updates published and posted online	1	Online access – 1,484+ page-views
2017-18 New England Small Fruit Pest Management Guide (SGS, HAS) https://ag.umass.edu/fruit/ne-small-fruit-management-guide S. G. Schloemann - General Editor - updates published and posted online	1	Online access – 1,668+ page-views Printed – 900
2017 Eco Apple Protocol. v. 2.1. (DRC, JMC, AFT) https://ipminstitute.org/wp-content/uploads/2017/04/Red-Tomato-Core-Eco-Protocol-v-2_1-032817.pdf D. R. Cooley – Contributor and Reviewer J. M. Clements – Contributor and Reviewer A. F. Tuttle – Contributor and Reviewer	1	100
2017 Eco Apple Supplement, v. 2.4 IPM Institute of North America (DRC, JMC, AFT) https://ipminstitute.org/wp-content/uploads/2017/04/Red-Tomato-Eco-Apple-Supplement-v2_4-032817.pdf D. R. Cooley – Contributor and Reviewer J. M. Clements – Contributor and Reviewer A. F. Tuttle – Contributor and Reviewer	1	100
2017 Eco-Stone Fruit Protocol. v. 2.0. IPM Institute of North America (DRC, JMC, AFT) https://ipminstitute.org/wp-content/uploads/2017/04/Eco-Stone-Fruit-Supplement-v2_0-032817.pdf D. R. Cooley - Contributor and Reviewer J. M. Clements - Contributor and Reviewer A. F. Tuttle - Contributor and Reviewer	1	100

2017 Eco Apple Quick Guide, v. 9.9 IPM Institute of North America (DRC, JMC, AFT) https://ipminstitute.org/wp-content/uploads/2017/04/Eco-Apple-Quick-Guide-v9_9-032817.pdf D. R. Cooley - Contributor and Reviewer J. M. Clements - Contributor and Reviewer A. F. Tuttle - Contributor and Reviewer	1	100
TOTAL: 4,300		

NEWSLETTERS, ALERTS AND QUARTERLIES produced by Fruit Team members	Number /Issues	Circulation/ Subscriptions
<i>Berry Notes (SGS)</i> https://ag.umass.edu/fruit/berry-notes-archive	12	456
<i>Cranberry Station Newsletter</i> https://ag.umass.edu/cranberry/newsletters	5	234
<i>Fruit Notes (WRA)</i> https://ag.umass.edu/fruit/publications/fruit-notes	4	150
<i>Grape Notes/Northern Grapes Project (SGS)</i> https://ag.umass.edu/fruit/grape-notes http://northerngrapesproject.org/newsletters http://grapesandwine.cals.cornell.edu/newsletters/veraison-harvest	23	146
<i>Healthy Fruit alerts (JMC)</i> https://ag.umass.edu/fruit/healthy-fruit-archive	22	188
<i>Healthy Fruit Newsletter (JMC)</i> https://ag.umass.edu/fruit/publications/healthy-fruit	20	188
<i>IPM Berry Blast (SGS)</i> https://ag.umass.edu/fruit/ipm-berry-blast	14	456
Total	100	1,818

FACT SHEETS	Circulation/ Subscriptions
Blueberry IPM – Mummy Berry Disease (AMM, SGS) http://ag.umass.edu/fruit/fact-sheets/blueberry-ipm-mummy-berry Blueberry IPM – Withes’ Broom (AMM, SGS) http://ag.umass.edu/fruit/fact-sheets/blueberry-ipm-witches-broom Crop Load Guide For Young Apple Trees (JMC) http://ag.umass.edu/fruit/fact-sheets/crop-load-guide-for-young-apple-trees F-140 Branching Young Apple Trees with Plant Growth Regulators (WJC, JMC, WRA) http://ag.umass.edu/fruit/fact-sheets/f-140-branching-young-apple-trees-with-plant-growth-regulators Raspberry IPM - Anthracnose (AMM, SGS) http://ag.umass.edu/fruit/fact-sheets/raspberry-ipm-anthracnose Raspberry IPM – Cane Blight (AMM, SGS) http://ag.umass.edu/fruit/fact-sheets/raspberry-ipm-cane-blight Raspberry IPM – Spur Blight (AMM, SGS) http://ag.umass.edu/fruit/fact-sheets/raspberry-ipm-spur-blight Winter Moth in New England Fruit Crops (SGS) http://ag.umass.edu/fruit/fact-sheets/winter-moth-in-new-england-fruit-crops	Online only 2,670 total page views of Fruit Team Fact Sheets in FY17

REPORTS/ARTICLES/PAPERS

Articles in Refereed and Un-refereed Professional Publications:

Autio, W. R., J. S. Krupa, and J. M. Clements. 2017. *Performance of Honeycrisp apple trees on several Budagovsky, Cornell-Geneva, and Pillnitz rootstocks, An update on the Massachusetts planting of the 2010 NC-140 Apple Rootstock Trial.* Horticultural News 97(2):1-4.

Autio, W. R., J. S. Krupa, and J. M. Clements. 2017. *Rootstock influence on Redhaven peach performance, An update on the Massachusetts planting of the 2009 NC-140 Peach Rootstock Trial.* Horticultural News 97(2):6-8.

Autio, W. R., J. S. Krupa, J. M. Clements and W. P. Cowgill. 2017. *Rootstock Influence on Redhaven Peach Performance – an update on the Massachusetts planting of the 2009 NC-140 Peach Rootstock Trial.* Fruit Notes Vol. 82, No. 2. pp 6-8.

Autio, W. R., T. Robinson, B. Black, R. Crassweller, E. Fallahi, M. Parker, R Parra Quezada, and D. Wolfe. 2017. *Budagovsky, Geneva, Pillnitz, and Malling apple rootstocks affect Fuji performance of the first five years of the 2010 NC-140 Fuji Apple Rootstock Trial.* J. Amer. Pomological Soc. 71(3):167-182.

Autio, W. R., T. Robinson, B. Black, R. Crassweller, E. Fallahi, M. Parker, R. Parra Quezada, and D. Wolfe. 2017. *2016 Progress Report -- Budagovsky, Geneva, Pillnitz, and Malling apple rootstocks affect Fuji performance over the first six years of the 2010 NC-140 Fuji Apple Rootstock Trial.* Compact Fruit Tree. 50(1):20-23.

Autio, W. R., T. Robinson, B. Black, S. Blatt, D. Cochran, W. Cowgill, C. Hampson, E. Hoover, G. Lang, D. Miller, I. Minas, R Parra Quezada, and M. Stasiak. 2017. *Budagovsky, Geneva, Pillnitz, and Malling apple rootstocks affect Honeycrisp performance of the first five years of the 2010 NC-140 Honeycrisp Apple Rootstock Trial.* J. Amer. Pomological Soc. 71(3):149-166.

Autio, W. R., T. Robinson, S. Blatt, D. Cochran, W. Cowgill, C. Hampson, E. Hoover, G. Lang, R. Parra Quezada, and M. Stasiak. 2017. *Budagovsky, Geneva, Pillnitz, and Malling apple rootstocks affect Honeycrisp performance over the first six years of the 2010 NC-140 Honeycrisp Apple Rootstock Trial.* Compact Fruit Tree. In press.

Autio, W. R., J. S. Krupa, J. M. Clements and W. P. Cowgill. 2017. *Performance of Honeycrisp Apple Trees on Several Budagovsky, Cornell-Geneva, and Pillnitz Rootstocks – an update on the Massachusetts planting of the 2010 NC-140 Apple Rootstock Trial.* Fruit Notes Vol. 82, No. 2. pp 1-4.

Clements, J. M., 2017. *Precision Thinning and Predicting-Fruit-Set Demonstrations.* Fruit Notes Vol. 82, No. 1. pp 1-5.

Clements, J. M., 2016. *MyIPM Apps – alphabet soup or what?* Great Lakes Fruit Workers Proceedings. https://greatlakesfruitworkers.weebly.com/uploads/9/3/1/2/9312881/2016_glfw_proceedings.pdf Pp. 39-40

Cooley, D. R., A. F. Tuttle, J. M. Clements, S. G. Schloemann, E. W. Garofalo. 2016 *University of Massachusetts Amherst Fruit IPM Report for 2016.* Fruit Notes Vol. 81, No. 4. pp 21-24.

Cowgill, W. P., **J. M. Clements, and W. R. Autio.** 2017. *Branching young apple trees with plant growth regulators.* Horticultural News 97(3):6-10.

Cowgill, W. P., **J. M. Clements, and W. R. Autio.** 2017. *Training and pruning apples, the basics.* Horticultural News 97(1):8-14.

Cowgill, W. P., **J. M. Clements, W. R. Autio.** 2017. *Training and Pruning Apples, the Basics.* Fruit Notes Vol. 82, No. 1. pp 8-14.

Cowgill, W. P., **J. M. Clements, W. R. Autio.** 2017. *Branching Young Apple Trees with Plant Growth Regulators.* Fruit Notes Vol. 82, No. 3. pp 6-10.

Cowgill, W. P., R. Magron, and **W. R. Autio.** 2016. *Raynox Plus, for the control of sunburn on apples.* Fruit Notes 81(4):1-5. Horticultural News 96(4):1-5.

Cowgill, W. P., R. Magron, **W. R. Autio,** 2016. *Raynox Plus, for the Control of Sunburn on Apples.* Fruit Notes Vol. 81, No. 4. pp 1-5.

Cowgill, W.P. Jr., **W.R. Autio,** E.E. Hoover, R.P. Marini, and P.A. Domoto. 2017. *NC-140 Multi-State Research Project: Improving economic and environmental sustainability in tree-fruit production through changes in rootstock use.* J. Amer. Pomological Soc. 71(1):34-46.

Ghantous, K.M. and H.A. Sandler. *Evaluation of pre-and postemergence herbicides for dodder management in*

cranberry. "Acta Horticulturae". (Accepted)
Greene, D. W. 2017. <i>Fruit thinning guided by physiological principals</i> . Acta Horticulturae (Accepted)
Greene, D. W. , A. J. Crovetti, and J. Pienaar. 2016. <i>Development of 6-benzyladenine as a chemical thinner</i> . HortScience 51: 1448-1451.
Greene, D. W., J. M. Clements. 2016 <i>An Autopsy of the 2016 Growing Season</i> . Fruit Notes Vol. 81, No. 4. pp 7-10.
Greene, D. W., J. M. Clements. 2016 <i>An Autopsy of the 2016 Growing Season</i> . Lake Ontario Fruit Program Proceedings, 16(20): 6-9.
McArtney, S., D. W. Greene and T. Schmidt. 2017. <i>Postharvest growth of the king bloom in apple buds</i> . Acta Horticulturae (Accepted)
Musacchi, S. and D. W. Greene. 2017. <i>Innovations in apple tree cultivation to manage crop load and ripening</i> 195-237 p. In K. Evans (Ed) <i>Achieving sustainable cultivation of apples</i> . Burleigh and Dodds Pub, London.
Petit, E., et al. 2017. <i>Cooccurrence and hybridization of anther smut pathogens specialized on Dianthus hosts</i> . Molecular Ecology, 2017; 26 (7): 1877-1890.
Horns, F., Petit, E. , Hood, M.E. <i>Massive Expansion of Gypsy-Like Retrotransposons in Microbotryum Fungi</i> . Genome biology and evolution, 2017; 9 (2): 363-371
Robinson, T. L., A. N. Lakso and D. W. Greene. 2017. <i>Precision crop load management: Practical implications of physiological models</i> . Acta Horticulturae (Accepted)
Sandler, H.A. <i>Repeated applications of mesotrione and napropamide on new cranberry plantings</i> . Weed Technology. (Accepted)
Sarkar, D., C. Ankolekar, D. Greene and K. Shetty. 2017. <i>Natural preservative for superficial scald reduction and enhancement of protective phenolic-linked antioxidant responses in apple during postharvest storage</i> . Postharvest Biology and Technology (Submitted)
Tjiurutue, M.C., H.A. Sandler , M.F. Kersch-Becker, N. Theis, and L.S. Adler. 2016. <i>Cranberry resistance to dodder parasitism: induced chemical defenses and behavior of a parasitic plant</i> . J. Chem. Ecol. 42(2):95-106.
Tjiurutue, M.C., H.A. Sandler , M.F. Kersch-Becker, N. Theis, and L.S. Adler. 2017. <i>Gypsy moth herbivory induced volatiles and reduced parasite attachment to cranberry hosts</i> . Oecologia 185:133- 145
Zeng, Q., D. R. Cooley, E. W. Garofalo , et al. 2017. <i>Comparative genomics of Spiraeoideae-infecting Erwinia amylovora strains revealed higher genetic diversity and suggested an origin of global dispersal</i> . Molecular Plant Pathology. (Accepted)
Articles in Newsletters or Trade Publications:
Clements, J. M. , <i>The Way I see it</i> . Healthy Fruit, Vol, 25. No. 1
Clements, J. M. , <i>Horticulture Update</i> . Healthy Fruit, Vol, 25. No. 1
Clements, J. M., D. R. Cooley. <i>Apple Orchard Management Decisions in 2017: Take Advantage of Technology</i> . Healthy Fruit, Vol, 25. No. 1
Clements, J. M. , <i>The Way I see it</i> . Healthy Fruit, Vol, 25. No. 2
Clements, J. M. , <i>The Way I see it</i> . Healthy Fruit, Vol, 25. No. 3
Clements, J. M. , <i>The Way I see it</i> . Healthy Fruit, Vol, 25. No. 4
Clements, J. M. , <i>Horticulture Update</i> . Healthy Fruit, Vol, 25. No. 4
Clements, J. M. , <i>The Way I see it</i> . Healthy Fruit, Vol, 25. No. 5
Clements, J. M. E. W. Garofalo , <i>Insect Update</i> Healthy Fruit, Vol, 25. No. 5
Clements, J. M. , <i>The Way I see it</i> . Healthy Fruit, Vol, 25. No. 6
Clements, J. M. , <i>Insect Update</i> . Healthy Fruit, Vol, 25. No. 6
Clements, J. M. , <i>The Way I see it</i> . Healthy Fruit, Vol, 25. No. 7
Clements, J. M. , <i>Insect Update</i> . Healthy Fruit, Vol, 25. No. 8
Clements, J. M., D. W. Greene , <i>Horticulture Update; Early Suggestions for Chemically Thinning Apples</i> . Healthy Fruit,

Vol, 25. No. 8

- Clements, J. M.**, *Horticulture Update*. Healthy Fruit, Vol, 25. No. 9
- Clements, J. M., D. W. Greene**, *Horticulture Update*. Healthy Fruit, Vol, 25. No. 10
- Clements, J. M.**, *The Way I See it*. Healthy Fruit, Vol, 25. No. 11
- Clements, J. M.**, *Horticulture Update*. Healthy Fruit, Vol, 25. No. 11
- Clements, J. M.**, *The Way I See it*. Healthy Fruit, Vol, 25. No. 12
- Clements, J. M.**, *Horticulture Update*. Healthy Fruit, Vol, 25. No. 12
- Clements, J. M.**, *The Way I See it*. Healthy Fruit, Vol, 25. No. 12\3
- Cooley, D. R.**, *Is There a Downside to Urea?* Healthy Fruit, Vol, 25. No. 1
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 2
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 3
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 4
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 5
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 6
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 8
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 9
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 10
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 11
- Cooley, D. R.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 12
- Garofalo, E. W.**, *Insect Update*. Healthy Fruit, Vol, 25. No. 1
- Garofalo, E. W.**, *Observations on Burr Knots, Pollinators and Drought*. Healthy Fruit, Vol, 25. No. 6
- Garofalo, E. W.**, *Insect Update*. Healthy Fruit, Vol, 25. No. 7
- Garofalo, E. W.**, *Disease Update*. Healthy Fruit, Vol, 25. No. 7
- Garofalo, E. W.**, *Insect Update*. Healthy Fruit, Vol, 25. No. 9
- Garofalo, E. W.**, *Insect Update*. Healthy Fruit, Vol, 25. No. 11
- Garofalo, E. W.**, *Insect Update*. Healthy Fruit, Vol, 25. No. 12
- Garofalo, E. W.**, *Insect Update*. Healthy Fruit, Vol, 25. No. 13
- Greene, D. W.**, *Recommendations for early chemical thinning*. Healthy Fruit, Vol, 25. No. 5
- Greene, D. W.**, *Chemical Thinning Dilemma Under Challenging Environmental Conditions*, Healthy Fruit, Vol, 25. No. 6
- Greene, D. W.**, *Chemical Thinning Thoughts and Suggestions*. Healthy Fruit, Vol, 25. No. 7
- Clements, J. and D. W. Greene**. 2017. *Early suggestions for chemically thinning apples in 2017*. Healthy Fruit 25. No. 8
- Greene, D. W.** 2017. *Chemically thinning of apples remains possible*. Healthy Fruit 25. No. 10
- Greene, D. W.**, 2017. *Suggestions for the use of preharvest drop control compounds for McIntosh, Gala and Honeycrisp*. Healthy Fruit 25. No. 16
- Greene, D. W. and J. Clements**. 2016. *An autopsy of the 2016 growing season*. Scaffolds 25:(24); 4-8
- Schloemann, S. G.**, *Winter Mulch for Strawberries*. Massachusetts Berry Notes. Vol 28. No 11. pp 2-3
- Schloemann, S. G.**, *Additional Strawberry Variety Notes*. Massachusetts Berry Notes. Vol 29, No1. pp 5
- Schloemann, S. G.**, *Additional Bramble Variety Notes*. Massachusetts Berry Notes. Vol. 29, No 1., pp 10-11
- Schloemann, S. G.**, *Additional Blueberry Variety Notes*. Massachusetts Berry Notes. Vol. 29, No 1, pp 13

- Schloemann, S. G.**, *Additional Resources for Cold Climate Grape Cultivar Descriptions*. Vol 29, No 1, pp 14
- Schloemann, S. G.**, *Winter Injury to Strawberry Crowns*. Massachusetts Berry Notes. Vol 29, No 2, pp 2
- Schloemann, S. G.**, *Pruning Brambles*. Massachusetts Berry Notes. Vol 29, No 2, pp 5-6
- Schloemann, S. G.**, *Pruning Blueberries*. Massachusetts Berry Notes. Vol 29, No 2, pp 6-7
- Schloemann, S. G.**, *Winter Mulch Removal in Strawberries*. Massachusetts Berry Notes. Vol 29. No 3. pp 2
- Schloemann, S. G.**, *Spring Strawberry Chores*. Massachusetts Berry Notes. Vol 29. No 4. pp 2-3
- Schloemann, S. G.**, *Spring Bramble Chores*. Massachusetts Berry Notes. Vol 29. No 4. pp 3
- Schloemann, S. G.**, *Spring Blueberry Chores*. Massachusetts Berry Notes. Vol 29. No 4. pp 3-4
- Schloemann, S. G.**, *Tarnished Plant Bug in Strawberry*. Massachusetts Berry Notes. Vol 29. No 5. pp 8-9
- Schloemann, S. G.**, *Strawberry IPM – Gray Mold*. Massachusetts Berry Notes. Vol. 29, No 6. pp 2-3
- Schloemann, S. G.**, *Potato Leaf Hopper in Brambles*. Massachusetts Berry Notes. Vol 29. No 6. pp 9
- Schloemann, S. G.**, *Strawberry Renovation*, Massachusetts Berry Notes. , Vol. 29, No. 7
- Schloemann, S. G.**, *Spotted Wing Drosophila – Monitoring & Outlook for 2016*, Massachusetts Berry Notes, Vol. 29, No. 7
- Schloemann, S. G.**, *Small Fruit Leaf Tissue Analysis*. , Massachusetts Berry Notes, Vol. 29, No. 7
- Schloemann, S. G.**, *Implications of Drought Status on Small Fruit*, Massachusetts Berry Notes, Vol. 29, No. 8
- Schloemann, S. G.**, *Strawberry Fall Check-List*, Massachusetts Berry Notes, Vol. 29, No. 9
- Schloemann, S. G.**, *Raspberry Fall Check-List*, Massachusetts Berry Notes, Vol. 29, No. 9
- Schloemann, S. G.**, *Highbush Blueberry Fall Check-List*, Massachusetts Berry Notes, Vol. 29, No. 9

Other Papers & Reports:

Posters

A. Bienvenue, J. Raber, C. Sullivan, **S. Schloemann, E. Petit**. *Effect of cluster and shoot thinning on fruit quality for emerging grape cultivars in the Northeast*. Poster at the Undergraduate Research Conference, March 2017, Umass Campus Center (March and September 2017)

Technical Reports

Autio, W. R., J. M. Clements, J. S. Krupa, D. R. Cooley, and W. P. Cowgill. (2016). *Annual Report To Nc-140 From The Massachusetts Agricultural Experiment Station*. 6 pages.

Autio, W. R. (2016). *Annual Report To Nc-140 On The 2015 Organic Apple Rootstock Trial*. 5 pages.

Autio, W. R. (2016). *Annual Report To Nc-140 On The 2010 Apple Rootstock Trials*. 14 pages.

Ghantous, K.M. and H.A. Sandler. 2017. *Weed Research Update*.
http://scholarworks.umass.edu/cranberry_extension/234.

Ghantous, K.M., H.A. Sandler, and L.G. McDermott. 2017. *Pesticide resistance management*.
http://scholarworks.umass.edu/cranberry_extension/241/.

Ghantous, K.M. and H.A. Sandler. 2017. *Weed research update-January meeting*.
http://scholarworks.umass.edu/cranberry_extension/247/.

Ghantous, K.M. and H.A. Sandler, 2017. *Weed Control Update-Pesticide safety meeting*.
http://scholarworks.umass.edu/cranberry_extension/253.

Greene, D. W. and S. Hon. *AD-21 report on postharvest biology of pome fruit*.

Greene, D. W. *Influence of Amid-Thin and combinations on fruit set of Macoun apples*. 8 pp. A report of Valent

Biosciences

Greene, D. W. *Influence of matamitron (Brevis) on fruit set and fruit quality of McIntosh Apples.* 6pp. A report to Adama Inc.

Greene, D. W. *Evaluation of trunk injection of peach trees with gibberellins as a method to influence tree growth and flower bud formation.*

Greene, D. W. 2017. *A summary of three seasons work on the influence of Harvista on preharvest drop and fruit quality of McIntosh apples.* A report submitted to AgroFresh 12pp.

Greene, D. W. 2017 *Evaluation of trunk injection of apple trees with different gibberellins as a method to inhibit flower bud formation.* A report to the Rainbow Tree Company. 7pp.

Morton, L. W., **D. R. Cooley, J. M. Clements** and M. Gleason. 2017. *Climate, Weather and Apples.* Sociology Technical Report 1046. Department of Sociology, Iowa State University, Ames, Iowa. 16 pp.

Sandler, H.A. et al. 2017. *Massachusetts specialty crop IPM: Stakeholder-identified priorities.*
http://scholarworks.umass.edu/cranberry_research_repts/20.

Sandler, H.A. and K.M. Ghantous, 2017. *Maximizing your available herbicides.* Cranberry Station Extension meeting.
http://scholarworks.umass.edu/cranberry_extension/237.

Sandler, H.A. and K.M. Ghantous, 2017. *Defining new approaches to weed management-* Annual report to sponsors.
http://scholarworks.umass.edu/cranberry_research_repts/21.

Sandler, H.A. 2017. *Pesticide Registration Process.* http://scholarworks.umass.edu/cranberry_extension/251.

WEBSITES AND SOCIAL MEDIA

Title	Website	Page views (via Google analytics or comparable source)
UMass Fruit Advisor (JMC, SGS, WRA, AFT, DRC, EWG)	https://ag.umass.edu/fruit	61,000
New England Wine Grape Growers Resource Center (SGS, EP)	http://newenglandwinegrapes.org/	5,586
NC-140 Regional Rootstock Research Project (JMC, WRA)	http://www.nc140.org	3,000
eXtension Apples CoP (JMC)	http://articles.extension.org/apples	500
Apple-crop e-mail discussion group (JMC)	https://www.mail-archive.com/apple-crop@virtualorchard.com/	250
Network for Environment and Weather Applications- NEWA (JMC)	http://www.newa.cornell.edu	<i>This website is not maintained by UMass but we contribute significant data to its content</i>
jmcextman, out and about in the UMass Cold Spring Orchard blog (JMC)	http://jmcextman.blogspot.com/	35,000
Jon Clements on Facebook and Twitter (JMC)	https://www.facebook.com/jmcextman https://twitter.com/jmcextman	500 followers
UMass Vegetable & Fruit IPM Network (JMC, AFT, SGS, EWG)	https://www.facebook.com/umassipmteam/	882 followers

PRESENTATIONS

MEETINGS, WORKSHOPS & FIELD DAYS FOR COMMERCIAL GROWERS, PROFESSIONAL SERVICE PROVIDERS & INDUSTRY.

On-Farm Meetings/Workshops organized by Fruit Team (in whole or part)

Date	Meeting Title (credit)	Meeting Sponsor(s)	Locations	Attendance
2/8/17	Massachusetts Fruit Growers' Assoc. Annual Winter Meeting (WRA, JMC)	UMass Fruit Team, Mass Fruit Growers' Assoc.	UMass Cold Spring Orchard, Belchertown, MA	75
4/12/17	Fruit Program Twilight Meeting - April (JMC)	UMass Fruit Team	Sunny Crest Orchards Sterling, MA	65
4/20/17	Fruit Program Twilight Meeting - April (JMC)	UMass Fruit Team	Phantom Farms, Cumberland, RI	55
4/25/17	Fruit Program Twilight Meeting - April (JMC)	UMass Fruit Team	Outlook Farm, Westhampton, MA	30
5/10/17	Fruit Program Twilight Meeting - April (JMC)	UMass Fruit Team, URI Extension	UMass Cold Spring Orchard, Belchertown, MA	40
5/11/17	Fruit Program Twilight Meeting - May (JMC)	UMass Fruit Team	Honeypot Hill Orch, Stow, MA	65
6/15/17	Fruit Program Twilight Meeting (SGS, EWG)	UMass Fruit Team	Nourse Farms, Whately, MA	60
7/11/17	Massachusetts Fruit Growers' Assoc. Annual Summer Meeting (JMC, DWG, WRA, EWG)	UMass Extension/ Mass Fruit Growers' Assoc.	Cider Hill Farm, Amesbury, MA	120
TOTAL:				510

Presentations given at on-farm meetings or workshops by Fruit Team members

Date	Presentation Title (credit)	Meeting Sponsor(s)	Locations	Attendance
2/8/17	Update on Apple and Peach Rootstock Research (WRA)	UMass Fruit Team, Mass. Fruit Growers' Assoc.	UMass Cold Spring Orchard, Belchertown, MA	75
2/8/17	RIMpro: A Game Changer? (DRC)	UMass Fruit Team, Mass. Fruit Growers' Assoc.	UMass Cold Spring Orchard, Belchertown, MA	102
2/8/17	Growth Regulator Research (DWG)	UMass Fruit Team, Mass. Fruit Growers' Assoc.	UMass Cold Spring Orchard, Belchertown, MA	102
2/13/17	Growth Regulator Research (DWG)	New York Commercial Fruit School	Hudson, NY	150
2/14/17	Growth Regulator Research (DWG)	Hudson Valley Commercial Fruit School	Kingston, NY	300
3/22/17	Fire Blight - What You Need to Know (DRC)	Maine Pomological Soc.	Lewiston, ME	52
3/30/17	Pruning Small Fruit (SGS)	UMass Permaculture Club	UMass Permaculture Garden, Amhers, MA	12
4/12/17	Decision Support and Apple Disease	UMass Fruit Team	Sunnycrest Orchard,	58

	<i>Management (DRC)</i>		Sterling, MA	
4/20/17	<i>Decision Support and Apple Disease Management (DRC)</i>	UMass Fruit Team	Phantom Farms, Cumberland, RI	34
4/25/17	<i>Sprayer Calibration Demonstration (JMC)</i>	UMass Fruit Team, EPA, UNH Extension	Outlook Farm, Westhampton, MA	30
4/25/17	<i>Winter Moth Update (SGS)</i>	UMass Fruit Team	Outlook Farm, Westhampton, MA	30
4/25/17	<i>Decision Support and Apple Disease Management (DRC)</i>	UMass Fruit Team	Outlook Farm, Westhampton, MA	30
4/25/17	<i>Options for regulation of vegetative growth of apples for 2017 (DWG)</i>	UMass Fruit Team	Outlook Farm, Westhampton, MA	30
5/9/17	<i>Trunk Diseases of Grapes (EP)</i>	Univ. of Rhode Island Extension	Newport Vineyards, Middletown, RI	12
5/10/17	<i>Peach Disease Management (DRC)</i>	UMass Fruit Team	UMass Cold Spring Orchard, Belchertown, MA	65
5/10/17	<i>Thought and suggestions for chemical thinning and crop load adjustment of apples for 2017 (DWG)</i>	UMass Fruit Team	UMass Cold Spring Orchard, Belchertown, MA	65
5/11/17	<i>SWD Outlook for 2017 (SGS)</i>	URI Extension	Dame Farm, Johnston RI	30
5/11/17	<i>Peach Disease Management (DRC)</i>	UMass Fruit Team	Honeypot Hill Orch, Stow, MA	65
5/11/17	<i>Thinning options available for the crop load management for the 2017 growing season. (DWG)</i>	UMass Fruit Team	Honeypot Hill Orch, Stow, MA	65
5/17/17	<i>RIMpro use: Individual Instruction (DRC)</i>	UMaine	Acton, ME	10
5/24/24	<i>RIMpro use: Individual Instruction (DRC)</i>	UVM and UNH	Various	6
6/15/17	<i>SWD Outlook for 2017 (SGS)</i>	UMass Fruit Team	Nourse Farms, Whately MA	60
7/7/17	<i>Apples; Our Favorite Fruit (WRA)</i>	Museum of Science	Boston, MA	20
7/11/17	<i>Apple Disease Roundup (DRC)</i>	UMass Extension/ Mass Fruit Growers' Assoc.	Cider Hill Farm, Amesbury, MA	120
7/11/17	<i>Crop Load Management (DWG)</i>	UMass Extension/ Mass Fruit Growers' Assoc.	Cider Hill Farm, Amesbury, MA	120
8/31/17	<i>Preharvest options available to control preharvest drop and ripening of apples (DWG)</i>	CT Fruit Growers Assoc	Wallingford, CT	32
Total:				1,675

CONFERENCES OR SYMPOSIA ORGANIZED FOR COMMERCIAL GROWERS, PROFESSIONAL SERVICE PROVIDERS AND INDUSTRY.				
Events Organized by Fruit Team member(s) (in whole or part)				
Date	Event Title	Conference Sponsor (s)	Location	Attendance
10/18-19/16	<i>New York/New England/Canadian Fruit Pest Management Working Group (JMC)</i>	78 th Annual New England, New York, and Canadian Fruit Pest Management Workshop	Burlington, VT	50
2/8/17	<i>Annual Meeting of the Massachusetts Fruit Growers' Assoc. (JMC)</i>	UMass Extension Fruit Team/Mass Fruit Growers' Assoc.	Manchester Radisson Hotel Manchester, NH	85
1/8/16	<i>NEVGBA Winter Meeting (SGS)</i>	UMass Extension/NEVBGA	Hadley Farms Meeting House, Hadley, MA	55
2/6/16	<i>NEVGBA Winter Meeting (SGS)</i>	UMass Extension/NEVBGA	Hudson, MA	70
3/2/17	<i>eIPM Stakeholder Meeting (SGS, JMC, AFT, HAS, EWG)</i>	UMass Vegetable & Fruit Teams	Brigham Hill Farm, Grafton MA	25
3/7-8/17	<i>Northeast Plant Growth Regulator annual meeting (JMC)</i>	Northeast Plant Growth Regulator Working Group	Wilkes Barre, PA	30
3/14-15/17	<i>Red Tomato/Eco-apple Annual Grower Meeting (JMC)</i>	Red Tomato, Inc. and IPM Institute	online	25
TOTAL:				340

Presentations given at Conferences or Symposia.				
Date	Talk or presentation Title	Name of Meeting and Sponsor (s)	Location	Attendance
10/18-19/16	<i>RIMpro intro to US (JMC)</i>	78 th Annual New England, New York, and Canadian Fruit Pest Management Workshop	Burlington, VT	45
10/18-19/16	<i>Performance of Four Decision Support Systems for Apple Scab Management (DRC, JMC)</i>	78 th Annual New England, New York, and Canadian Fruit Pest Management Workshop	Burlington, VT	45
10/18-19/16	<i>MyIPM-SED, -NED, -SEP apps - Alphabet Soup or What? (JMC)</i>	78 th Annual New England, New York, and Canadian Fruit Pest Management Workshop	Burlington, VT	45
11/15-17/16	<i>MyIPM Apps - Alphabet Soup or What? (JMC)</i>	Great Lakes Fruit Workers	Collingwood, Ontario Canada	40
1/14/17	<i>Growing and Pruning Blueberries Organically (SGS)</i>	NOFA Massachusetts	Worcester State Univ., Worcester, MA	35
1/25/17	<i>What's it all About Anyways? (JMC)</i>	Nova Scotia Fruit Groers' Assoc. Annual Convention	Halifax Nova Scotia Canada	90
1/25/17	<i>How We Use On-Line Decision Support Tools for Disease and Insect Management in the Northeast USA (JMC)</i>	Nova Scotia Fruit Groers' Assoc. Annual Convention	Halifax Nova Scotia Canada	90

2/6/17	<i>Fruit thinning guided by physiological principals. (DWG)</i>	Stockbridge School of Agriculture Seminar	UMass-Amherst, MA	20
2/8/17	<i>Growth regulator research results and interpretation from the dismal 2016 growing seasons. (DWG)</i>	UMass Extension Fruit Team/ Massachusetts Fruit Growers Association	UMass Cold Spring Orchard, Belchertown, MA	75
2/8/17	<i>Update on Apple and Peach Rootstock Research (WRA)</i>	UMass Extension Fruit Team/ Massachusetts Fruit Growers Association	UMass Cold Spring Orchard, Belchertown, MA	75
2/13/17	<i>Apple orchard management with plant growth regulators. (DWG)</i>	New York Commercial Fruit Growers Annual Meeting.	Lake George, NY	100
2/14/17	<i>Apple orchard management with plant growth regulators (DWG)</i>	Hudson Valley Commercial Fruit Growers School	Kingston, NY	300
3/7/17	<i>Influence of metamitron to thin McIntosh and Gala apples. (DWG)</i>	Northeast Plant Growth Regulator Working Group	Wilkes Barre, PA	30
3/7/17	<i>Influence of Amid-Thin and combinations on fruit set of Macoun (DWG)</i>	Northeast Plant Growth Regulator Working Group	Wilkes Barre, PA	30
3/7/17	<i>Is 6-benzyladenine useful as a thinner when used at bloom or petal fall? (DWG)</i>	Northeast Plant Growth Regulator Working Group	Wilkes Barre, PA	30
3/22/17	<i>Travel, Horticulture, and Pest Management (JMC)</i>	Maine Pomological Society	Lewiston, ME	80
7/7/17	<i>Apples, Our Favorite Fruit; Research (WRA)</i>	Boston Museum of Science	Boston, MA	20
Total:				1,150

MEETINGS OR WORKSHOPS FOR HOME GARDENERS OR MASTER GARDENERS				
Home Gardener or Master Gardener Workshops Organized				
Date	Workshop Title	Location	Attendance	
3/4/17/- 4/15/17	2017 MassAggie Spring Seminar Series (SGS, JMC, DRC, WRA, EWG) <ul style="list-style-type: none"> • Home Orchard Pruning • Growing & Pruning Grapes • Apple Tree Grafting • Pruning Raspberries & Other Brambles • Home Orchard Establishment & Basics • Home Orchard Pest Management • Edible Landscaping 	Various (see below)	134	
Total:			134	
Presentations for Home Gardeners/Master Gardeners				
Mass Aggie Workshops				
3/4/17	Home Orchard Pruning (JMC)	UMass Extension Fruit Program	Dowse Orchards, Sherborn, MA	21
2/25/17	Growing & Pruning Grapes (SGS)	UMass Extension Fruit Program	UMass Cold Spring Orchard, Belchertown, MA	19
3/11/17	Apple Tree Grafting (WRA)	UMass Extension Fruit Program	UMass Cold Spring Orchard, Belchertown, MA	15
3/18/17	Pruning Raspberries & Other Brambles	UMass Extension Fruit Program	Wards Berry Farm, Sharron, MA	17
4/8/17	Home Orchard Establishment & Basics (JMC)	UMass Extension Fruit Program	Dowse Orchards, Sherborn, MA	25
4/8/17	Home Orchard Pest Management (JMC, DRC)	UMass Extension Fruit Program	Dowse Orchards, Sherborn, MA	20
4/15/17	Edible Landscaping (SGS)	UMass Extension Fruit Program	French Hall, UMass Amherst, MA	17
Total:				134
Master Gardener Trainings				
10/20/16	Small Fruit Production (SGS)	Mass. Master Gardeners Assoc. Training	Elm Bank Reservation, Wellesley, MA	50
2/21/17	Small Fruit Production (SGS)	Western Mass Master Gardeners Assoc. Training	Holyoke Community Coll., Holyoke, MA	55
4/1/17	Growing and Pruning Blueberries (SGS)	Western Mass Master Gardeners Assoc. Symposium	Holyoke High School, Holyoke, MA	35
Total:				140
Other				
10/9/16	Apples: A Primer and a Taste (WRA)	Pelham Historical Society	Pelham, MA	20
12/8/16	Agricultural Roundtable; Stockbridge School Of Agriculture's Contribution To Agricultural Education In Massachusetts (WRA)	Boston Public Market	Boston, MA	50
3/11/17	Grape Pruning and Grafting (EP)	Marshfield Agricultural	Marshfield	15

		& Horticultural Society	Fairgrounds, Marshfield MA	
3/26/17	Apple Tree Grafting (JMC)	Petersham Historical Society	Petersham, MA	15
Total:				100

**FIELD RESEARCH & DEMONSTRATION PROJECTS
(at UMass Cold Spring Orchard or Cooperating Grower Locations)**

Research Projects:

Title of the Project	Collaborating or Supporting Agency	Location of Project	# of people educated or impacted
Apple Variety and Systems Demonstration Plantings (JMC)	UMass Center for Agriculture, Food and the Environment (CAFE)	UMass Cold Spring Orchard	100
Peach Variety and Systems Demonstration Planting (JMC)	UMass Center for Agriculture, Food and the Environment (CAFE)	UMass Cold Spring Orchard	75
Cherry Variety and Systems Demonstration Plantings (JMC)	UMass Center for Agriculture, Food and the Environment (CAFE)	UMass Cold Spring Orchard	25
Precision Crop Load/Thinning Management Of Apples (JMC)	UMass Center for Agriculture, Food and the Environment (CAFE)	UMass Cold Spring Orchard	100
Asian Pear Fire Blight Canker Study (JMC)	Cornell University's Hudson Valley Laboratory	UMass Cold Spring Orchard	1,000
2017 UMass RIMpro Advisory Service (JMC, EWG)	New England Tree Fruit Research Committee	Various locations in New England	350
iPiPE Northeast Apple Crop-Pest Program (JMC, EWG)	North Carolina State Univ. & Pennsylvania State Univ.	Statewide in Massachusetts	1,000
Refining an Attracticidal Sphere Management System for Spotted Wing Drosophila in Small Fruit Production (AFT, EWG, SGS)	USDA	Nourse Farms, Whately MA	75
2010 NC-140 Apple Rootstock Trial (WRA, JMC)	USDA Hatch Multistate Project	UMass Cold Spring Orchard, Belchertown, MA	50
2010 NC-140 Fuji Apple Rootstock Trial (WRA, JMC)	USDA Hatch Multistate Project	UMass Cold Spring Orchard, Belchertown, MA	50
2015 NC-140 Geneva/Modi organic apple rootstock planting (JMC, WRA)	USDA Hatch Multistate Project	Small Ones Farm, Amherst, MA	50
2016 NE-1020 Multi-state Evaluation of Winegrape Cultivars and Clones (SGS, EP)	USDA Hatch Multistate Project	UMass Cold Spring Orchard, Belchertown, MA	60
<i>Defining New Approaches To Weed Management In Cranberry</i> (HAS)	Cranberry Research Foundation, Cranberry Institute and Ocean Spray Cranberries	Various farms in SE Mass and UMass Cranberry Station, E. Wareham.	250
<i>Dynamic Apple Disease Management: Forecasting Apple Scab and Fire Blight Under Changing Climatic</i>	USDA NE-IPM	UMass Cold Spring Orchard, Belchertown, MA,	100

Conditions (EWG, DRC, AFT, JMC)		Clarkdale Fruit Farms, Deerfield, MA, Red Apple Farm, Phillipston, MA	
Influence of metamitron on fruit set of McIntosh apples (DWG)	Adama	UMass Cold Spring Orchard, Belchertown, MA	100
Thinning apple trees with trunk injection (DWG)	Rainbow Tree Company	UMass Cold Spring Orchard	50
Total: 1,460			3,435

Demonstration Projects			
Title of the Project	Collaborating or Supporting Agency	Location of Project	Number of people educated or impacted
Apple variety evaluation/demonstration planting(s) for Rutgers/AC Nursery, Apple Variety Development LLC, and Regal Fruit Intl. (JMC)	Rutgers University AC Nursery Apple Variety Development, LLC Regal Fruit Intl.	UMass Cold Spring Orchard, Belchertown MA	50
Asian pear variety evaluation (JMC)		UMass Cold Spring Orchard, Belchertown MA	50
Cold Hardy Wine Grapes (not part of NE-1020 (SGS, EP))		UMass Cold Spring Orchard, Belchertown MA	50
Cold Hardy Seedless Table Grapes (SGS, SM, KMH, JK)		UMass Cold Spring Orchard, Belchertown MA	50
Evaluation of Honeycrisp strains (DWG)	Univ. Minnesota not supported	UMass Cold Spring Orchard	50
Evaluation of MN 55 (DWG)	Univ. Minnesota not supported	UMass Cold Spring Orchard	50
Further studies on the use of Casoron for dodder control in cranberry (HAS).	Arysta LifeScience.	Various farms in SE Mass and UMass Cranberry Station, E. Wareham.	200
NEWA Weather Network (JMC, AFT, DRC)	USDA EIP Grant, MA AES	21 on-site weather station across the state	100
Native Pollinator Conservation Habitat Project (JK, SGS)		UMass Cold Spring Orchard	50
SWD Monitoring and Reporting Network (SGS, AFT, EWG)	USDA EIP Grant	8 locations across the state	100
Swing Arm Trellis Demonstration for Blackberry and Black Raspberry Production in New England (SGS)	Massachusetts Fruit Growers Assoc.	UMass Cold Spring Orchard, Belchertown MA	50
Using the DA Meter to assess peach and apple maturity (JMC)		UMass Cold Spring Orchard, Belchertown MA	50
Total: 800			
Additional Sponsored Activity			
Type	Status	Description	
Grant	Active	Autio W. R. , Apiary Program Internships 2017, 5/1/2017 - 10/1/2017, \$8,286.00.	

Grant	Active	Autio W. R. , Marini R, Cline J, Reighard G, Lang G, Einhorn T , <i>NC-140 Treefruit Research</i> , 4/1/2017 - 3/31/2018, \$10,000.00.
Grant	Active	Autio W. R. , Marini R, Cline J, Robinson T, Reighard G, Lang G, Einhort T , <i>NC-140 Treefruit Research</i> , 4/1/2016 - 3/31/2017, \$10,000.00.
Grant	Active	Brown A., Autio W. R. , <i>UMass Amherst Student Farm Food Safety Improvement</i> , 3/2/2017 - 6/30/2017, \$9,832.00.
Grant	Active	Clements, J. M., D. R. Cooley. <i>Eco Apple App</i> (Apple and Play Stores)
Grant	Active	Clements, J. M., D. R. Cooley. <i>MyIPM App</i> (Apple and Play Stores), Clemson University, Southern IPM Center.
Revenue	Active	Greene D. R., McIntire S., Hanley K. M., Schloemann S. G., Clements J. M., Krupa J. S., Autio W. R. , <i>Income in support of the operation of the UMass Cold Spring Orchard Research and Education Center</i> , 9/1/2016 - 8/31/2017 \$203,945.00.
Grant	Active	Greene, D. W. , <i>Fruit Research 2</i> \$12,037
Grant	Active	Greene, D. W. , <i>Fruit Research 2</i> \$4,000
Grant	Active	Greene, D. W. , <i>Fruit Research 2</i> \$9,000
Grant	Active	He L, Decker E, Autio W. R. , Xiao H, <i>Barcoding juice quality using SERS, simultaneous determining the content of phytochemicals and adulterants.</i> 1/1/2018 - 12/31/2021, \$498,838.00.
Grant	Active	Petit, E. , <i>Evaluation of Wine Juice Quality Following Various Shoot and Cluster Thinning Regimes</i> , UMass Center for Ag, Food and Env Summer Scholars Program. \$5,000
Grant	Active	Sandler, H. A. (PI) , K. Campbell-Nelson, A. F. Tuttle, S. G. Schloemann, K. M. Ghantous , M. Sylvia, M. Dicklow and D. R. Cooley , <i>Multi-level extension delivery to support IPM for Massachusetts vegetable and fruit growers.</i> USDA-NIFA, Extension Implementation Program. 9/1/14 - 8/31/17. \$582,000.

STUDENT INVOLVEMENT

Classes and Tours		
	Student #	contact hours
UMass classes		
StockSch 235 <i>Pruning Fruit Crops labs</i> (WRA - 8 labs)	9	144
StockSch 305 <i>Small Fruit Production</i> (DWG - 13 labs)	19	494
StockSch 397 <i>VP Sustainable Grape Production</i> (EP - 8 labs)	14	224
Undergraduate Summer Scholar Internship - <i>Effect of cluster thinning on sugar and acidity of fruits for the grape variety Frontenac</i> (1 credit) (DRC)	1	
StockSch 196 Undergraduate Internship - <i>Comparison of methods to evaluate Venturia inaequalis ascospore maturity</i> (3 credits) (DRC)	7	
StockSch 496 Undergraduate Internship - <i>Comparison of methods to evaluate Venturia inaequalis ascospore maturity</i> (3 credits) (DRC)	1	
StockSch 198F Undergraduate Internship - <i>Innovative Ways to Grow and Market Organic Vegetables</i> (3 credits) (DWG)	1	26
Non-UMass classes		
<i>Farm School class/lab:</i>		
- <i>Small Fruit Production</i> (SGS , lecture)	16	32
- <i>Grape Pruning</i> (SGS , lab)	16	32

Educational Tours at UMass Cold Spring Orchard		
<i>School Tours (Pre-K to High School ages) (SH, KMH, JC)</i>	947	947
<i>UMass Journalism Class Tour (Undergraduate) (SH, KMH, JC)</i>	15	15
<i>Future Farmers of America Tour (High School) (SH, KMH, JC)</i>	15	15
<i>Congressman James McGovern Tour (General Public) (SH, KMH, JC, SGS, EWG)</i>	25	25
Total:	1,093	1,192

DIAGNOSTICS AND CONSULTING

Grower consultation/recommendations		
	Number	Comments
<u>Phone or email consultations</u>		
<i>A. Tuttle</i>	74	
<i>S. Schloemann</i>	350	
<i>J. Clements</i>	500	
<i>E. Garofalo</i>	55	
		Total: 979
<u>Diagnostic recommendations</u>		
<i>A. Tuttle</i>	41	
<i>S. Schloemann</i>	34	
<i>J. Clements (including 50 eXtension 'ask the expert' recommends)</i>	52	
<i>E. Garofalo</i>	50	
<i>Diagnostic Lab</i>	25	
		Total: 202
<u>Site visits</u>		
<i>A. Tuttle</i>	59	
<i>S. Schloemann</i>	35	
<i>J. Clements</i>	100	
<i>E. Garofalo</i>	100	
		Total: 294

OTHER OUTPUTS

Working Group Participation and Other Collaborations		
Title	Meeting dates	Fruit Team Participants
<i>Eco-Apple Marketing Project, Advisory Committee</i>	March 11-12, 2017	JMC, DRC, DWG
<i>Great Lakes Fruit Workers</i>	November 10, 2016	JMC
<i>NE-1020 Multi-state Evaluation of Winegrape Cultivars and Clones</i>	Nov. 16-17, 2016	SGS, EP
<i>NC-140 Regional Rootstock Project, Technical Committee</i>	Nov. 11-13, 2016	WRA, JMC
<i>Northeast Berry Call-In</i>	Weekly April-July '17	SGS, HAS
<i>Northeast Plant Growth Regulator Working Group</i>	March 7-8, 2016	JMC, DWG, JK
<i>Organic IPM Working Group</i>	Monthly calls	DRC
<i>Spotted Wing Drosophila Working Group</i>	Oct. 21, 2016	SGS
<i>Northeast Tree Fruit IPM Working Group</i>	Oct. 18-19, 2016	DRC, JMC, AFT, EWG
<i>Network for Environment and Weather Applications</i>	Monthly calls	JMC, DRC

OTHER MAJOR RESPONSIBILITIES OF TEAM MEMBERS

Name	Description
Autio, Wesley	<ul style="list-style-type: none"> Department Chair and Director of UMass Stockbridge School of Agriculture (http://stockbridge.cns.umass.edu/) Alpha Tau Gamma Fred P. Jeffrey Professorship Senior Editor Fruit Notes Journal Co-Editor Horticultural News

	<ul style="list-style-type: none"> • Ad hoc reviewer for Journal of the American Pomological Society • Resident agent for the American Pomological Society • Member Pomology, Postharvest, and Rootstock/Rhizosphere working groups of American Society for Horticultural Science • Ad hoc member School of Earth & Sustainability Committee • Ad hoc member of UMass Frank Waugh Arboretum Committee • Ad hoc member of UMass Enrollment Management Committee • Ad hoc member of UMass Academic Matters Council • Secretary & Treasurer, Massachusetts Fruit Growers Association • Member, Mass. Horticultural Society Education Committee • Trustee, Mass. Horticultural Society • Member, Tower Hill Botanical Garden Horticultural Committee
Clements, Jon	<ul style="list-style-type: none"> • State Contact/Coordinator, Massachusetts Network for Environment & Weather Applications (NEWA) • Member International Fruit Tree Association Board of Directors (http://www.ifruittree.org/dnn/default.aspx) • Member of New England Vegetable & Fruit Conference Program Committee, Media chair and session chair for Stone Fruit session. (http://www.newenglandvfc.org/)
Greene, Duane	<ul style="list-style-type: none"> • Director of UMass Cold Spring Orchard Research and Education Center Management Team (http://www.coldspringorchard.com/) • Editorial Board and Associate Editor International Journal of Fruit Science • Ad hoc reviewer Journal of the American Society for Horticultural Science, HortScience, HortTechnology, Canadian Journal of Plant Science • Ad Hoc member Pomology Working Group, International Society for Horticultural Science; Plant Growth Regulators in Fruit and Nut Production, American Society for Horticultural Science; Viticulture and Small Fruit Working Group, American Society for Horticultural Science; Postharvest Working Group, American Society for Horticultural Science • Member of New England Vegetable & Fruit Conference Program Committee and session chair for Tree Fruit I and Tree Fruit II sessions. (http://www.newenglandvfc.org/)
Petit, Elsa	<ul style="list-style-type: none"> • Member General Education Council member (since Fall 2015)- Involves monthly 3-hours meeting and reviewing 1-2 courses /month that are submitted as GenEd or IE. • Member Senior lecturer review committee at the CNS college level (since Spring 2016) - Involves reviewing promotion files for lecturers going for the senior-level promotion and 2 meetings. • Ad hoc reviewer for Plant Disease Journal • Ad hoc Panelist for Sustainable Agriculture Research and Education (SARE), Northeast, Partnership grants.
Sandler, Hilary	<ul style="list-style-type: none"> • Director, UMass Cranberry Experiment Station • State Coordinator, Northeast Extension Implementation Program (http://nifa.usda.gov/program/integrated-pest-management-program) • Associate Editor, Weed Science • Associate Editor, Innovative Techniques in Agriculture • Secretary, Weed Science Society of America • Member of New England Vegetable & Fruit Conference Program Committee • Ad hoc reviewer Weed Technology, Torrey Botanical Society
Schloemann, Sonia	<ul style="list-style-type: none"> • Program Chair, 2015 New England Vegetable & Fruit Conference (http://www.newenglandvfc.org/) • Member of UMass Cold Spring Orchard Research and Education Center Management Team (http://www.coldspringorchard.com/) • Member of UMass Center for Ag, Food and the Env. (CAFE) Director of Operations Search Committee • Member of New England Vegetable & Berry Growers Program Committee • Representative to CARAT-AHS Delegation to US Congress • Member of UMass CAFE Strategic Review Committee