

# Deirdre Griffin LaHue, Ph.D.

Academic Faculty, Assistant Professor  
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## **APPOINTMENT**

**Assistant Professor of Soil Quality and Sustainable Soil Management**, January 2019 - Present  
80% Research and Extension, 20% Teaching

## **EDUCATION**

**Ph.D., Soils and Biogeochemistry**, University of California, Davis, 2018

Committee members: Dr. Kate M. Scow (Chair), Soil Microbial Ecology; Dr. Sanjai J. Parikh, Soil Chemistry;  
Dr. Jorge R. Rodrigues, Soil Microbiology  
National Science Foundation (NSF) Graduate Research Fellow

**M.S., Soils and Biogeochemistry**, University of California, Davis, 2015

Major professors: Dr. Kate M. Scow, Soil Microbial Ecology; Dr. Sanjai J. Parikh, Soil Chemistry

**B.S., *Summa cum laude*, Environmental Science and Policy**, University of Maryland, College Park, 2012

Concentration: Environment and Agriculture, Minor: Soil Science

## **PUBLICATIONS<sup>1</sup>**

### **A. Refereed Academic Journal Articles**

Zhang, H., C. Miles, B. Gerdeman, **D.G. LaHue**, and L.W. DeVetter. 2021. Plastic mulch use in perennial fruit cropping systems - A review. *Scientia Horticulturae*. 281:109975. (6)

Li, M., Schmidt, J.E., **LaHue, D.G.**, Lazicki, P.A., Kent, A., Machmuller, M.B., Scow, K.M., Gaudin, A.C. 2020. Impact of irrigation strategies on tomato root distribution and rhizosphere processes in an organic system. *Frontiers in Plant Science*. 11:360. (1, 3, 4, 5, 6)

Shackelford, G.E., Kelsey, T.R., Sutherland, W.J., Kennedy, C.M., Wood, S.A., Gennet, S., Karp, D.S., Kremen, C., Seavy, N.E., Jedlicka, J.A., Graveur, K., Kross, S.M., Bossio, D.A., Muñoz-Sáez, A., **LaHue, D.G.**, Garbach, K., Ford, L.D., Felice, M., Reynolds, M.D., Rao, D.R., Boomer, K., LeBruhn, G., Dicks, L.V. 2019. Evidence synthesis as the basis for decision analysis: A method of selecting the best agricultural practices for multiple ecosystem services. *Frontiers in Sustainable Food Systems*. 3:83. (3, 6)

Margenot, A.J., **Griffin, D.E.**, Alves, B.S.Q., Rippner, D.A., Li, C., Parikh, S.J. 2018. Substitution of peat moss with softwood biochar for soil-free marigold growth. *Industrial Crops and Products*. 112: 160-169. (3, 4, 5, 6)

<sup>1</sup>Key to indicators or description of contributions to Publications and Creative Work: 1 = Developed the initial idea; 2 = Obtained or provided funds or other resources; 3 = Collected data; 4 = Analyzed data; 5 = Wrote/created product; 6 = Edited product; 7 = Student paper; \* = Corresponding author.

**Griffin, D.E.\***, Wang, D., Parikh, S.J., Scow, K.M. 2017. Short-lived effects of walnut shell biochar on soils and crop yields in a long-term field experiment. *Agriculture, Ecosystems, and Environment*. 236: 21-29. **(1, 2, 3, 4, 5, 6)**

Wang, D., **Griffin, D.E.**, Parikh, S.J., Scow, K.M. 2016. Impact of biochar amendment on soil water soluble carbon in the context of extreme hydrological events. *Chemosphere*. 160: 287-292. **(3, 6)**

**Griffin, D.E.\*** 2012. Managing Abiotic Factors of Compost to Increase Soilborne Disease Suppression. *Journal of Natural Resources and Life Sciences Education*. 41: 31-34. **(1, 5, 6)** (Student paper competition winner)

#### **Submitted:**

- Rodriguez, A.M., T.R. Alexander, C.A. Miles B.S. Gerdeman, **D. Griffin-LaHue\***. Renewed Focus on Biological Control Use in Southern Puerto Rico Agriculture. *Hort Technology*. **(6, 7)**

#### **In prep:**

- Griffin-LaHue, D.\***, S. Ghimire, M. Flury, C.A. Miles. In-field degradation of soil-biodegradable plastic mulch films in a Mediterranean climate. Intended journal: *Science of the Total Environment* **(3, 4, 5, 6)**
- Griffin-LaHue, D.\***, S. Galinato, T. Una, B. Schacht, G. LaHue, L. DeVetter, C. Benedict. Alternative Tillage in Raspberry Alleyways to Reduce Costs and Improve Soil Health. Intended journal: *HortTechnology*. **(1, 2, 3, 4, 5, 6)**
- Una, T., S. Seefeldt, D. McMoran, **D. Griffin-LaHue\***. Cover crop suitability effects on soil health for potato systems in a maritime climate. Intended journal: *Agrosystems, Geoscience, and Environment*. **(1, 2, 3, 4, 5, 6, 7)**
- Bagnall, D.K., C.L.S. Morgan, M. Cope, G.M. Bean, S.B. Cappellazzi, K.L.H. Greub, D. Liptzin, C.E. Norris, E.L. Riche, P.W. Tracy, ..., **D. Griffin-LaHue**, et al. Predicting effects of soil organic carbon on plant-available water. Intended journal: *Agronomy Journal* **(2, 3, 6)**
- Griffin-LaHue, D.\***, D. Wang, A.C.M. Gaudin, K.M. Scow. Investigating spatial patterns in the effects of subsurface drip irrigation on soil microbial biomass and diversity: implications for soil health. Intended journal: *Soil Biology and Biochemistry*. **(1, 2, 3, 4, 5, 6)**
- Griffin-LaHue, D.\***, Tautges, N.E., Mahmood, A., Scow, K.M., Parikh, S.J. Soil texture impacts biochar effects on root growth and nodulation in cowpea (*Vigna unguiculata*). Intended journal: *Biochar*. **(1, 2, 3, 4, 5, 6)**
- Waterhouse, H., F. Aburto, G. Reese, **D. Griffin-LaHue**, W.B. Salls, D.A. Rippner, A.T. O'Geen, et al. Improved rangeland management for landscape multifunctionality and soil health. Intended journal: *Agriculture, Ecosystems, and Environment*. **(1, 3, 4, 5, 6)**

#### **B. Refereed Extension Articles**

Sullivan, D.M., **D. Griffin-LaHue**, B. Dari, A.I. Bary, C.G. Cogger. 2021. PNW 511: Worksheet for calculation biosolids application rates in agriculture. *Pacific Northwest Extension*. **(6)**

#### **Accepted with minor revisions:**

- DeVetter, L.W., B.C. Strik, J.A. Fernandez-Salvador, D. Griffin-LaHue, C. Benedict, et al. PNW 598: Commercial Red Raspberry Production in the Pacific Northwest, Revision 2020. Chapters 4, 5, 7. *Pacific Northwest Extension*. **(5, 6)**

<sup>1</sup>Key to indicators or description of contributions to Publications and Creative Work: 1 = Developed the initial idea; 2 = Obtained or provided funds or other resources; 3 = Collected data; 4 = Analyzed data; 5 = Wrote/created product; 6 = Edited product; 7 = Student paper; \* = Corresponding author.

### *In prep:*

- Dari, B., D. Sullivan, **D. Griffin-LaHue**, E. Verhoeven, A. Tomasek, A. Moore, A. Bary, C. Cogger. PNW 508: Fertilizing with Biosolids. *Pacific Northwest Extension* (3, 4, 5, 6)

### **C. Popular Press Articles**

**Griffin-LaHue, D.** *What is “soil health”, anyway?* Featured article in the WSU Soil Health quarterly newsletter and on the WSU Soil Health website. June 5, 2020. <https://soilhealth.wsu.edu/2020/06/05/what-is-soil-health-anyway/> (185 visits since posted)

**Griffin-LaHue, D.** *Soil Health Part II - Active Carbon and Effects of Long-term Biosolids Applications.* Featured Research Short-Story in the Northwest Biosolids monthly newsletter and website. March 20, 2020. <https://nwbiosolids.org/whats-happening/research-short-story/2020/march/soil-health-part-ii-active-carbon-and-effects-long>

**Griffin-LaHue, D.** *Soil Health Part I – What is soil health, anyway?* Featured Research Short-Story in the Northwest Biosolids monthly newsletter and website. February 24, 2020. <https://nwbiosolids.org/whats-happening/research-short-story/2020/february/soil-health-part-i-what-soil-health-anyway>

### **GRANTS and EXTRAMURAL AWARDS<sup>2</sup>**

	Funded			Unfunded		
Year	Number	Total	My program	Number	Total	My program
2021	6	\$1,197,039	\$393,794	1	\$79,994	\$0
2020	9	\$656,255	\$122,577	6	\$18,007,002	\$786,816
2019	7	\$620,875	\$485,863	2	\$13,700,000	\$563,689
<b>Total</b>	<b>21</b>	<b>\$2,434,572</b>	<b>\$987,333</b>	<b>8</b>	<b>\$31,707,002</b>	<b>\$1,350,505</b>

### **A. Funded Grants and Contracts**

Tracking the Tango Between Tillage, Soil Health, and Weeds. C. Benedict, I. Burke, **D. Griffin LaHue**, G. LaHue, T. Potter, N. Singh. WSU BioAg, 3/2021-3/2023, \$39,596 (1, 2, 3, 4, 5, \$14,901).

Biosolids Management in Agricultural Systems. **D.G. LaHue (PI)**, A. Bary, M. Flury. King County Department of Natural Resources and Parks, Resource Recovery Division, 1/2021 – 12/2021, \$93,640 (1, 2, 3, 4, 5, \$93,640)

Enhancing Human Health and Nutrition from Soil to Society using Quinoa as a Model Crop Species. K. Murphy, **D. Griffin LaHue**, G. Ganjyal, F. Carbonero. Foundation for Food and Agriculture Research (FFAR): Seeding Solutions, 1/2021 - 12/2024, \$1,000,000 (2, 3, 4, 5, \$249,818).

Evaluating cover crop suitability for improved soil health in vegetable seed systems. **D.G. LaHue (PI)**, L. du Toit, B. Gerdeman, D., McMoran, S. Seefeldt. Northwest Agricultural Research Foundation (NARF), 1/2021 - 1/2022, \$18,032 (1, 2, 3, 4, 5, \$18,032).

Evaluating potential trade-offs of cover crop species on soilborne pathogens and pests in the context of soil health. **D.G. LaHue (PI)**, L. du Toit, B. Gerdeman, D., McMoran, S. Seefeldt. Washington State Department on Pesticide Registration (WSCPR), 1/2021 -12/2021, \$17,403 (1, 2, 3, 4, 5, \$17,403).

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Valuing nitrogen release from high organic matter soils, Year 3. G.T. LaHue, **D.G. LaHue (Co-PI)**, L.W. DeVetter, C. Benedict. Washington Blueberry Commission Research Grant (WBC), 3/2021-3/2022, \$28,368, (2, 3, 4, \$0).

Assessing the soil health of Eastern Washington specialty crops: hops, onion, potato, pulses, sweet corn, tree fruit, and wine grapes. Seman-Varner, R., **D.G. LaHue (Co-Lead PI, WSU lead)**, A. McGuire. Washington State Department of Agriculture, Specialty Crop Block Grant Program (WSDA SCBG), 9/2019 – 9/2022, \$499,996 (1, 2, 3, 4, 5, \$440,399).

WSU Biosolids Research & Extension Activities. A. Bary, **D. Griffin LaHue**, M. Flury. Northwest Biosolids, 7/2020 - 6/2021, \$36,000 (2, 3, 4, 5, \$5,700).

Managing the potato microbiome for improved soil and potato health. **D.G. LaHue (PI)**, T. Sullivan. Northwest Potato Research Consortium (NPRC), 3/2020-3/2021, \$42,519 (1, 2, 3, 4, 5, \$24,451).

Demonstration of the Benefits of Subirrigation Using Water Level Control Structures for Improved Agricultural Irrigation Water Use. N. Embertson, C. Clark, G. LaHue, **D.G. LaHue (Co-PI)**. NRCS Conservation Innovation Grant (NRCS CIG), 1/2020 – 12/2022, \$415,291 (2, 3, 4, 5, \$44,674).

Measuring and mitigating soil compaction in raspberry fields for improved soil conditions. **D.G. LaHue (PI)**, C. Benedict, H. Neely, G.T. LaHue. Washington Red Raspberry Commission Research Grant, 3/2020 - 3/2021, \$10,000 (2, 3, 4, 5, \$10,000).

Improving the Potential for Nutrient Recovery to Contribute to Improved Nutrient Export and Nutrient Management by Dairies. Yorgey, G., K. Hills, **D.G. LaHue (Co-PI)**, K. Rajagopalan. WSU Applied Bioenergy Research Program (Appendix A), 1/2020 - 12/2021, \$59,953 (2, 3, 4, 5, \$5,097).

Valuing nitrogen release from high organic matter soils, Year 2. G.T. LaHue, **D.G. LaHue (Co-PI)**, L.W. DeVetter, C. Benedict. Washington Blueberry Commission Research Grant (WBC), 3/2020-3/2021, \$16,640, (2, 3, 4, \$0).

Evaluating cover crop suitability for improved soil health in vegetable seed systems. **D.G. LaHue (PI)**, L. du Toit, B. Gerdeman, D., McMoran, S. Seefeldt. Northwest Agricultural Research Foundation (NARF), 1/2020 - 1/2021, \$12,402 (1, 2, 3, 4, 5, \$12,402).

Evaluating potential trade-offs of cover crop species on soilborne pathogens and pests in the context of soil health. **D.G. LaHue (PI)**, L. du Toit, B. Gerdeman, D., McMoran, S. Seefeldt. Washington State Department on Pesticide Registration (WSCPR), 1/2020 -1/2021, \$11,953 (1, 2, 3, 4, 5, \$11,953).

Biosolids, Cover Cropping, and Grazing for Synergistic Soil Health Benefits. A. Bary, **D.G. LaHue (Co-PI)**. King County Department of Natural Resources and Parks, Resource Recovery Division, 1/2020 – 12/2020, \$51,497 (1, 2, 3, 4, 5, \$8,500)

Improving potato system sustainability through locally relevant soil health indicators. **D.G. LaHue, (PI)**. WSU New Faculty Seed Grant, 5/2019-8/2021, \$16,014 (1, 2, 3, 4, 5, \$16,014).

Planning Grant: New mulch technologies and improved end-of-life management. L.W. DeVetter (PI), C. Miles, **D.G. LaHue (Co-PI)**, M. Flury, M. Bolda, S. Wortman, S. Agehara, C. Benedict, H. Liu, T. Marsh, T. Chi, S. Galinato, K. Englund, M. Perez-Garcia, G. Yorgey, J. Goldberger, L. McGowen. United States Department of Agriculture Specialty Crop Research Initiative (USDA SCRI), 9/2019 – 8/2020, \$49,796 (\$0).

A Review of Synergistic Climate-Smart Agricultural Practices for the US Climate Alliance States. **D.G. LaHue**, J. Moore-Kucera., American Farmland Trust contract, 6/2019-12/2021, \$12,000 (2, 4, 5, \$12,000).

Reducing alleyway tillage to decrease costs and improve soil health. **D.G. LaHue, (PI)**, G.T. LaHue, L.W. DeVetter, C. Benedict. Washington Red Raspberry Commission Research Grant (WRRG), 3/2019-3/2020 \$7,070 (2, 3, 4, 5, \$7,070).

Valuing nitrogen release from high organic matter soils. G.T. LaHue, **D.G. LaHue (Co-PI)**, L.W. DeVetter, C. Benedict. Washington Blueberry Commission Research Grant (WBC), 3/2019-3/2020, \$15,739 (2, 3, 4, \$0).

Cover crop alternatives for potato growers in western Washington. **D.G. LaHue**, D. McMoran, S.S. Seefeldt. Northwest Potato Research Consortium (NPRC), 4/2019 - 12/2020, \$20,259 (2, 3, 4, 5, \$10,380).

## **B. Grants Under Review**

**Total pending: \$748,021; Total pending to my program: \$62,378**

Managing the potato microbiome for improved soil and potato health. **D. Griffin LaHue (PI)**, T. Sullivan. Northwest Potato Research Consortium (NPRC), 3/2021-3/2022, \$39,961 (1, 2, 3, 4, 5, \$19,698).

Comparison of potato yields, soil health, and pathogen loads in virgin and non-virgin soils. D. Wheeler, **D. Griffin LaHue (Co-PI)**, C. Gleason, K. Frost. Northwest Potato Research Consortium (NPRC), 3/2021-3/2022, \$63,053 (1, 2, 3, 4, 5, \$22,417).

Volatile Organic Compounds as a High-throughput Soil Biological Health Indicator. H. Tao (PI), S. Sankaran, T. Paulitz, T. Murray, **D. Griffin LaHue**. WSU Emerging Research Issues (ERI). 7/2021-6/2023. \$79,994 (3, 5, \$0).

Soil compaction and soil health: Predicting the changes to on-farm hydrology using field-scale soil compaction mapping and dynamic parameterization. H. Neely, D. Griffin LaHue, et al. USDA NIFA AFRI Foundational and Applied Science, \$500,000 (2, \$0).

The impact of tillage on soil microbial community resilience and the consequences for potato production. T. Potter (PD), **D. Griffin LaHue (Primary Mentor)**, USDA NIFA AFRI Postdoctoral Fellowship Program. 7/2021 – 6/2023, \$165,000 (2, 3, 5).

## **C. Previously Funded Competitive Grants (UC Davis)**

Demonstrating impacts of cover crops and compost on soil carbon and greenhouse gas emissions in irrigated tomatoes. Scow, K.M., R. Schmidt, **D.E. Griffin (Co-author)**, L. Crothers. California Department of Food & Agriculture (CDFA), Healthy Soils Program Demonstration Project, 2017-2020, \$250,000 (1, 2, 3, 4, \$0).

Effects of irrigation and management practices on soil health and crop properties of processing tomatoes, Scow, K.M., **D.E. Griffin (Co-author)**, L. Crothers, D. Wang. California Tomato Research Institute (CTRI) Grant, 2017, \$30,000 (1, 2, 3, 4, 5, \$0).

## **PRESENTATIONS**

### **A. Academic oral presentations**

\*Student presentation

### *National and International*

- Sloan C.\*, L.W. DeVetter, **D. Griffin LaHue**, C. Benedict, G.T. LaHue, Quantifying Nitrogen Supply from Soil Organic Matter for Highbush Blueberry Production, Oral Presentation at American Society for Horticultural Science Annual Meeting, Virtual, August 11, 2020

#### *From UC Davis:*

- **Griffin, D.E.**, Gaudin, A.C.M., Scow, K.M. A spatial investigation of the impacts of subsurface drip irrigation on soil quality and the microbiome. Oral presentation at the Soil Science Society of America Annual Meeting, San Diego, CA, January 7, 2019.
- **Griffin, D.E.**, D. Wang, S.J. Parikh, K.M. Scow. Short-lived Effects of Walnut Shell Biochar in a Long-term Field Experiment. Oral presentation at ASA-CSSA-SSSA Annual Meetings, Phoenix, AZ, November 6-9, 2016
- Torbert, E. (presenter), **D.E. Griffin**, C. Peterson, K.M. Scow. Managing carbon sequestration for organic agriculture. Presented at a conference of the Organic Fertilizer Association of California, December 3, 2015.
- Scow, K.M. (presenter), K. Gravuer, **D.E. Griffin**, R. Schmidt. Managing Soil Biology to Increase Sustainability of Conventional Farming Systems: Learning from Long Term Experiments. ASA-CSSA-SSSA Annual Meetings, Long Beach, CA, November 2-5, 2014.
- Wang, D. (presenter), K.M. Scow, **D.E. Griffin**, S.J. Parikh, D. Yan, H. Wang. The Impacts of Biochar on Soil Nutrient Leaching in the Context of Extreme Hydrological Processes. SSSA Ecosystem Services Conference, Sacramento, CA, March 3-6, 2014.
- Scow, K.M. (presenter), **D.E. Griffin**, L.C.R. Silva. The Anthropocene and Soil Biology. ASA-CSSA-SSSA Annual Meetings, Cincinnati, OH, October 21-24, 2012.

### *State and Regional*

- **Griffin LaHue, D.**, A. Bary. Effects of biosolids on soil health in dryland systems of Eastern Washington. Pacific Northwest Nutrient Cycling, Food Safety, and Soil Health Conference, October 29, 2020 (Invited presentation)
- **Griffin LaHue, D.** Biosolids as an organic matter source for improved soil health. BioFest, Blaine, WA, September 10, 2019. (Invited presentation)
- **Griffin LaHue, D.** What you've always wanted to know about the nitrogen cycle. Healthy Soils, Healthy Region Workshop, Pendleton, OR, March 12, 2019. (Invited presentation)

## **B. Academic poster presentations**

### **\*Student presentation**

#### *National and International*

- Sarpong, K. A.\*, M. McIlquham, L. Michel, **D. Griffin LaHue**, Developing a Soil Health Assessment Framework for Specialty Crop Systems and Soils of Washington State. Poster presentation at ASA-CSSA-SSSA International Annual Meeting, November 9-13, 2020, Virtual.
- Una, T.M.\*, S. S. Seefeldt, D. McMoran, **D. Griffin LaHue**, How do cover crops effect seasonal dynamics of carbon and nitrogen pools? Poster presentation at American Society of Agronomy-Crop Science Society of America- Soil Science Society of America Annual Meetings, November 9-13, 2020, Virtual.
- **Griffin LaHue, D.**, A. Bary, C. Benedict. Coordinated evaluation of soil health in dryland systems with Unmanned Aircraft Systems' imagery and on-the-ground measurements. Poster presentation at ASA-CSSA-SSSA International Annual Meeting, November 9-13, 2020, Virtual.

*From UC Davis (selected)*

- **Griffin, D.E.,** D. Wang, A.C.M. Gaudin, J.E. Schmidt, S.J. Parikh, K.M. Scow. How do moisture patterns in subsurface drip irrigation impact soil health in organic systems? Poster presented at the ASA-CSSA-SSSA Annual Meetings, Tampa, FL, October 2017. (1<sup>st</sup> place winner in Organic Management Systems Community)
- **Griffin, D.E.,** D. Wang, S.J. Parikh, K.M. Scow. Effects of walnut shell biochar on microbial communities and nutrient cycling in a long-term field experiment. Poster presented at the Soil Ecology Society Meeting, Fort Collins, CO, June 2017.
- **Griffin, D.E.,** D. Wang, K.M. Scow, S.J. Parikh. 2014. Effects of biochar on soil microbial communities and nitrogen cycling in two California nutrient management systems. Poster presented at ASA-CSSA-SSSA Annual Meetings, Long Beach, CA, November 2014. (1<sup>st</sup> place winner in Soil Biology and Biochemistry Division)
- **Griffin, D.E.,** K.M. Scow, S.J. Parikh. 2013. Interactions of biochar with legume-rhizobia symbiosis. Poster presented at ASA-CSSA-SSSA Annual Meetings, Tampa, FL, November 2013.
- O'Geen, A.T., F.A. Aburto, A. D'Elia, M. Felice, **D.E. Griffin,** D. Rippner, G.L. Rees, W. Salls, K.M. Scow, Z. Tian, H. Waterhouse. Broadening Student Involvement in Research and Extension of Rangeland Soil Ecosystem Services. Poster presented at SSSA Ecosystem Services Conference, Sacramento, CA, March 3-6, 2014.

**State and Regional**

*From UC Davis*

- **Griffin, D.E.,** D. Wang, A.C.M. Gaudin, J.E. Schmidt, S.J. Parikh, K.M. Scow. How do moisture patterns in subsurface drip irrigation impact soil health in organic systems? Poster presented at the American Society of Agronomy - California Chapter Annual Meeting, Fresno, CA, January 2018. (1<sup>st</sup> place winner in poster competition)
- **Griffin, D.E.,** D. Wang, S.J. Parikh, K.M. Scow. Short-lived effects of walnut shell biochar in a long-term field experiment. Poster presented at the American Society of Agronomy - California Chapter Annual Meeting, Fresno, CA, January 2017. (1<sup>st</sup> place winner in poster competition)

**C. Extension oral presentations**

**\*Student presentation**

**State and Regional**

- **Griffin LaHue, D.** Establishing a soil health baseline and benchmarks for Washington specialty crop systems, SoilCon: Washington Soil Health Week, February 8, 2021. Audience: 230 agricultural professionals and researchers primarily from western US. (Invited presentation)
- **Griffin LaHue, D.,** A. Bary. How do biosolids impact crops and soils? Northwest Biosolids webinar: Biosolids Research 201, January 26, 2021. Audience: 40 members of Northwest Biosolids' organization (Invited presentation)
- **Griffin LaHue, D.** Washington's Soil Health Initiative and Establishing Soil Health Benchmarks for Washington's Specialty Cropping Systems. Hermiston Farm Fair, Hermiston, OR, December 3, 2020. Audience: 183 agricultural professionals in the PNW Columbia Basin. (Invited presentation)
- **Griffin LaHue, D.,** H. Neely, D. Mullins, G. LaHue, C. Benedict. Assessing soil compaction in raspberry alleyways. Small Fruit Conference, Lynden, WA, December 1, 2020.
- **Griffin LaHue, D.** Soil Health Concepts and How to Apply Them Across Systems and Soils. Washington State Grape Society Meeting, November 18, 2020. Audience: 75 grape industry professionals (producers, winemakers, researchers, students) (Invited presentation)
- **Griffin LaHue, D.** Opening the Black Box: Integrating soil biology into soil health testing and system management. Columbia Basin Soil Health Working Group meeting, July 21, 2020. Audience: 12 potato

industry professionals (processors, commissioners), 5 farmers, 10 researchers (Invited by Washington Potato Commission)

- Koenig, R., C. Kruger, **D. Griffin LaHue (co-presentation)**. Managing soil health in potatoes. 2019 Potato Summit of the Washington Potato Commission, Spokane, WA, December 10, 2019. Audience: ~60 attendees, 45 growers, 15 agricultural professionals (Invited presentation).
- **Griffin LaHue, D.**, T. Una, B. Schacht, C. Benedict, G.T. LaHue, L.W. DeVetter. Alternative tillage in raspberry alleyways to reduce costs and improve soil health. Small Fruit Conference, Lynden, WA, December 5, 2019. Audience: ~30 attendees, ~10 farmers.
- **Griffin LaHue, D.** Soil health across Washington State. Pacific Northwest Vegetable Association Conference, Kennewick, WA, November 20, 2019. Audience: ~50 farmers and consultants (Invited presentation).
- **Griffin LaHue, D.** What does soil health mean for agriculture in Washington State? Demonstration presentation at the WSU Congressional and Legislative Staff Tour, August 13, 2019. Audience: ~ 50 federal legislative staffers
- **Griffin LaHue, D.**, D. Collins, D., S. Cappellazzi. Recommended sampling methods for on-farm soil health monitoring. Healthy Soils, Healthy Region Workshop, Pendleton, OR, March 12, 2019. Audience: ~ 30 agricultural professionals (Invited presentation).

### *Local*

- **Griffin LaHue, D.**, T.M. Una\* (co-presentation), S. Seefeldt, D. McMoran. Cover crops for spinach seed rotations. Western Washington Vegetable Seed Workshop, January 8, 2021. Audience: ~30 Skagit vegetable seed farmers and seed companies (Invited presentation)
- **Griffin LaHue, D.**, G.T. LaHue. Soil fertility and plant nutrition. Home Horticulture Training Program, WSU Master Gardener Training Program. January 23, 2021. Audience: 500 attendees (Invited lecture)
- **Griffin LaHue, D.**, G.T. LaHue. An introduction to soils and soil fertility. WA Master Gardener Training Program, Skagit County. April 21, 2020 (Invited lecture)
- **Griffin LaHue, D.**, D. McMoran, S. Seefeldt, T. Una, B. Maupin. Cover crop alternatives for potato growers in Western Washington. Western Washington Annual Potato Workshop, February 21, 2020. Audience: ~ 35 growers and agricultural professionals (Invited presentation)
- **Griffin LaHue, D.**, G.T. LaHue, C. Benedict, K. Hills. Facilitated listening session road-mapping soil health in western Washington, December 17, 2019. Audience: 27, including 13 Skagit farmers (potato, vegetable seed, bulbs, dairy) and 5 consultants/industry representatives. (Facilitator, Event co-organizer).
- **Griffin LaHue, D.** Soil health concepts and management. Training for farmers in Viva Farms Cultivating Success Program, Mount Vernon, WA, October 24, 2019. Audience: ~ 20 farmers (Invited presentation).
- **Griffin LaHue, D.** The Ins and Outs of Soil Carbon. Presentation organized by WSU Island County Extension, Coupeville, WA, October 21, 2019. Audience: 42 attendees, 20 farmers, 1 county commissioner (Invited presentation).
- **Griffin LaHue, D.**, G.T. LaHue. Soil management for growing better fruit. Snohomish County Fruit Society, Snohomish, WA, September 12, 2019. Audience: ~20 amateur fruit growers (Invited presentation).
- **Griffin LaHue, D.**, G.T. LaHue, D. Stranik. Soil health on the dairy. Soil health workshop for dairy farmers in Whatcom County. Put on in collaboration with the Whatcom County Conservation District, Lynden, WA, September 5, 2019. Audience: ~25 dairy farmers (Invited presentation).
- **Griffin LaHue, D.**, G.T. LaHue. Soils and Climate Change. Presentation to the Transition Fidalgo and Friends community group, Anacortes, WA, August 26, 2019. Audience: ~ 50 attendees (Invited presentation).



- **Griffin LaHue, D.,** G.T. LaHue. What is soil health? Presentation at the WSU Mount Vernon NWREC Annual Field Day, July 11, 2019. Audience: ~75 attendees, ~15 farmers (Featured and invited presentation).
- **Griffin LaHue, D.,** G.T. LaHue, E. Schuh. Soil challenges in Western Washington. Soil health workshop for farmers in Snohomish County. Put on in collaboration with the Snohomish County Conservation District, Stanwood, WA, June 6, 2019. Audience: ~20 farmers (Invited workshop; Event co-organizer).
- **Griffin LaHue, D.,** G.T. LaHue. The soils under your feet: Exploring their diversity, formation, and management. Anacortes Science Café, Anacortes, WA, May 15, 2019. Audience: ~20 attendees, including high school students (Invited presentation).
- **Griffin LaHue, D.,** Miles, C. Legumes for Your Garden. WSU Skagit County Master Gardeners, Mount Vernon, WA, April 9, 2019. Audience: ~50 Master Gardeners (Invited presentation).
- **Griffin LaHue, D.** Panel discussion on soil health. Western Washington Fruit Research Foundation Annual Field Day, Mount Vernon, WA, March 2, 2019. Audience: ~50 amateur tree fruit growers (Invited panelist and presenter).
- **Griffin LaHue, D.,** Stacey, N., Borner, A. Understanding and managing soil health for crop production. Extension workshop at the San Juan County Agricultural Summit, WSU San Juan County Extension, February 2, 2019. Audience: ~ 30 farmers (Invited presentation).

*From UC Davis*

- **Griffin, D.E.,** K. Le Baudour, K.M. Scow, S.A. Vosti. Putting an economic value on cover crops: Impacts on profitability and soil quality in a conventional tomato system. Talk presented at the 2017 Annual Field Day for the Russell Ranch Sustainable Agriculture Facility, Agricultural Sustainability Institute, UC Davis, June 14, 2017.
- **Griffin, D.E.** The deal with biochar: The good, the bad, and the uncertain. Workshop presentation to 60 Master Gardeners, University of California Cooperative Extension, Santa Clara County, May 16, 2017.
- **Griffin, D.E.** Impacts of microbes and biochar on soil health. Workshop presentation to 100 Master Gardeners, California Center for Urban Horticulture, October 15, 2016.
- **Griffin, D.E.,** D. Wang, K.M. Scow. How does biochar impact nutrient cycling? Potential effects on nitrogen availability, soil structure, and yields. Talk presented at the 2015 Annual Field Day for the Russell Ranch Sustainable Agriculture Facility, Agricultural Sustainability Institute, UC Davis, May 21, 2015.
- **Griffin, D.E.,** D. Wang, K.M. Scow, S.J. Parikh. Impacts of Biochar Amendment on Soil Nutrient Availability and Crop Growth. Talk presented at the 2014 Annual Field Day for the Russell Ranch Sustainable Agriculture Facility, Agricultural Sustainability Institute, UC Davis, May 28, 2014.
- **Griffin, D.E.,** K.M. Scow, E. Torbert, T. Hollemans, I. Herrera. Biochar Research at Russell Ranch. Poster presented at the 2013 Annual Field Day for the Russell Ranch Sustainable Agriculture Facility, Agricultural Sustainability Institute, UC Davis, May 28, 2013.

## **OTHER EXTENSION & OUTREACH CONTRIBUTIONS**

### **A. Current websites**

**Developer and contributor,** [soilhealth.wsu.edu](http://soilhealth.wsu.edu)

- Launched January 2020
- 3,330 unique visits between 1/1/2020 and 3/1/2021

### **B. Social Media**

**Lead contributor,**

- Instagram: @WSU\_SoilHealth (483 followers), established Oct 2019
- Twitter: @WSU\_SoilHealth (325 followers), established Oct 2019
- Twitter: @WSU\_NWREC (402 followers), established June 2017

**C. Events**

**Co-Organizer**, Programming Committee, SoilCon: Washington Soil Health Week, International Virtual Soil Health Conference, February 2021 (June 2020 – February 2021)

- 5 day event, February 8-12, 2021
- 996 attendees from worldwide (79% US, 5% Canada, 5% France, 4% Great Britain, 8% other)

**Co-Organizer**, Pesticide Recertification Seminar Series, WSU Mount Vernon NWREC (August 2020-present)

- 131 WSDA Pesticide Credits earned by 43 individuals in Fall 2020

**TEACHING ACTIVITIES****A. Instructor**

**Instructor, Entom 490/590: Regenerative Farming and Ranching**, Spring 2021

- 2-credit course (1-credit seminar + 1-credit discussion) for undergraduate and graduate students
- 25 students enrolled in seminar, 14 students enrolled in discussion section

**Instructor, SSC 502: Special Topics in Soil Science – Soil Health Across Scales**, Fall 2020

- 2-credit, discussion-based course for graduate students
- 10 students enrolled in Fall 2020

**Assistant Instructor, AFS 401**, Capstone course for the Agriculture and Food Systems Program, Spring 2020

- Supporting a WSU Everett student taking the course from off-campus; 1-credit equivalent
- Meeting once per week with Instructor Holly Henning-Yeager on class activities, assignments, and planning

**B. Course Development**

**Co-lead for course development committee, UCORE ROOT Soils 105**, Fall 2019 – Spring 2020

- Working with a group of Crop and Soil Science faculty to develop and propose a new introductory Soils course with the UCORE ROOT designation

**C. Guest Lectures*****Academic***

- **Griffin LaHue, D.** Soil properties and considerations for successful production. August 28, 2020. HORT 310: Pomology, Instructor: Dr. Lisa DeVetter
- **Griffin LaHue, D., G.T. LaHue.** Crop and Soils, Horticulture 2019 Statewide Tour. Hands-on unit on soil science, May 2019, Instructors: Drs. Pete Jacoby and Lisa DeVetter

***Other***

- **Griffin LaHue, D.** A day in the life of a soil scientist. Greensboro, NC Montessori School, 5<sup>th</sup> grade class. April 2, 2020.
- **Griffin LaHue, D.** Soil health concepts and management. Training for farmers in Viva Farms Cultivating Success Program, Mount Vernon, WA, October 24, 2019. Audience: ~ 20 farmers (Invited presentation).

## **D. Previous Institution (UC Davis)**

**Guest Lecturer**, Introduction to Soil Science, UC Davis, November 1, 2017

- Lectured on microbial respiration, redox reactions, and carbon and nitrogen cycles for a 145-student class
- Instructors: Drs. Randal Southard and Kate M. Scow

**Guest Lecturer**, Edible Landscape Internship Program, UC Davis, November 17, 2016

- Lectured on principles of soil ecology and the importance for soil health in agricultural systems

**Teaching Assistant**, Science and Society: Soil, Water, and Civilizations, UC Davis, March 2014 – June 2014

- Sole TA for 70 students; Assisted in leading discussions; Graded assessments and essays.
- Instructor: Dr. Sanjai J. Parikh

**Teaching Assistant**, Soil Microbiology Lecture and Laboratory, UC Davis, January 2014 – March 2014

- Sole TA for 45 students; Set up and taught two weekly laboratory sections, gave several lectures and led discussions, held office hours, graded assessments and lab reports, helped in designing curriculum.
- Instructor: Dr. Kate M. Scow

**Guest Lecturer**, Sustainability and Agroecosystem Management, UC Davis, April 30, 2014

- Lectured on the effects of biochar on soil microbial ecology and nutrient cycling in agricultural systems for a class of 50 students
- Co-lecture with Dr. Sanjai J. Parikh and Dr. Fungai N.D. Mukome
- Instructor: Dr. Steve Fonte

**Guest Lecturer**, Science and Society: Soil, Water, and Civilizations, UC Davis, May 14, 2013

- Lectured on the environment, society, and agriculture of Ancient Egypt for a class of 75 students
- Instructor: Dr. Sanjai J. Parikh

## **GRADUATE STUDENT MENTORSHIP**

### **A. Advising (Postdoctoral)**

- Dr. Teal Potter, Postdoctoral Scholar (November 2020 – Present)

### **B. Advising (Graduate Students)**

- Molly McIlquham, M.S. student in Soil Science (started Fall 2020)
- Kwabena Sarpong, Ph.D. student in Soil Science (started Spring 2020)
- Toby Una, M.S. student in Soil Science (started Fall 2019)
- Amy Cardenas, M.S. in Agriculture, Co-advised with Dr. Lisa Wasko DeVetter (started Fall 2019)

### **C. Graduate Student Committees**

#### *Current*

- Srijana Shrestha, M.S. student in Horticulture, Advisor: Dr. Carol Miles (started Spring 2020)
- Alec Blume, M.S. in Agriculture, Advisor: Dr. Beverly Gerdeman (started Spring 2020)
- Chris Benedict, Ph.D. student in Crop Science, Advisor: Dr. Ian Burke (started Spring 2020)
- Bernadette Gagnier, M.S. student in Horticulture, Advisor: Dr. Michelle Moyer (started Spring 2020)
- Jameson Goff, M.S. student, Western Washington University, Advisor: Dr. Andy Bach (started Fall 2019)
- Robin Morgan, Ph.D. student in Crop Science, Advisor: Dr. Stephen Jones (started Fall 2019)
- Rachel Breslauer, Ph.D. student in Crop Science, Advisor: Dr. Kevin Murphy (started Fall 2019)
- Merri Metcalfe, Ph.D. student in Crop Science, Advisor: Dr. Stephen Jones (started Fall 2019)

- Qianwen Lu, Ph.D. student in Horticulture, Advisor: Dr. Lisa Wasko DeVetter (started Fall 2018)

#### ***Past (graduated)***

- Anais Rodriguez, M.S. in Agriculture, Chair: Dr. Carol Miles (graduated Spring 2020)

#### **D. Undergraduate Student Advising**

- Samantha Hordyk, undergraduate student (Reed College), worked in Soil Health Lab, May-Aug 2019
- Noah Ray, CAHNRS Undergraduate Intern, May-Aug 2020

### **FELLOWSHIPS, HONORS, and AWARDS**

**Total Awarded: \$188,520**

**NSF Graduate Research Fellowship Program**, 2014-2018 (\$102,000 stipend, \$36,000 institutional support)

**1<sup>st</sup> Place Winner**, Poster Competition, Organic Management Systems Community, ASA-CSSA-SSSA Annual Meeting, Tampa, FL, Oct. 2017

**1<sup>st</sup> Place Winner**, Poster Competition, American Society of Agronomy - California Chapter Annual Meeting, Fresno, CA, Jan. 2017

**Henry A. Jastro Research Award**, Soils and Biogeochemistry Graduate Group, UC Davis, 2013-2014, 2014-2015, 2016-2017 (\$7720)

**Graduate Student Association Travel Award**, UC Davis, 2016 (\$500)

**University of California-Davis and Humanities Graduate Research Award**, 2013-2014, 2015-2016 (\$3000)

**Trellis Fund Recipient**, Horticulture Innovation Lab, UC Davis, 2015 (\$1000)

**1<sup>st</sup> Place Winner**, Poster Competition, Soil Biology and Biochemistry Division, ASA-CSSA-SSSA Annual Meeting, Long Beach, CA, Nov. 2014

**Beatrice Oberly & S. Atwood McKeehan Fellowship**, UC Davis, 2014-2015 (\$20,000 stipend, \$16,100 institutional support)

**Bert & Nell Krantz Fellowship**, UC Davis, 2013-2014 (\$1700 stipend)

**Graduate Studies Travel Grant**, UC Davis, 2013 (\$500)

**Soils & Biogeochemistry Graduate Group Fellowship**, 2012-2013 (\$8900 stipend, \$20,250 institutional support)

### **SERVICE**

#### **A. University**

##### **1. Washington State University**

- **Search Committee Member**, Distinguished Endowed Chair in Soil Health for Potato Cropping Systems (Spring 2021)
- **Executive Steering Committee Member**, WA Soil Health Initiative (July 2019 – present)
- **Organizer**, Lunch & Learn Seminar, WSU Mount Vernon NWREC (December 2019 – present)

- **Search Committee Member**, Director for WSU Mount Vernon NWREC, Chair: Dr. Richard Zack (Spring 2020)
- **Search Committee Member**, WA Oilseed Cropping Systems (WOCS) Extension Agronomist, Department of Crop and Soil Sciences, Chair: Dr. Ian Burke (Summer 2019)
- **Search Committee Member**, Scientific Assistant, Vegetable Horticulture Program, WSU Mount Vernon NWREC, Chair: Dr. Carol Miles (Spring 2019)

## 2. UC Davis

- **Search Committee Member**, Academic Coordinator position, Agricultural Sustainability Institute, UC Davis (May 2017)
- **Graduate Student Representative**, Soils and Biogeochemistry Graduate Group Executive Board (2016-2017)
- **Mentor**, Student and Landowner Education and Watershed Stewardship (SLEWS) program, Center for Land-Based Learning in Dixon, CA, Collaboration with growers, NRCS Resource Conservation Districts, and high schools to plant buffer strips of native perennials and teach students about conservation (2016-2018)
- **Mentor**, Department Land, Air, and Water Resources Undergraduate Mentorship Program, UC Davis, 2015
- **Co-creator and organizer**, Soils and Biogeochemistry Career Exploration Seminar, UC Davis, Seminar for Soils and Biogeochemistry graduate students to meet and learn from professionals from institutions including USDA-ARS, UC Cooperative Extension, USGS, state agencies, and private industry (2014)
- **Graduate Student Representative to Congress**, Soils, Wines, and Vines U.S. Congressional event, Sponsored by UC Davis and the Soil Science Society of America. Part of a team of 5 graduate students that met with members of the U.S. Congress to promote soil science and agricultural research (2014)

## B. Reviewing Activities

- **Scientific journal articles:** *Soil Biology & Biochemistry* (2016: 1, 2017: 2); *Agronomy Journal* (2018: 2, 2019: 1); *Agriculture, Ecosystems and Environment* (2018: 1); *Frontiers in Plant Science* (2015:1); *PLOS ONE* (2019: 1); *Renewable Agriculture and Food Systems* (2019: 1); *Journal of Polymers and the Environment* (2021: 1); *Phytobiomes* (2021: 1).
- **Extension articles:** *eOrganic* (2020: 1), WSU (2019: 3)
- **White papers:** Center for Sustaining Agriculture and Natural Resources (2019: 1)
- **Proposals:** BIOAg Program (2020: 1, 2021: 1); California Department of Food & Agriculture Healthy Soils Program (2018: 6)
- **Projects:** The Nature Conservancy, Review of Agricultural Management and Ecosystem Services Evidence

## C. Professional Society Activities

- **Judge for Student Competition**, Soil Chemistry Division, Soil Science Society of America (Nov 2019)
- **Judge for Student Competition**, Soil Health Community, American Society of Agronomy (Nov 2019)

## PROFESSIONAL SOCIETY MEMBERSHIP

- Soil Ecology Society, 2017-Present
- Soil Science Society of America (SSSA), 2011-Present
- Crop Science Society of America (CSSA), 2011-Present
- American Society of Agronomy (ASA), 2011-Present
- Students of Agronomy, Soils, and Environmental Sciences (SASES), 2011-2013
- Mid-Atlantic Association of Professional Soil Scientists (MAPSS), 2012-2013