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| Curriculum Vitae |
| Chris Reberg-Horton(919) 515-7597 screberg@ncsu.edu | Professor of Cropping SystemsDepartment of Crop Science North Carolina State UniversityRaleigh, NC 27695-7620 |
| Education |  |  |  |
| *Institution and Location* | *Degree* | *Year* | *Department* |
| North Carolina State University, Raleigh | Ph.D. | 2002 | Horticultural Science |
| Minor: | Statistics |  |
| University of California, Davis | M.S. | 1997 | Agricultural Ecology |
| University of North Carolina, Chapel Hill | B.S. | 1994 | Environmental Science |

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| Professional History |
| *Years* | *Position* |
| 2018--present2012 – 2018 | Professor of Cropping Systems, North Carolina State UniversityAssociate Professor of Organic Cropping Systems, North Carolina State University |
| 2006-2012 | Assistant Professor of Organic Cropping Systems, North Carolina State University |
| 2002 – 2005 | Assistant Professor of Sustainable Agriculture, University of Maine |
| 1998 – 1999 | Extension Associate Department of Horticultural Science, North Carolina State UniversityCo-Instructor for graduate course for extension, “On-Farm Research Methods” |
| 1993 – 1995 | Field Botanist, The Nature Conservancy, Chapel Hill, NC |

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| **Executive Summary** |
| ***Research*** |
| Journal Articles | 83 |
| Book Chapters | 1 |
| ***Extension/Outreach*** |
| Publications | 41 |
| Invited Presentations | 29 |
| Training Events Hosted | 39 |
| Websites | 2: organicgrains.ncsu.edu The NC Organic Grain website had a total of 4,957 visits to its 45 pages in 2015 (average of 413 visits per month – 100 more visits per month over 2014). sustainableag.ces.ncsu.edu |
| ***Advising*** |
| PhD, Chair | 6 |
| M.S., Chair | 5 |
| PhD, Member | 4 |
| M.S., Member | 11 |
| Post-Doctoral | 2 |
| Students Mentored Through my lab at NCSU | 8 |
| Students Mentored through Summer and School Year Field and Lab Work | 30+3 Uruguayan, 4 Honduran, 1 Brazilian |
| ***Grant Awards*** |
| Total  | Lead PI | Co-PI |
| $9,969,000 | $6081,000 | $3,888,000 |

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| **Professional Service** |
| **Off Campus** |
| ***Date*** | ***Activity*** |
| 2015 & 2016 | Panel Manager, USDA-ORG transitions program |
| 2015-2016 | Chair, Organic Management Systems Community, Agronomy Society of America |
| July 18-19, 2016 | Chair of the Southern Region Cover Crop Conference for USDA-SARE. 375 participants from throughout the region met in Goldsboro. |
| 2015 – Present | North Carolina state coordinator for the USDA-SARE professional development program which provides funding for county agent training. |
| 2006 – Present | Organic Farm Advisory Board (Chair) – A coalition of farmers, county agents, non-profits and extension specialists. We meet biannually to plan research and extension programs and apply for grants.  |
| Confidential | Review panel member for the USDA-ORG transition grants  |
| Confidential | Review panel member for USDA-Organic Research and Extension Initiative grants |
| 2014 | Reviewer for tenure packet, Washington State University |
| 2016 | Reviewer for tenure packet, Ohio State University |
| 2016 | Reviewer for full professor, University of Florida |
| 2002-2005 | Maine state Coordinator for SARE professional development |
| 2004 | Chairman of the Executive Council for Northeast SARE professional development  |
| 2004 | Chair of the NE1000 regional Hatch project “Improved Weed Control Through Residue Management and Crop Rotation |
| 2003-2005 | Member of the Maine State IPM Council |
| 2004-2005 | Chair of the Organic Dairy Research and Education Consortium for Maine and New Hampshire |
| **On Campus** |  |
| ***Date*** | ***Activity*** |
| 2014-2015 | Member, CALS College and Innovation Efficiency Committee |
| 2014-2015, 2017 to present | Member, Department of Crop Science Advisory Committee |
| 2013-2014 | Chair, Department of Crop Science Space Allocation Committee |
| 2011 to present | Director of Collaborative Research. Center for Environmental Farming Systems |
| 2011 to 2016 | Chair, Farming Systems Research Unit, Center for Environmental Farming Systems |
| 2006 to present | Chair, Organic Research Unit: Center for Environmental Farming Systems |
| International Scholarly Activity |
| *Date* | *Activity* |
| 2022 | Worked with Australian collaborator Wesley Moss to arrange a Fullbright experience for him at NC State. |
| 2022 | Collaborated with Aarhus University for a $3 million grant to USDA-NIFA to fund work on robotics for weed control on organic farms  |
| 2019 | Collaborated with Aarhus University in Denmark to successfully write as Sustainable Agricultural Systems grant for $10 million to USDA-NIFA |
| 2018 | Participated in a year of meetings with Aarhus University in Denmark under a European Union grant to foster collaboration with the U.S. |
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| Awards |
| *Date* | *Activity* |
| 2017 | Organic Management Systems Community Achievement Award for Agronomy Society of America |
| 2016 | University Faculty Scholars, NC State University |
| 2012 | US Department of Agriculture, Secretary’s Honor Award |
| 2012 | Gamma Sigma Delta, Honorary Agricultural Society |
| 2006 | Northeast US Extension Directors’ Award of Excellence. For: “Building an organic dairy research and extension program”.  |
| 2001 | College of Agriculture and Life Sciences (NC State University) Graduate Student Professional Development Workshop selection |
| 2000 | Pi Alpha Xi, Honorary Horticultural Society |
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| *Advisor to graduate students receiving awards* |
| 2017 | Rachel Atwell, Beltwide Cotton Conference, First Place in Graduate Student Oral Competition |
| 2016 | Rachel Atwell, NC Crop Protection School, First Place, Graduate Student Poster Competition |
| 2016 | Rachel Atwell, Agronomy Society of America, Organic Community, Second Place Graduate Student Oral Competition. |
| 2016 | Rachel Atwell, College of Agriculture and Life Graduate Student Professional Development Workshop selection |
| 2016-2017 | Rachel Atwell, Graduate Student Fellow at the Center for Environmental Farming Systems |
| 2014 | Rachel Atwell, CALS Outstanding Teaching Assistant Award |
| 2012 | Scott Wells, College of Agriculture and Life Sciences (NC State University) Graduate Student Professional Development Workshop selection |
| 2011 | Scott Wells, First Place, Northeast Weed Science Society Oral Papers |
| 2009 | George Place, First Place, Agronomy Society of America Graduate Oral Papers |
| 2009 | George Place, First Place, Southern Weed Science Society Oral Papers |
|  | Professional Associations |
|  | Agronomy/Crop Science/Soil Science Societies of America |
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| Graduate Committees |
| \* Indicates student was a member of my research lab |
| ***Student*** |  | ***Date begun*** | ***Defense Date*** |
| \*Rachel Atwell, PhD | Chair | May 2015 | Currently enrolled |
| Sean Bloszies, PhD | Member | Aug. 2012 | Currently enrolled |
| Matthew Granberry, M.S. | Member | Aug. 2013 | Currently enrolled |
| Zachary Jones, PhD | Member | Aug. 2013 | Currently enrolled |
| Nathan Bennett, M.S.  | Member | Aug. 2013 | Currently enrolled |
| \*Alex Knight, PhD | Co-chair | Aug. 2013 | April 2016 |
| *Greenhouse Gas Emissions in Long Term Agricultural Production Systems.* |
| Jeremy Machacek, M.S. | Co-chair | Aug. 2013 | July 2016 |
| Natalie Ross, M.S. | Member | Aug. 2013 | March 2016 |
| Sam McGowen, M.S. | Member | Aug. 2014 | March 2016 |
| \*Rachel Atwell, M.S. | Chair | Aug. 2012 | April 2015 |
| *Alternative Mechanisms for Weed Control and Fertility Management in Organic Canola and Corn Production.* |
| \*Alix Boulard, M.S. (From France) | Chair | Mar. 2015 | Sept. 2015 |
| *Modeling the Short Term Impact of Cover Crops in No-Till Corn Systems on the East Coast (USA): Soil Water and Nitrogen Conservation* |
| \*Scott Wells, PhD | Chair | June 2011 | Aug. 2013 |
| *A Mechanistic Approach to Weed Management in a Cover Crop Mulched System.* |
| \*Aaron Fox, PhD | Co-Chair | Aug. 2008 | May 2013 |
| *Conservation Buffers and Ecological Weed Management in Southeast Organic Cropping Systems: Weed Seedbanks and Weed Seed Predators.* |
| Margaret Worthington, PhD | Co-chair | Aug. 2010 | Dec. 2013 |
| \*Scott Wells, M.S. | Chair | Aug. 2008 | June 2011 |
| *The Evaluation of Rye Cultivars on Weed Suppression, Soybean Yield and Nitrogen Dynamics in the "Roll-Killed" Organic Cover Crop System.* |
| Eileen Balz, M.S. | Member | Aug. 2009 | Aug. 2011 |
| Charlie Plush, M.S. | Member | Aug. 2008 | July 2011 |
| Mary Parr, M.S. | Member | Aug. 2009 | Dec. 2010 |
| Samba Ansumana-Kawa, PhD | Member | May 2006 | Jan 2010 |
| \*George Place, PhD | Co-Chair | Jan. 2007 | Sep. 2009  |
| [*Applying Crop and Weed Competitive Dynamics For Weed Management in Soybean and Peanut*](http://repository.lib.ncsu.edu/ir/handle/1840.16/5848) |
| \*Adam Smith, M.S. | Chair | Aug. 2007 | Dec. 2009  |
| [*Utilizing Rolled Rye Mulch for Weed Suppression in Organic No-Tillage Soybeans*](http://repository.lib.ncsu.edu/ir/handle/1840.16/6297) |
| Sarah Ruark, M.S. | Member | Jul. 2006 | Nov. 2008 |
| Emily Vollmer, M.S. | Member | May 2006 | Dec 2008 |
| Ashley Brooks, M.S. | Member | Jan 2006 | Dec 2008 |
| Eric West, PhD | Member | Jan 2007 | Dec 2009 |
| \*Amanda Shearin, M.S (Maine) | Chair | Sep 2003 | Dec. 2005 |
| [*Cover Cropping And Soil Disturbance Impacts On The Invertebrate Weed Seed Predator Harpalus Rufipes*](http://ursus.maine.edu/search~S1?/aShearin/ashearin/1%2C18%2C56%2CE/frameset&FF=ashearin+amanda+f+1979&1%2C1%2C)  |
| Megan Gardener, M.S. (Maine) | Member | Sep 2003 | Dec. 2005 |

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| **Impacts of Student Mentorship** |
| **Name** | **Current Status** |
| Rachel Atwell | Completed MS, working on PhD. in my lab. |
| Alex Knight | Research and Development at Becks Hybrids |
| Alix Boulard | Modeler at AWhere |
| Aaron Fox | Assistant Professor of Plant Science at Cal Poly Pomona |
| Scott Wells | Assistant Professor of Forage and Cropping Systems at the University of Minnesota |
| George Place | Extension Director, Catawba County, NC |
| Adam Smith | PhD. Student at Virginia Tech, Department of Plant Pathology, Physiology and Weed Science  |

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| **Employees** |
| ***Years*** | ***Name*** | ***Position*** |
| 2006–Present | Molly Hamilton | Extension Associate |
| 2006-Present | 3-5 Undergraduate students each summer1-2 Undergraduate students each school year | Field and Lab Work Research Assistants(Approximately 30 Undergraduates mentored through lab participation)  |
| 2006-2007 | Bill Perry | Technician, Organic Grains Program |
| 2009-2011 | George Place | Post-Doctorate  |
| 2007-2013 | Carrie Brinton | Technician, Organic Grains Program |
| 2010-Present | Tomas Moreno | Technician, CEFS |
| 2012-2013 | Scott Wells | Post-Doctorate |
| 2013-2016 | Sarah Seehaver | Technician, Organic Grains Program |

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| **Peer Reviewed Articles**  |

\*Indicates graduate student advisee or employee

1. Bloszies, S. A., Reberg-Horton, S. C., Heitman, J. L., Woodley, A. L., Grossman, J. M., & Hu, S. (2022). Legume cover crop type and termination method effects on labile soil carbon and nitrogen and aggregation. Agronomy Journal.
2. Dobbs, A. M., Ginn, D., Skovsen, S. K., Bagavathiannan, M. V., Mirsky, S. B., Reberg-Horton, C. S., & Leon, R. G. (2022). New directions in weed management and research using 3d imaging. Weed Science,1–7.
3. Dobbs, A. M., Reberg-Horton, S. C., Snyder, L. U., & Leon, R. G. (2022). Assessing weediness potential of brassica carinata (a.) braun in the southeastern united states. Industrial Crops and Products, 188, 115611.
4. Hu, C., Thomasson, J. A., Reberg-Horton, C., Mirsky, S. B., & Bagavathiannan, M. V. (2022). Modeling realistic 3d agricultural vegetations using a photometric-based approach and its application to weed detection. Computers and Electronics in Agriculture, 198, 107020.
5. Leon, R. G., Creamer, N., Reberg-Horton, S. C., & Franzluebbers, A. J. (2022). Eradication of commelina benghalensis in a long-term experiment using a multistakeholder governance model: A case of regulatory concerns defeating ecological management success. Invasive Plant Science and Management,15(3), 152–159.
6. Martins, L. B., Balint-Kurti, P., & Reberg-Horton, S. C. (2022). Genome-wide association study for morphological traits and resistance to peryonella pinodes in the usda pea single plant plus collection. G3, 12(9), jkac168.
7. Raturi, A., Thompson, J. J., Ackroyd, V., Chase, C. A., Davis, B. W., Myers, R., Poncet, A., Ramos-Giraldo, P., Reberg-Horton, C., Rejesus, R. Et al. (2022). Cultivating trust in technology-mediated sustainable agricultural research. Agronomy Journal, 114(5), 2669–2680. https://doi.org/10.1002/agj2.20974
8. Sapkota, B. B., Popescu, S., Rajan, N., Leon, R. G., Reberg-Horton, C., Mirsky, S., &Bagavathiannan, M. V. (2022). Use of synthetic images for training a deep learning model for weed detection and biomass estimation in cotton. Scientific Reports, 12(1), 1–18.
9. Smith, S. C., Jennings, K. M., Monks, D. W., Jordan, D. L., Reberg-Horton, S. C., & Schwarz, M. R. (2022a). Evaluation of sweetpotato cultivars with varying canopy architectures in conventional and a reduced-tillage rye production system. HortTechnology, 32(2), 158–163.
10. Smith, S. C., Jennings, K. M., Monks, D. W., Jordan, D. L., Reberg-Horton, S. C., & Schwarz, M. R. (2022b). Sweetpotato tolerance and palmer amaranth control with indaziflam. Weed Technology, 36(2), 202–206.
11. Spoth, M. P., Haring, S. C., Everman, W., Reberg-Horton, C., Greene, W. C., & Flessner, M. L. (2022). Narrow-windrow burning to control seeds of italian ryegrass (lolium perenne ssp. multiflorum) in wheat and palmer amaranth (amaranthus palmeri) in soybean. Weed Technology, 1–7.
12. Thapa, R., Cabrera, M., Reberg-Horton, C., Dann, C., Balkcom, K. S., Fleisher, D., Gaskin, J.,Hitchcock, R., Poncet, A., Schomberg, H. H. Et al. (2022). Modeling surface residue decomposition and n release using the cover crop nitrogen calculator (cc-ncalc). Nutrient Cycling in Agroecosystems, 124(1), 81–99.
13. Thapa, R., Tully, K. L., Hamovit, N., Yarwood, S. A., Schomberg, H. H., Cabrera, M. L., Reberg-Horton, C., & Mirsky, S. B. (2022). Microbial processes and community structure as influenced by cover crop residue type and placement during repeated dry-wet cycles. Applied Soil Ecology, 172, 104349.
14. Thapa, R., Tully, K. L., Reberg-Horton, C., Cabrera, M., Davis, B. W., Fleisher, D., Gaskin, J., Hitchcock, R., Poncet, A., Schomberg, H. H. Et al. (2022). Cover crop residue decomposition in no-till cropping systems: Insights from multi-state on-farm litter bag studies. Agriculture, Ecosystems & Environment, 326, 107823.
15. Zhang, X., Qiu, Y., Gilliam, F. S., Gillespie, C. J., Tu, C., Reberg-Horton, S. C., & Hu, S. (2022). Arbuscular mycorrhizae shift community composition of n-cycling microbes and suppress soil n2o emission. Environmental Science & Technology, 56(18), 13461–13472.
16. Dann, C. E., Cabrera, M., Thapa, R., Mirsky, S., Tully, K., Reberg-Horton, C., Hitchcock, R., & Morari, F. (2021). Modeling water potential of cover crop residues on the soil surface. Ecological Modelling, 459, 109708. https://doi.org/10.1016/j.ecolmodel.2021.109708
17. Martins, L. B., Rejesus, R. M., Reberg-Horton, C., & Myers, R. L. (2021). Understanding the market for cover crop seeds in the united states: Background and potential policy directions. Journal of Soil and Water Conservation, 76(5), 83A–88A.
18. Reinhardt Piskackova, T. A., Reberg-Horton, S. C., Richardson, R. J., Jennings, K. M., Franca, L., Young, B. G., & Leon, R. G. (2021). Windows of action for controlling palmer amaranth (amaranthus palmeri) using emergence and phenology models. Weed Research, 61(3), 188–198.
19. Thapa, R., Tully, K. L., Cabrera, M. L., Dann, C., Schomberg, H. H., Timlin, D., Reberg-Horton, C., Gaskin, J., Davis, B. W., & Mirsky, S. B. (2021). Effects of moisture and temperature on c and n mineralization from surface-applied cover crop residues. Biology and Fertility of Soils, 57(4), 485–498.
20. Thapa, R., Tully, K. L., Cabrera, M., Dann, C., Schomberg, H. H., Timlin, D., Gaskin, J., Reberg-Horton, C., & Mirsky, S. B. (2021). Cover crop residue moisture content controls diurnal variations in surface residue decomposition. Agricultural and Forest Meteorology, 308, 108537.
21. Thompson, A. I., Schomberg, H. H., Evett, S. R., Fisher, D. K., Mirsky, S. B., & Reberg-Horton, S. C. (2021). Gateway-node wireless data collection system for environmental sensing. Agrosystems, Geosciences & Environment, 4(4), e20219.
22. Vann, R. A., Reberg-Horton, S. C., Castillo, M. S., Murphy, J. P., Martins, L. B., Mirsky, S. B., Saha, U., & McGee, R. J. (2021). Differences among eighteen winter pea genotypes for forage and cover crop use in the southeastern united states. Crop Science, 61(2), 947–965.
23. Franzluebbers, A. J., Reberg-Horton, S. C., & Creamer, N. G. (2020). Soil carbon and nitrogen fractions after 19 years of farming systems research in the coastal plain of north carolina. Soil Science Society of America Journal, 84(3), 856–876.
24. Kaufman, A. A., Jordan, D. L., Reberg-Horton, C., Dean, L. L., Shew, B. B., Anco, D., Mehi, H., Taylor, S., Balota, M., Goodell, L. Et al. (2020). Identifying interest, risks, and impressions of organic peanut production: A survey of conventional farmers in the virginia–carolina region. Crop, Forage & Turfgrass Management, 6(1), e20042.
25. Kissing Kucek, L., Azevedo, M., Eagen, S., Ehlke, N., Hayes, R., Mirsky, S., Reberg-Horton, C., Ryan, M., Wayman, S., Wiering, N. Et al. (2020). Seed dormancy in hairy vetch (vicia villosa roth) is influenced by genotype and environment. Agronomy, 10(11), 1804.
26. Kissing Kucek, L., Riday, H., Rufener, B. P., Burke, A. N., Eagen, S. S., Ehlke, N., Krogman, S., Mirsky, S. B., Reberg-Horton, C., Ryan, M. R. Et al. (2020). Pod dehiscence in hairy vetch (vicia villosa roth). Frontiers in plant science, 11, 82.
27. Kucek, L. K., Riday, H., Rufener, B. P., Burke, A. N., Eagen, S. S., Ehlke, N., Krogman, S., Mirsky, S. B., Reberg-Horton, C., Ryan, M. R. Et al. (2020). Pod dehiscence in hairy vetch. Wild Plants as Source of New Crops.
28. Marcillo, G. S., Mirsky, S., Poncet, A., Reberg-Horton, C., Timlin, D., Schomberg, H., & Ramos, P. (2020). Using statistical learning algorithms to predict cover crop biomass and cover crop nitrogen content. Agronomy Journal, 112(6), 4898–4913.
29. Piskackova, T. A. R., Reberg-Horton, C., Richardson, R. J., Jennings, K. M., & Leon, R. G. (2020). Integrating emergence and phenology models to determine windows of action for weed control: A case study using senna obtusifolia. Field Crops Research, 258, 107959.
30. Piskackova, T. R., Reberg-Horton, S. C., Richardson, R. J., Jennings, K. M., & Leon, R. G. (2020). Incorporating environmental factors to describe wild radish (raphanus raphanistrum) seedling emergence and plant phenology. Weed Science, 68(6), 627–638.
31. Ramos-Giraldo, P., Reberg-Horton, C., Locke, A. M., Mirsky, S., & Lobaton, E. (2020). Drought stress detection using low-cost computer vision systems and machine learning techniques. IT Professional, 22(3), 27–29.
32. Reinhardt Piskackova, T., Reberg-Horton, C., Richardson, R. J., Austin, R., Jennings, K. M., & Leon, R. G. (2020). Creating predictive weed emergence models using repeat photography and image analysis. Plants, 9(5), 635.
33. Reinhardt Piskackova, T., Reberg-Horton, S. C., Richardson, R. J., Jennings, K. M., & Leon, R. G. (2020). Incorporating environmental factors to describe wild radish (raphanus raphanistrum) seedling emergence and plant phenology. Weed Science, 68(6), 627–638.
34. Smith, S. C., Jennings, K. M., Monks, D. W., Chaudhari, S., Schultheis, J. R., & Reberg-Horton, C. (2020). Critical timing of palmer amaranth (amaranthus palmeri) removal in sweetpotato. Weed Technology, 34(4), 547–551.
35. Xiao, R., Qiu, Y., Tao, J., Zhang, X., Chen, H., Reberg-Horton, S. C., Shi, W., Shew, H. D., Zhang, Y., & Hu, S. (2020). Biological controls over the abundances of terrestrial ammonia oxidizers. Global Ecology and Biogeography, 29(2), 384–399.
36. Qiu, Y., Jiang, Y., Guo, L., Zhang, L., Burkey, K. O., Zobel, R. W., Reberg-Horton, S. C., Shew, H. D., & Hu, S. (2019). Shifts in the composition and activities of denitrifiers dominate co2 stimulation of n2o emissions. Environmental science & technology, 53(19), 11204–11213.
37. Vann, R., Reberg-Horton, S., Castillo, M., McGee, R., & Mirsky, S. (2019). Winter pea, crimson clover, and hairy vetch planted in mixture with small grains in the southeast united states. Agronomy Journal, 111(2), 805–815.
38. Liebman, A. M., Grossman, J., Brown, M., Wells, M. S., Reberg-Horton, S., & Shi, W. (2018). Legume cover crops and tillage impact nitrogen dynamics in organic corn production. Agronomy Journal, 110(3), 1046–1057.
39. Smith, S. C., Jennings, K. M., Monks, D. W., Schultheis, J. R., & Reberg-Horton, S. C. (2018). Tolerance of sweetpotato to herbicides applied in plant propagation beds. Weed Technology, 33(1), 147–152.
40. Vann, R., Reberg-Horton, S., Castillo, M., Mirsky, S., & McGee, R. (2018). Winter pea cultivar/breeding line screening for grain crop potential in the southeastern united states. Agronomy Journal, 110(4), 1217–1225.
41. Vann, R., Reberg-Horton, S., Crozier, C., & Place, G. (2018). Effect of soybean maturity, crimson clover seeding method, and seeding rate on clover biomass and nitrogen content. Agronomy Journal, 110(5), 1829–1835.
42. Vann, R., Reberg-Horton, S., Edmisten, K., & York, A. (2018). Implications of cereal rye/crimson clover management for conventional and organic cotton producers. Agronomy Journal, 110(2), 621–631.
43. Williams, A., Wells, M. S., Dickey, D. A., Hu, S., Maul, J., Raskin, D. T., Reberg-Horton, S. C., & Mirsky, S. B. (2018). Establishing the relationship of soil nitrogen immobilization to cereal rye residues in a mulched system. Plant and Soil, 426(1-2), 95–107.
44. Mirsky, S. B., Ackroyd, V. J., Cordeau, S., Curran, W. S., Hashemi, M., Reberg-Horton, S. C., Ryan, M. R., & Spargo, J. T. (2017). Hairy vetch biomass across the eastern united states: Effects of latitude, seeding rate and date, and termination timing. Agronomy Journal, 109(4), 1510–1519.
45. Mirsky, S. B., Spargo, J. T., Curran, W. S., Reberg-Horton, S. C., Ryan, M. R., Schomberg, H. H., & Ackroyd, V. J. (2017). Characterizing cereal rye biomass and allometric relationships across a range of fall available nitrogen rates in the eastern united states. Agronomy Journal, 109(4), 1520–1531.
46. Roper, W. R., Osmond, D. L., Heitman, J. L., Wagger, M. G., & Reberg-Horton, S. C. (2017a). Erratum: Soil health indicators do not differentiate among agronomic management systems in north carolina soils. Soil Science Society of America Journal, 81(6), 1697–1697.
47. Roper, W. R., Osmond, D. L., Heitman, J. L., Wagger, M. G., & Reberg-Horton, S. C. (2017b). Soil health indicators do not differentiate among agronomic management systems in north carolina soils. Soil Science Society of America Journal, 81(4), 828–843.
48. Vann, M., Bennett, N., Fisher, L., Reberg-Horton, S., & Burrack, H. (2017). Poultry feather meal application in organic flue-cured tobacco production. Agronomy Journal, 109(6), 2800–2807.
49. Vann, R., Reberg-Horton, S. C., Poffenbarger, H., Zinati, G., Moyer, J., & Mirsky, S. (2017). Starter fertilizer for managing cover crop-based organic corn. Agronomy Journal, 109(5), 2214–2222.
50. Wells, M. S., Reberg-Horton, S. C., Mirsky, S. B., Maul, J. E., & Hu, S. (2017). In situ validation of fungal n translocation to cereal rye mulches under no-till soybean production. Plant and Soil, 410(1-2), 153–165.
51. Wu, K., Chen, D., Tu, C., Qiu, Y., Burkey, K. O., Reberg-Horton, S. C., Peng, S., & Hu, S. (2017). Co2-induced alterations in plant nitrate utilization and root exudation stimulate n2o emissions. Soil Biology and Biochemistry, 106, 9–17.
52. Vann, R., Reberg-Horton, S., & Brinton, C. (2016). Row spacing and seeding rate effects on canola population, weed competition, and yield in winter organic canola production. Agronomy Journal, 108(6), 2425–2432.
53. Wells, M. S., Brinton, C. M., & Reberg-Horton, S. C. (2016). Weed suppression and soybean yield in a no-till cover-crop mulched system as influenced by six rye cultivars. Renewable Agriculture and Food Systems, 31(5), 429–440.
54. Wells, M. S., Reberg-Horton, S. C., & Mirsky, S. B. (2016). Planting date impacts on soil water management, plant growth, and weeds in cover-crop-based no-till corn production. Agronomy Journal, 108(1), 162–170.
55. Worthington, M., Reberg-Horton, S. C., Brown-Guedira, G., Jordan, D., Weisz, R., & Murphy, J. P. (2015a). Morphological traits associated with weed-suppressive ability of winter wheat against italian ryegrass. Crop Science, 55(1), 50–56.
56. Worthington, M., Reberg-Horton, S. C., Brown-Guedira, G., Jordan, D., Weisz, R., & Murphy, J. P. (2015b). Relative contributions of allelopathy and competitive traits to the weed suppressive ability of winter wheat lines against italian ryegrass. Crop science, 55(1), 57–64.
57. Parr, M., Grossman, J. M., Reberg-Horton, S. C., Brinton, C., & Crozier, C. (2014). Roller-crimper termination for legume cover crops in north carolina: Impacts on nutrient availability to a succeeding corn crop. Communications in soil science and plant analysis, 45(8), 1106–1119.
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| **Extension Publications** |
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| **Abstracts** |

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7. Atwell, R.A., S.B. Mirsky, H.J. Poffenbarger, and **S.C. Reberg-Horton**. (2016). Cover crop mixture proportion and starter fertilizer effects on weed competition and grain yield in organic rotational no-till maize production. In 2016 annual meeting abstracts. WSSA/SWSS, San Juan, Puerto Rico. Oral Presentation.
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45. \*Place, GT, TE Carter, and **SC Reberg-Horton**. 2009. Identification of competitive soybean genotypes and soybean traits of interest in weed suppression. Presented at the Weed Science Society of North Carolina conference in Raleigh, NC (oral presentation).
46. \*Place, GT, TE Carter, and **SC Reberg-Horton**. 2009. Breeding for weed suppressiveness: an initial approach to soybean genotype screening. Presented at the Weed Science Society of America/Southern Weed Science Society of America joint conference in Orlando, FL (first place oral presentation in PhD student category).
47. **Reberg-Horton, S.C.**, J. Grossman, C. Brinton, A. Smith and M.S. Wells. 2009. Mechanisms of weed suppression in rolled cover crop systems. American Society of Agronomy Annual Meeting, Pittsburgh, PA.
48. Parr, M.C., **S.C. Reberg-Horton**, C. Crozier, C. Brinton and J. Grossman. 2009. Fixation and release of nitrogen from novel cover crops for use in reduced tillage organic corn production in North Carolina. American Society of Agronomy Annual Meeting, Pittsburgh, PA.
49. \*Brinton, C.M.**, S.C. Reberg-Horton**, M.C. Parr and J. Grossman. 2009. Weed control in organic cropping systems using a roll-kill/no-till technique with cover crops. American Society of Agronomy Annual Meeting, Pittsburgh, PA.
50. \*Smith, A.N., **S.C. Reberg-Horton**, and J. P. Mueller. 2009. Utilizing rolled rye mulch for weed suppression in organic no-till soybeans. American Society of Agronomy Annual Meeting, Pittsburgh, PA.
51. \*Smith, A.N., J.P. Mueller, and **S.C. Reberg-Horton**. 2009. Weed management tactics in organic no-till soybeans. Presented at the Weed Science Society of America/Southern Weed Science Society of America joint conference in Orlando, FL.
52. Crozier, C.R. **S.C. Reberg-Horton,** A.D. Meijer, J. Grossman, M. Hamilton, L. Elworth, R.W. Heiniger, and R. Weisz. 2009. Multifaceted organic grain extension programming in North Carolina. American Society of Agronomy Annual Meeting, Pittsburgh, PA.
53. Meijer, A.D., D.L. Hubers, C.R. Crozier, **C. Reberg-Horton**, and M. Hamilton. 2009. Transitioning to organic crop production:  can conservation tillage practices be effective? In:  Proceedings from the Southern Conservation Agriculture Systems Conference. Painter, VA.
54. \*Place, G.T, T. E. Carter, **S. C. Reberg-Horton.** 2009. Breeding for weed suppressiveness: an initial approach to soybean genotype screening. Proceedings of the 2009 Weed Science Society of America annual meeting.
55. \*Smith, A.N., J. P. Mueller, **S. C. Reberg-Horton**. 2009. Weed management tactics in organic no-till soybeans. Proceedings of the 2009 Weed Science Society of America annual meeting. Orlando, FL.
56. **Reberg-Horton**, **S.C.,** A. Brooks, D. Danehower, M. Burton, J. Burton, G. Ma, and P. Murphy. 2008. Breeding rye cover crops for increased allelopathic potential. 5th World Congress on Allelopathy. Saratoga Springs, NY
57. \*Place, G.T., M.G. Burton, and **S.C. Reberg-Horton.** 2008. Improving weed suppressive ability in soybeans. Proceedings of the 26th Annual Meeting of the Weed Science Society of North Carolina. Raleigh, NC.
58. \*Smith, A.N., Place, G.T., and **Reberg-Horton, S.C.** 2008. Seeding rate effects on weed control and yield in organic soybeans. Proceedings of the 26th Annual Meeting of the Weed Science Society of North Carolina. Raleigh, NC.
59. **S.C. Reberg-Horton,** J.P. Mueller, and N.G. Creamer. 2007. Combining short-term and long-term research on organic farming systems at the Center for Environmental Farming Systems. In: Agronomy Society of America, Crop Science Society of America, Soil Science Society of America, 2007 International Annual Meetings Abstracts, New Orleans, LA. CDROM.
60. \*Place, G.T., T.E. Carter, M.G. Burton, and **S.C. Reberg-Horton.** 2007. Traits of interest for improving weed suppressive ability in soybean during the critical period for weed competition. In: Agronomy Society of America, Crop Science Society of America, Soil Science Society of America, 2007 International Annual Meetings Abstracts, New Orleans, LA. CDROM.
61. Crozier, C.R., G.D. Hoyt, D.L. Osmond, R.W. Heiniger, **S.C. Reberg-Horton**, and N. George. 2007 North Carolina biofuels activity and soil fertility update. In: C. Crozier (ed.), Proc. Southern Plant Nutrient Conf. Olive Branch, MS. Published by The Samuel Roberts Noble Foundation, Ardmore, OK.
62. Place, G.T., M.G. Burton, **S.C. Reberg-Horton,** and G.G. Wilkerson. Rotary hoe cultivation for early-season weed control in corn and soybean. Proceeding of the Weed Science Society of North Carolina 2007.
63. **Reberg-Horton, C.**  2007. The impact of cultivation, timing and increased plant population density on weed control in organic soybeans. Proceedings of the Annual Meeting - Northeastern Weed Science Society 61:142.
64. Burton, M., **C. Reberg-Horton,** G. Place and S. Hoyle. 2007. Rotary hoe efficacy in corn; influence of soil type and moisture. Proceedings of the Annual Meeting - Northeastern Weed Science Society 61:145.
65. \*Place, G.T., M.G. Burton, **S.C. Reberg-Horton** and G.G. Wilkerson. 2007. Blind cultivation in corn: effect of frequency, soil type and moisture on weed density and estimated yield loss. Proceedings of the Annual Meeting - Southern Weed Science Society 60:219.
66. Jemison, J.M. and **C. Reberg-Horton**. 2006. Alternative cropping systems for organic dairy producers: improvements and lessons learned. Proceedings of the Annual Meeting - Northeastern Weed Science Society 60:74-77.
67. Kersbergen, R. and **C. Reberg-Horton**. 2006. Managing smooth bedstraw in pasture and forage crops in New England. Proceedings of the Annual Meeting - Northeastern Weed Science Society 60: 78.
68. \*Shearin, A. F., **S.C. Reberg-Horton,** E.R. Gallandt, and F.A. Drummond. 2005. Cover crop and cultivation impacts on the weed seed predator *Harpalus rufipes*. Hortscience 40:1102.
69. **Reberg-Horton, S.C.**, E. Gallandt and N. Taylor. 2005. A distance-based redundancy analysis of weed seed bank changes in the Maine potato ecosystem project. Proceedings of the Annual Meeting - Northeastern Weed Science Society 59:139.
70. Jemison, J.M. and **S.C. Reberg-Horton.** 2005. An alternative forage production system for organic dairy producers: quality feed and fewer weeds. Proceedings of the Annual Meeting - Northeastern Weed Science Society 59:13.
71. \*Shearin, A. and **S.C. Reberg-Horton.** 2005. Cover crop management impacts on the weed seed predator, *Harpalus rufipes*. Proceedings of the Annual Meeting - Northeastern Weed Science Society 59:77.
72. **Reberg-Horton, S.C.,** N.G. Creamer, and J.P. Murphy. 2004. Breeding for increased rye allelopathy. Proceedings of the Annual Meeting - Northeastern Weed Science Society 58: 157.
73. **Reberg-Horton, S.C.,** N.G. Creamer, D.A. Danehower, G. Ma, D.W. Monks, J.P. Murphy, N.N. Ranells, J.D. Williamson, and J.D. Burton. 2003. Cultivar and maturation effects on the allelochemical content of ten cultivars of rye. Proceedings of the Annual Meeting - Northeastern Weed Science Society 57: 84
74. **Reberg-Horton, S.C.,** N.G. Creamer, D.A. Danehower, G. Ma, D.W. Monks, N.N. Ranells, J.D. Williamson, J.D. Burton and J.P. Murphy. 2003. Breeding a more allelopathic rye for use in organic vegetable production. HortScience 38:866.
75. Ranells, N.N., **Reberg-Horton, S.C.,** and Creamer, N.G. 2002. Varietal effects of cereal rye on recovery of soil inorganic nitrogen. Annual Meeting Abstracts of the American Society of Agronomy.
76. **Reberg-Horton, S.C.,** N.G. Creamer, J. Burton, N. Ranells, and C.L. Mohler. 2001. Bioassay and field evaluation of rye cultivars for allelopathy. 41st Annual Meeting of the Weed Science Society of America. WSSA Abstracts 41:109.
77. **Reberg-Horton, S.C.,** N.G. Creamer, J. Burton, N. Ranells, and P. Murphy. 2001. Breeding rye (*Secale cereale*) for increased allelopathy. 98th Annual Conference of the American Society for Horticultural Science. HortScience 36:561.
78. **Reberg-Horton, S.C.,** N.G. Creamer, and C.L. Mohler. 1999. The suppression of weeds by nine varieties of rye (*Secale cereale*). 40th Annual Meeting of the Weed Science Society of America. WSSA Abstracts 40:27.

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| Extramural Awards |

# \*Indicates graduate student advisee or employee

1. Reberg-Horton, SB Mirsky et al. 2019-2024. Enhancing the Sustainability of US Cropping Systems through Cover Crops and an Innovative Information and Technology Network. USDA-NIFA ($9,994,404)
2. Reberg-Horton, S.C., SB Mirsky, H. Schomberg, D. Fleisher, R. Stockwell, T Butler, K Tully, KS, Cabrera, J. Gaskin, K. Balkcom, and JJ Thompson. 2018-2023. Cover crops: the cornerstone of water management in the face of increasing demand and a changing climate. ($5,200,000). USDA-AFRI Water For Food Production Challenge Area.
3. Mirsky, Steven, Chris Reberg-Horton, Matthew Ryan, Jude Maul, Rebecca McGee, Gerald Smith, Heathcliffe Riday, Ryan Hayes, Rachel Vann, John Englert, Nancy Ehlke. 2018-2022. Selection to Distribution: Delivering Regionally Adapted Cover Crop Varieties to Organic Farmers. USDA – Organic Agriculture Research and Extension Initiative (OREI). ($~2,000,000)
4. Innovation Through Participation: A Multi-Disciplinary Approach to Intensifying Cover Crops In Corn Production. 05/15/2019 - 05/14/2021, US Dept. of Agriculture (USDA) - National Institute of Food and Agriculture ($155,508)
5. Identification of Resistance to Ascochyta Blight (Mycosphaerella pinodes) in the USDA Pea Single Plant-Derived (PSP) Core Collection. 06/27/2019 - 06/30/2020, US Dept. of Agriculture (USDA) - Agriculture Research Service ($20,000)
6. **Reberg-Horton, S.C.,** S. Mirsky, H. Schomberg, D.Timlin, M. Cabrera, J. Gaskin. 2015-2019. Decision Support Tools for Cover Crops: Crediting Water and Nitrogen Conservation. NRCS Conservation Innovation Grant, ($998,469)
7. Mirsky, Steven, **Chris Reberg-Horton**, Matthew Ryan, Jude Maul, Rebecca McGee, Gerald Smith, Heathcliffe Riday, Laurie Drinkwater. 2015-2019. Creating the Cover crops that Organic Farmers Need: Delivering Regionally Adapted Varieties across America. USDA-OREI (Organic Agriculture Research and Extension Initiative) ($1,998,686)
8. **Reberg-Horton, S.C.,** et al. (Principal Investigators from nine states). 2015-2017. Institutionalizing Cover Crop Research and Education in the Southeast. USDA-SARE (Sustainable Agriculture and Research Education) ($129,712)
9. **Reberg-Horton, S.C.,** J.M. Luginbuhl, D. Bloom, W. Everman, W. Robarge, S.P. Washburn, S.K. Bowen, S. Hu, M.S. Schroeder, and N.G. Creamer. 2015-2018. Phase II of CEFS Long-Term Systems Research: Providing the Building Blocks for Resilient Food Production Systems Reberg-Horton, USDA-SARE (Sustainable Agriculture and Research Education) ($300,000)
10. \*Atwell, R.A. and **S.C. Reberg-Horton**.  2014-2015.  Breeding Rice to Suppress Weeds: Helping Marginalized Farmers in Central America Reduce Yield Loss.  U.S. Borlaug Fellows Program –USAID and Purdue University. ($14,986)
11. \*Atwell, R.A. and **S.C. Reberg-Horton**.  2014-2016.  Identifying Regionally Adapted Winter Pea and Fava Bean Genotypes that Maximize Grain and Cover Cropping Potential.  USDA-SARE (Sustainable Agriculture and Research Education ($10,957)
12. **Reberg-Horton, S.C.,** J.P. Murphy, T.G. Isleib, and M.M. Goodman. 2012-2015.Creating an Organic Plant Breeding Center. USDA-OREI (Organic Agriculture Research and Extension Initiative) ($1,262,855)
13. **Reberg-Horton, S.C.,** J.M. Luginbuhl, M.D. Schulman, J.M. Grossman, Y.J. Cardoza, D.B. Orr, S.P. Washburn, S.K. Bowen, M.H. Poore, S. Hu, M.S. Schroeder, and N.G. Creamer. 2012-2015. CEFS Long-Term Systems Research: Providing the Building Blocks for Resilient Food Production Systems Reberg-Horton, USDA-SARE (Sustainable Agriculture and Research Education) ($300,000)
14. Hu, S., **Reberg-Horton, S.C.,** M.S. Schroeder, J.M. Grossman, Y.J. Cardoza, W. Everman, and W.P. Robarge. 2012-2015. Assessing The Greenhouse Gas Mitigation Potential Of Organic. USDA Integrated Organic Program ($749,000)
15. **Reberg-Horton, S.C.** 2011-2014. Nutrient Management in Organic No-Till. Subcontract with the Rodale Institute ($142,730)
16. Shew, H.D. and **S.C. Reberg-Horton.** 2012-2014. Stevia Production. NC Tobacco Trust Fund Commission ($98,000)
17. \*Worthington, M.L., J.P. Murphy, and **S.C. Reberg-Horton.** 2012-2014. Breeding Wheat For Increased Weed-Suppressive Ability Against Italian Ryegrass. USDA-SARE (Sustainable Agriculture and Research Education (10,952)
18. Crozier, C.R. and **S.C. Reberg-Horton**. 2012-2013. Soil Fertility Management for Rapeseed Production NC Small Grain Growers Association. ($20,000)
19. **Reberg-Horton, S.C.** 2010-2012. Organic Canola and Spelt Production. NC Tobacco Trust Fund Commission. ($73,500)
20. **Reberg-Horton, S.C.,** Place, G.T. Carter, T.E. Goodman, M.M. Isleib, T.G. Murphy, J.P. and M. Sligh. 2009-2012. Farmer Driven Breeding: Addressing the Needs of Southeastern Organic Field Crop Producers. USDA- OREI (Organic Agriculture Research and Extension Initiative). ($1,174,942).
21. **Reberg-Horton, S.C.** and E.J. Dunphy. 2012-2013. Soybean Variety Trials for Organic Farmers. NC Soybean Producers Association, Inc. ($21,419)
22. **Reberg-Horton, S.C.** 2009-2011. Improving weed and insect management in organic reduced-tillage cropping systems. USDA- OREI (Organic Agriculture Research and Extension Initiative). ($39,661).
23. **Reberg-Horton, S.C.,** R. Weisz, and J. P. Murphy. 2009-2010. Cultural practices to improve the control of Italian Ryegrass. NC Small Grain Growers Association. ($3,000).
24. Robertson, D., **S.C. Reberg-Horton**, D. Marshall and R. McReynolds. 2008-2009. New market opportunities for farmers in North Carolina. Golden Leaf Foundation. ($83,000).
25. **S.C. Reberg-Horton**, M. Gibbs, J.P. Mueller, A. Meijer, M. Wagger and M.N. Hamilton. 2008. “Reducing tillage in organic grain production with an innovative cover crop management system.” USDA NRCS Conservation Innovation Grants. ($246,902).
26. \*Place, G.T. and **S.C. Reberg-Horton**. 2008. “Traits of interest for improving weed suppressive ability in soybean during the critical period for weed competition.” USDA-SARE (Sustainable Agriculture and Research Education ($10,000).
27. Orr, D., **S.C. Reberg-Horton,** C. Moorman, and Y. Cardoza. 2008. “Whole farm-level evaluation of field border vegetation on organic management of insect pest and weed seed banks, and on farmland wildlife. USDA Integrated Organic Program. ($340,000).
28. B. Shew and **S.C. Reberg-Horton.** 2008. “Exploiting the organic peanut market: refining production systems for the Southeast.” USDA-SARE (Sustainable Agriculture and Research Education ($30,001)
29. Mueller, J.P, H. Shuijin, **S.C. Reberg-Horton**, and C.W. Raczkowski. 2008. “Reduced tillage in Organic Systems; A Soil and Water Quality Imperative.” USDA-SARE (Sustainable Agriculture and Research Education) ($190,000).
30. **Reberg-Horton, S.C.**, C. Crozier, A. Meijer and M. Gibbs. 2008. “New tools to reduce tillage in organic systems.” USDA-SARE (Sustainable Agriculture and Research Education ($14,917).
31. **Reberg-Horton, S.C.,** G.T. Place and A. Meijer. 2008. “Weed Management Tactics For No-Till Organic Soybean Production.” NC Soybean Producers Assoc., Inc. ($9,963)
32. **Reberg-Horton, S.C.,** R.W. Heiniger, C.R. Crozier, A. Meijer, T. Kleese, L. Elworth, and M.N. Hamilton. 2007. “Developing an Organic Grain Industry in North Carolina.” Golden Leaf Foundation. ($100,000)
33. **Reberg-Horton, S.C.,** and M.N. Hamilton. 2007. Increasing the Grain Supply for Organic Dairies in North Carolina. Organic Valley. ($35,502).
34. **Reberg-Horton, S.C.,** R.W. Heiniger, C.R. Crozier, A. Meijer, M.G. Burton, P.R. Weisz, T. Kleese, L. Elworth, and M.N. Hamilton. 2006. “Developing an Organic Grain Industry in North Carolina.” Golden Leaf Foundation. ($150,000)
35. **Reberg-Horton, S.C.,** R.W. Heiniger, C.R. Crozier, P.R. Weisz, A. Meijer, M.G. Burton, and M.N. Hamilton. 2006. “Developing an Organic Grain Industry in North Carolina”. Office of Extension, Engagement, and Economic Development, North Carolina State University. ($9,615).
36. **Reberg-Horton, S.C.** 2006. “Assessing the suitability of specialty oil seed crops in North Carolina.” Technology Crops International. ($14,651).
37. **Reberg-Horton, S.C.,** C.R. Crozier, M.G. Burton, R.W. Heiniger, P.R. Weisz, J.P. Murphy, M.N. Hamilton, and G.L. Ambrose. 2006. “Fostering organic grain production in North Carolina.” North Carolina Agricultural Foundation. ($59,256)
38. **Reberg-Horton, S.C.** K.W. Jennings, and D.W. Monks. 2006. “Natural Product Herbicides for Organic Farmers.” North Carolina Integrated Pest Management Program. ($4,000)
39. **Reberg-Horton, S.C.**, D.P. Marcinkowski, J.M. Halloran, T.S. Griffin, E.R. Gallandt, J.M. Jemison, R. Kersbergen, M.R. Stokes, G.W. Anderson, C.G. Schwab, and P.S. Erickson. 2005. “Reducing off-farm grain inputs on northeast organic dairy farms.” CSREES Integrated Organic Program. ($827,274)
40. Curran, W.S., D.A. Mortensen, M.E. Barbercheck, T.S. Hoover, A.G. Hulting, R.J. Hoover, **S. C. Reberg-Horton** and E.R. Gallandt. 2005. “Using cover crops and crop diversity to optimize ecologically-based weed management” Sustainable Agriculture and Research Education (SARE) Program ($98,000).
41. Gallandt, E. R., **S. C. Reberg-Horton**, E. B. Mallory, W. S. Curran, D. A. Mortensen, M. E. Barbercheck, and R. J. Hoover. 2003. “Threshold-based Cover Cropping Strategies for Weed Management.” CSREES Northeastern Region IPM. ($174,989).
42. **Reberg-Horton, S.C.** and S. Seiter. 2003. “Farmer research education program.” Sustainable Agriculture and Research Education (SARE) Program. ($141,471).
43. \*Shearin, A.F., **S.C. Reberg-Horton**, and E.R. Gallandt. 2004. “Evaluating the Effects of Weed Management on Weed Seed Predators.” Maine Agricultural Center. ($5,000).
44. **Reberg-Horton, S.C.**, R. Kersbergen, M. Hutchinson, and B. Hoskins. 2003. “Evaluating the Amino Sugar N Test for Preventing Overfertilization.” Maine Agricultural Center. ($5,000).
45. Gallandt, E.R., E. Haramoto, and **S.C. Reberg-Horton**. 2003. “Brassica Green Manures: Biofumigants for Pest Management in Potato.” Maine Agricultural Center. ($7,000).

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|  | **Collaboration Through Grant Funded Research** |
|  |  | ***Quantity*** | ***$ Amount*** |
|  | Total Awards | 40 | $9,969,000 |
|  | Awards since 2006 (date of hire at NCSU in current position) | 33:40 | $8,710,266  |
|  | Awards attained through collaboration with other NCSU Faculty | 22:33 | $5,241,412 out of $8,710,266 (60%) |
|  | First Author in Awards attained through collaboration with other NCSU Faculty  | 14:22 | $3,739,869 out of $5,241,412 (71%) |
|  | Awards attained through collaboration with faculty not at NCSU | 3:33 | $3,126,867 out of $8,710,266 (36%) |
|  | Awards attained for research exclusively in our Lab  | 8:33 | $341,987 out of $8,710,266 (4%) |
|  | **Sources of Funding since 2006** |
|  | **Source** | **Number**  | **Amount** |
|  | Rodale Institute | 1 | $142,730 |
|  | Organic Valley | 1 | $35,502 |
|  | Technology Crops International | 1 | $14,651 |
|  | Golden Leaf Foundation | 3 | $333,000 |
|  | NC Agricultural Foundation | 1 | $59,256 |
|  | NC Integrated Pest Management Program | 1 | $4,000 |
|  | NC Soybean Producers Association | 2 | $31,382 |
|  | NC Small Grain Growers Association | 2 | $23,000 |
|  | NC Tobacco Trust Fund Commission | 2 | $171,500 |
|  | Office of Extension, Engagement and Economic Development, NCSU | 1 | $9,615 |
|  | USDA-SARE (Sustainable Agriculture and Research Education) | 9 | $996,539 |
|  | U.S. Borlaug Fellows Program: USAID and Purdue University | 1 | $14,986 |
|  | USDA-NRCS Conservation Innovation Grant | 2 | $1,245,371 |
|  | USDA-OREI (Organic Agriculture Research and Extension Initiative) | 3 | $4,476,144 |
|  | USDA Integrated Organic Program | 1 | $1,089,000 |
| Invited Presentations |

1. Organic grain groduction in the southern United States: how a system of do nots creates sustainability. Symposium on Sustainability Challenges in Organic Agriculture. Agronomy/Crop Science/Soil Science Societies of America, Phoenix, AR, November 6-9, 2016.
2. Best management practices and input costs for southeastern organic grain production. Emerging Opportunities for Organic Grain Production and Marketing in South Carolina, Santee, SC. December 8, 2015
3. Creation of an organic plant breeding center. USDA-National Institute of Food and Agriculture Project Directors Workshop. Washington, D.C. October 20, 2015.
4. Organic plant breeding. Grass Up! An educational event for congressional staffers hosted by Organic Valley, Washington, D.C. October 6, 2015.
5. Climate Smart Agriculture: innovation and resiliency. French American Climate Talks (FACTS). Raleigh, NC. August 27, 2015
6. Plant Breeding for Organic Systems.  University of Maryland and Agricultural Research Service Joint Symposium 2014: Organic Production; Food, Health, Ecosystems.  Beltsville, MD, November 13, 2014.
7. Organic Field Crop Production.  University of Costa Rica.  San Jose, Costa Rica, October 20, 2014.
8. The basics of organic production in southeastern field crops. Tobacco Workers Conference. Pinehurst, NC. January 14, 2014.
9. Creation of an organic plant breeding center. USDA-National Institute of Food and Agriculture Project Directors Workshop. Washington, D.C. January 13, 2014.
10. Organic production in NC. Mount Olive College. Goldsboro, NC. October 21, 2013.
11. Cover crop mulches for water conservation. Natural Resources Conservation Service You Tube site. September 17, 2013.
12. Overview of organic grain production the Southeast. Organic Grain and Oilseed Workshop. At the National Environmentally Sound Production Agriculture Laboratory, Tifton, GA. June 27, 2013
13. Organic soybean production. Organic Grain and Oilseed Workshop. At the National Environmentally Sound Production Agriculture Laboratory, Tifton, GA. June 27, 2013
14. Cover crop diversity and management strategies. Southeastern Soil Health Field Day. Natural Resource Conservation Service. Albemarle, NC. May 14, 2013.
15. Farming Strategies in Today's Changing Climate. Climate Adaptation Conference, Abundance Foundation. Pittsboro, NC. February 8, 2013.
16. Organic grain systems in the Carolinas, Carolina Farm Stewardship Association annual conference, Greenville, SC, October 28, 2012.
17. Organic Agriculture Training Program for the Natural Resources Conservation Service, Charleston, SC, September 25, 2012.
18. Rapeseed production in North Carolina, Franklin County, August 2, 2012.
19. Organic Grain and Vegetable Conference, Queen Anne’s county, MD, March 6, 2012
20. Reberg-Horton, S.C., J.M. Grossman, W.C. Johnson, T.S. Kornecki, A. Meijer, A.J. Price, G.T. Place and T.M. Webster. 2010. Utilizing cover crop mulches to reduce tillage in organic systems in the Southeast. Symposium on Organic No-till at ASA-CSSA-SSSA International Annual Meetings. Long Beach, CA.
21. Reberg-Horton, S.C, S. Mirsky, M. Cavigelli, J. Teasdale, R. Heiniger, A. Meijer, A.K. Culbreath, C. Crozier, G.T. Placer, L Grabau, H. Schomberg, J. Grossman, W.C. Johnson and E.G. Cantonwine. 2010. Challenges and opportunities with organic grain production in the Southeast. Symposium on Organic Grain Production at ASA-CSSA-SSSA International Annual Meetings. Long Beach, CA.
22. Reberg-Horton, S.C. 2010. Statistical tools for system research. Agricultural Systems Research Workshop. University of Georgia conference sponsored by southern SARE. Athens, GA.
23. Reberg-Horton, S.C. 2009. Organic field crops: opportunities and challenges. Annual Meeting of the North Carolina Weed Science Society
24. Reberg-Horton, S.C. 2009. Traditions and conventions in the use of repeated measures analysis, contrasts, and pairwise comparison. Annual Meeting of the Northeastern Weed Science Society. Baltimore, Maryland.
25. Reberg-Horton, S.C. 2009. Traditions and conventions in the use of repeated measures analysis, contrasts, and pairwise comparison. Annual Meeting of the North Central Weed Science Society. Kansas City, Missouri.
26. S. Chris Reberg-Horton. 2008. Weed and fertility management in organic grains. Introduction to Organic Grain Production by Braswell Milling. Rocky Mount, NC.
27. S. Chris Reberg-Horton, J. Paul Mueller, and Nancy G. Creamer. 2007. Combining short-term and long-term research on organic farming systems at the center for environmental farming systems. Agronomy Society of America, New Orleans, Louisiana.
28. Reberg-Horton, S.C. 2005. Analysis of on-farm research data: where statistical ideals meet field realities. Farmer Driven Research Conference, Portsmouth New Hampshire.
29. Reberg-Horton, S.C. 2003. Experimental Design and Statistical Analysis of On-farm Research. On-farm Research for Extension Agents. Cornell University, Ithaca, New York.
30. Reberg-Horton, S.C. 2003. Managing weed seedbanks. New England Vegetable & Berry Conference, Manchester, New Hampshire, December 17, 2003.

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| Field days and Workshops Hosted |

1. Cover Crop Conference for the Southeast. July 18 and 19, in Goldsboro, NC. 375 attendees with participation from all 16 states/territories in USDA southern SARE region.
2. Organic Farm Tour: Reedy Fork Farm, Alamance County, July 7, 2015
3. Wheat and Barley for Bread and Beer: production in WNC, Buncombe County, June 4, 2015
4. Carolina Organic Commodity and Livestock Conference. February 12, 2015
5. Stevia Production and Establishment, Moore County, June 24, 2014
6. Production and Disease Management for Stevia in NC. Kinston, August 19, 2014.
7. Carolina Organic Commodity and Livestock Conference. February 12, 2014
8. Organic Grain Production Field Day, Goldsboro. July 30, 2013.
9. Stevia Production in NC, Avoca Farms, Merry Hill, NC. July 11, 2013
10. Carolina Organic Commodity and Livestock Conference. Rocky Mount, NC. February 14 and 15, 2013.
11. Chair, Center for Environmental Farming Systems Field Day, May 3, 2012.
12. Organic canola field tour. Organic farm in Nash County. May 30, 2012.
13. Organic canola field tour. Organic farm in Hyde County. May 31, 2012.
14. Organic grains summer workshop. Organic farm in Nash County. July 19, 2012.
15. Carolina Organic Commodity and Livestock Conference. Rocky Mount. January 12-13, 2012.
16. Organic Canola and Spelt Production and Marketing – Goldsboro, June 2, 2011. Toured field research plots and discussed market with regional buyers.
17. Carolina Organic Commodity and Livestock Conference – Oxford, January 20-21, 2011
18. The Roll Kill/No-till Method for Organic Row Crops. On-farm workshops held for the Natural Resource Conservation Service, county extension agents and farmers:
19. Hoffner Dairy Farm, Rowan County, July 15, 2010
20. Pocosin Farms, Hyde County, June 8, 2010.
21. Breeze Farm, Orange County, April 28, 2009.
22. Hoffner Dairy Farm, Rowan County, May 7, 2009.
23. Looking Back Farm, Perquimans County, May 28, 2009.
24. Pocosin Farms, Hyde County, June 4, 2009.
25. Webinar – New Organic Breeding Coalition: Breeding for Organic Production Systems. Held on Jan 24th, 2010.
26. NC Commercial Organic Production Conference, January 15, 2010. I conducted workshops on no-till production and plant breeding for organic grain crops.
27. Organic Field Crops Conference. Rocky Mount, February 27th, 2009.
28. Organic Wheat: From Field To Bread, June 11th, 2009. Mountain Research Station, Waynesville, NC.
29. Out-of-State Organic Grain Bus Tour, July 24-26. 2008. A tour of farms and research plots in Maryland, Pennsylvania and Virginia. Speakers included organic farmers from the eastern shore of Maryland, scientists from the USDA-Agricultural Research Service station in Beltsville, researchers at the Rodale Institute, PA, extension agents from Maryland and Virginia and the state agronomist for the Natural Resource Conservation Service in Virginia.
30. Organic Grain Introduction. March, 25, 2008, Center for Environmental Farming Systems, Goldsboro, NC.
31. The Future for Organic Grains in Hyde County. December 4, 2007.
32. Organic Grain Research and Farm Tour. August 7, 2007.
33. Organic Grains in Northeastern NC. August 2, 2007.
34. Organic Corn and Soybeans in Wayne and Duplin Counties. July 17, 2007.
35. Weed Management in Organic Grains. July 11, 2006. Center for Environmental Farming Systems, Goldsboro, NC.
36. Organic corn and soybean management. August 2, 2006. Macha-Pungo Farm, Hyde County, NC.
37. Organic grain farmers’ panel. December 12, 2006. Center for Environmental Farming Systems, Goldsboro, NC.
38. Organized the twice yearly Dairy Forage conference that is co-hosted by the Maine Organic Milk Producers.
39. Co-hosted the annual Sustainable Agriculture Field Day held at the Roger’s Research Farm in Stillwater, Maine.
40. Co-hosted the annual 2-day Certified Crop Advisors Training for New England.

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| Teaching |

Guest lecturer at NC State University in the following courses:

CS 430/590 Advanced Agroecology

CS 230 Introduction to Agroecology

CS 201 Crop Adaptation and Production

SSC 495/590 Special Topics - Soil Agroecology

CS/SSC 620 Critical Issues in Sustainable Agriculture

CS 717 Weed Management Systems

CS 312 Grassland Management for Natural Resources Conservation

CS 415 Integrated Pest Management

ENT 495/590 Special Topics – Organic Pest Management

CS 224, Seeds, Biotechnology and Society

ENT 791, Special Topics in Entomology – Grant Writing

CEFS Each summer, I lead an all-day workshop for interns with the Center for Environmental Farming Systems on organic grain production.

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| **Impact Statement** |

When my position began in 2006, less than 1,000 acres of organic grains were grown in the state. The large processors in the state, Braswell Milling, Lindley Mills, and Organic Valley were importing the majority of their grains from out of state. Our efforts have been aimed at providing production and storage information so that NC farmers can supply these markets.

**What has been done**

I have an active research program on organic grain production covering issues of weed management, soil fertility, and cover crop management. I also collaborate extensively with plant breeders in corn, soybeans, wheat, peanuts and now several cover crop species to develop breeding protocols appropriate to organic systems. Access to advanced genetics has been identified by my farmers as one of their largest concerns.

My students participate in every aspect of the research and extension program. We help host a conference on organic commodities each winter and a field day each summer where my students present and network with the farmers. They also publish on my website and in my newsletter https://organicgrains.ces.ncsu.edu/

**Impact**

Organic grain acreage has grown quickly in the state to over 12,000 acres, with NC now the leader in organic acreage in the region. North Carolina’s success has attracted new buyers into the market. Perdue now has multiple buying stations in NC and operates an organic soybean crusher in Hyde County. Pilgrim’s Pride began producing organic broilers in 2016 and are building an organic grains processing facility in Staley, NC. Cal-Maine recently opened an organic egg laying operation in Louisburg that combined with our other production makes us amongst the top producers of organic eggs in the country. The net effect is that while our organic grain supply has grown, the demand has grown faster and we are still only meeting a small proportion of the demand. Fortunately 2016 saw a wave of new farmers trying to enter the market as the price premium for organic is approximately 3X conventional across commodities.