

CURRICULUM VITAE

JAMES A. IPPOLITO

EDUCATIONAL BACKGROUND:

Ph.D., Environmental Soil Quality/Chemistry, Colorado State University, **December 2001.**

Dissertation Title: Phosphorus adsorption/desorption of water treatment residuals and biosolids co-application effects.

M.S., Soil Chemistry/Fertility, Colorado State University, **August 1992.**

Thesis Title: Determination of salinity threshold levels for selected grass and legume forage species.

B.S., Plant Science - Agronomy Concentration, Microbiology Minor, University of Delaware, **May 1989.**

PROFESSIONAL EMPLOYMENT:

- Associate Professor (non-tenure tract), Soil Fertility/Environmental Soil Quality, Department of Soil and Crop Sciences, Colorado State University, 2016 to present;
- Research Soil Scientist (GS13-4 through GS14-6), USDA-ARS, 2007-2016;
- Assistant Professor (non-tenure track), Environmental Soil Quality/Chemistry, Department of Soil and Crop Sciences, Colorado State University, 2002-2007;
- Research Associate, Department of Soil and Crop Sciences, Colorado State University, 1991-2002.

TEACHING EXPERIENCE (Course Evaluation Student Responses):

Soil Fertility Management (SOCR350), 2016-present:

Table 1. Soil Fertility Management (SOCR350) Course Evaluation Questions and Average Responses.

| Question | Average Response [†] |
|---|-------------------------------|
| How do you rate this course | 4.90 |
| How do you rate the instructor's knowledge of the subject | 4.94 |
| How effectively did the instructor facilitate student learning? | 4.87 |
| How do you rate the instructor's enthusiasm for teaching the subject? | 5.00 |
| How well did the instructor organize the course? | 4.90 |
| How prepared was the instructor for class sessions? | 4.87 |
| How do you rate the instructor's effectiveness at managing class sessions? | 4.81 |
| How well did the instructor create an atmosphere that was respectful of student opinions, ideas, and differences? | 4.94 |
| How effectively did the instructor communicate? | 4.90 |
| How do you rate this instructor? | 4.94 |

[†] - On a scale from 1 to 5. 1=strongly disagree, and 5=strongly agree.

Introductory Soil Science, 1989-2007:

Table 2. Introductory Soil Science Lab (SC240L) Course Evaluation Questions and Average Responses.

| Question | Average Response [†] |
|--|-------------------------------|
| The instructor is well prepared and enthusiastic for each class. | 4.78 |
| The teacher organized the course effectively. | 4.58 |
| The teacher created an atmosphere conducive to learning. | 4.82 |
| Overall, I would rate this teacher as good. | 4.81 |

[†] - On a scale from 1 to 5. 1=strongly disagree, and 5=strongly agree.

Soil Chemical Analysis, 2003:

Table 3. Soil Chemical Analysis (SC564) Course Evaluation Questions and Average Responses.

| Question | Average Response [†] |
|--|-------------------------------|
| The instructor is well prepared and enthusiastic for each class. | 4.86 |
| The teacher organized the course effectively. | 4.57 |
| The teacher created an atmosphere conducive to learning. | 4.88 |
| Overall, I would rate this teacher as good. | 4.86 |

[†] - On a scale from 1 to 5. 1=strongly disagree, and 5=strongly agree.

Environmental Soil Science, 2003-2004:

Table 4. Environmental Soil Science (SC478) Course Evaluation Questions and Average Responses.

| Question | Average Response [†] |
|--|-------------------------------|
| The instructor is well prepared and enthusiastic for each class. | 5.00 |
| The teacher organized the course effectively. | 4.33 |
| The teacher created an atmosphere conducive to learning. | 5.00 |
| Overall, I would rate this teacher as good. | 5.00 |

[†] - On a scale from 1 to 5. 1=strongly disagree, and 5=strongly agree.

Environmental Sampling (ENV241); Soils and Fertilizers (URH125): Front Range Community College, Larimer Campus. 1996-2001:

Table 5. Environmental Sampling (ENV241) and Soils and Fertilizers (URH125) Course Evaluation Questions and Average Responses.

| Question | Average Response [†] | |
|--|-------------------------------|--------|
| | ENV241 | URH125 |
| Instructor organized and structured class presentations. | 4.5 | 4.5 |
| Instructor communicated subject matter effectively. | 4.5 | 4.6 |
| Instructor encouraged student participation. | 4.7 | 4.6 |
| Instructor treated students with respect and dignity. | 4.7 | 4.8 |
| Instructor showed enthusiasm for subject matter. | 5.0 | 4.9 |

[†] - On a scale from 1 to 5. 1=strongly disagree, and 5=strongly agree.

National Science Foundation: Broadening Soil Science Education Through On-Line Lessons. I collaborated with faculty members at the University of Nebraska, Oregon State University, and the University of Minnesota, to develop six educational works (published in JNRLSE) and three case studies encompassing the main lessons regarding soil genesis and development. These objects, located at the University of Nebraska's Plant and Soil Sciences elibrary (<https://passel.unl.edu/pages/>), have been employed as resources to teach Introductory Soil Science. Although the lessons were deployed in 2006 and published in 2009, from 2011 to 2017 the lessons have been visited by over 278,000 individual unique visits and page viewed as detailed in the statistics below:

Table 6. Web-based soil genesis and development lessons and the total number of individual views, 2011-2017.

| Lesson | Total Views: 2011-2017 |
|---|------------------------|
| Soil Genesis and Development, Lesson 1 - Rocks, Minerals, and Soils | 73,253 |
| Soil Genesis and Development, Lesson 2 - Processes of Weathering | 271,886 |
| Soil Genesis and Development, Lesson 3 - Soil Forming Factors | 159,535 |
| Soil Genesis and Development, Lesson 4 - Soil Profile Development | 294,594 |
| Soil Genesis and Development, Lesson 5 - Soil Classification & Geography | 190,900 |
| Soil Genesis and Development, Lesson 6 - Global Soil Resources & Distribution | 145,426 |

PRESENTATIONS, SYMPOSIUMS, AND SEMINARS (~ 180 total; ~ 40 invited/keynote; recent year below):

- Novak, J.M., M.G. Johnson, and **J.A. Ippolito**. 2017. Aligning biochar characteristics for successful improvement of soil fertility and remediation of mine spoils. International Conference on Geochemistry in the Tropics and Subtropics. December 8-11. Shenzhen, China.
- Bordi, K., **J. Ippolito**, J McDaniel, and K. Barbarick. 2017. Biosolids Land Application and Phosphorus: A Simple Runoff Study. American Society of Agronomy Meetings. October 22-25. Tampa. FL.
- Spokas, K.A., and **J.A. Ippolito**. 2017. Biochar magic: The smoke and mirrors behind biochar use for improving soils. American Society of Agronomy Meetings. October 22-25. Tampa. FL.
- Novak, J.M., M.G. Johnson, J.A. Ippolito, T.F. Ducey, G.C. Sigua, D.W. Watts, and K.A. Spokas. 2017. Biochars ability to sequester heavy metals in a mine impacted soil. American Society of Agronomy Meetings. October 22-25. Tampa. FL.
- Kammann, C., A. Haller, H-P. Schmidt, N. Wrage-Moennig, **J.A. Ippolito**, T. Fuertes-Mendizabal, J.M. Estavillo, N. Borchard, M. Cayuela, K.A. Spokas, J.M. Novak. 2017. Biochar as a tool for nitrogen management: Increasing benefits while reducing environmental burdens. American Society of Agronomy Meetings. October 22-25. Tampa. FL.
- Wrage-Moennig, N., S. Fiedler, T. Fuertes-Mendizabal, J.M. Estavillo, **J.A. Ippolito**, N. Borchard, M. Cayuela, K.A. Spokas, J.M. Novak, and C. Kammann. 2017. Influence of 13 biochars on N₂O sources during rewetting-drying cycles. American Society of Agronomy Meetings. October 22-25. Tampa. FL.
- Ippolito, J.A., C.M. Berry, D.G. Strawn, J.M. Novak, J. Levine, and A. Harley. 2017. Heavy metal sorption mechanisms in biochar amended mine tailings. 14th International Conference on the Biogeochemistry of Trace Elements. Zurich, Switzerland. July 16-20. **INVITED Keynote Speaker.**

- Ippolito, J.A.**, and K.A. Barbarick. Measuring and predicting trace element speciation in long-term biosolids-amended soils. 14th International Conference on the Biogeochemistry of Trace Elements. Zurich, Switzerland. July 16-20.
- Bjorneberg, D., **J. Ippolito**, and A. Koehn. 2017. Nitrate-N trends in irrigation return flow from a southern Idaho watershed. ASABE International Meeting. Spokane, WA. July 16-19.
- Cimo, G., A. Haller, K. Spokas, J. Novak, **J. Ippolito**, and C. Kammann. 2017. Mechanisms of nitrate capture in biochar: Are they related to biochar properties, post-treatment and soil environment? European Geosciences Union. April 22-29. Vienna, Austria.
- Ippolito, J.A.**, C. Kammann, M. Schirrmann, N. Wrage-Mönnig, T. Estavillo, T. Fuertes, M. Cayuela, N. Borchard, J. Novak, K. Spokas, and G. Sigua. 2017. Biochar mediated mechanisms for reducing N₂O emissions: An overview. European Geosciences Union. April 22-29. Vienna, Austria.
- Fiedler, S., T. Fuertes-Mendizábal, J.M. Estavillo, **J.A. Ippolito**, N. Borchard, M.L. Cayuela, K. Spokas, J. Novak, C. Kammann, and N. Wrage-Mönnig. 2017. Influence of 13 different biochars on N₂O production and its sources during rewetting-drying cycles. European Geosciences Union. April 22-29. Vienna, Austria.
- Schirrmann, M., M.L. Cayuela, T. Fuertes-Mendizábal, J.M. Estavillo, **J.A. Ippolito**, K. Spokas, J. Novak, C. Kammann, N. Wrage-Mönnig, and N. Borchard. 2017. Biochar reduced N₂O emissions from soils: A meta-analysis. European Geosciences Union. April 22-29. Vienna, Austria.
- Fuertes-Mendizábal, T., X. Huérfano, S. Menéndez, C. González-Murua, M.B. González-Moro, **J.A. Ippolito**, C. Kammann, N. Wrage-Mönnig, N. Borchard, M.L. Cayuela, K. Spokas, J. Novak, and J.M. Estavillo. 2017. Biochar reduces the efficiency of the nitrification inhibitor 3,4-dimethylpyrazole phosphate (DMPP) mitigating N₂O emissions. European Geosciences Union. April 22-29. Vienna, Austria.
- Sigua, G.C., J.M. Novak, M.G. Johnson, K. Spokas, J.A. Ippolito, T. Ducey, and K. Trippe. 2017. Efficacy of designer biochars with or without lime application for remediating heavy metals in mine spoil soils. European Geosciences Union. April 22-29. Vienna, Austria.
- Novak, J.M., **J. Ippolito**, K. Spokas, G. Sigua, C. Kammann, N. Wrage-Mönnig, N. Borchard, M. Schirrmann, J.M. Estavillo, T. Fuertes, S. Menendez, and M.L. Cayuela. 2017. Crafting biochars to reduce N₂O and CO₂ emissions while also improving soil quality. European Geosciences Union. April 22-29. Vienna, Austria.
- Novak, J.M., M.G. Johnson, **J.A. Ippolito**, G.C. Sigua, K.A. Spokas, K.M. Trippe, and T.F. Ducey. 2017. Biochars ability to sequester metals in contaminated mine spoils: A greenhouse study. European Geosciences Union. April 22-29. Vienna, Austria.
- Ippolito, J.A.** and D.D. Tarkalson. 2017. Introduction to soils for appraisers. 2017 Spring Meeting of the Colorado Chapter of the American Society of Farm Managers and Rural Appraisers. April 20-21. Loveland, CO. **INVITED.**
- Ippolito, J.A.** 2017. Soil and water conservation BMPs. Front Range Community College – Larimer campus. March 8 and 28. Fort Collins, CO. **INVITED.**
- Ippolito, J.A.**, D.L. Bjorneberg, D. Stott, and D.L. Karlen. 2017. Soil management assessment framework use for identifying soil quality changes in irrigated

- agriculture. Western Nutrient Management Conference. March 2-3. Reno, NV.
- Ippolito, J.A.** 2017. Soil nutrients and cycling: The big 3 and availability issues in calcareous soils. Urban and Small Farms Conference. February 22-23. Salt Lake City, Utah. **INVITED.**
- Ippolito, J.A.** 2017. Identifying soil quality improvements in paired, irrigated agroecosystems. 2017 Colorado State University Agricultural Experiment Station Soil Health Workshop. February 9. Dove Creek, CO. **INVITED.**

PUBLICATION RECORD:

Current Google Scholar Citation indices for Jim Ippolito:

| | All | Since 2012 |
|-----------|------|------------|
| Citations | 2543 | 1877 |
| h-index | 27 | 20 |
| i10-index | 53 | 42 |

Refereed (~ 100 articles; recent four years of below):

- Ippolito, J.A.**, D.L. Bjorneberg, M. Massey, and S.W. Blecker. 2017. Soil phosphorus availability differs between sprinkler and furrow irrigation. In preparation.
- Zohar, I., Litaor, M.I., **J.A. Ippolito**, and M. Massey. 2017. Phosphorus Sorption Characteristics in Water Treatment Residuals in Contact with Organic-rich Wastewaters. In review with J. Environ. Qual.
- Massey, M., I. Zohar, M.I. Litaor, and **J.A. Ippolito**. 2017. X-ray absorption near-edge structure (XANES) characterization of organic-phosphorus Al-WTR sorption processes. In review with J. Environ. Qual.
- Cui, L., C. Yin, T. Chen, G. Quan, B. Xiao, Y. Ma, M. Pan, Y. Liu, B. Liu, **J.A. Ippolito**, J. Yan, X. Han, C. Ding, M. Bian, and Q. Hussain. 2017. Biochar reduces transport and degrades 2,4,6-trichlorophenol. In review with Sci. Tot. Environ.
- Novak, J.M., **J.A. Ippolito**, M.G. Johnson, K.A. Spokas, and Y.S. Ok. 2016. Selection of designer biochar characteristics for rectification of soil health and enhancement of mine land reclamation. In review with Advances in Agronomy.
- Vithanage, M., S.S. Mayakaduwa, A.U. Rajapaksha, M. Ahmad, D.C.W. Tsang, A. Abduljabbar, M.I. Al-Wabel, **J.A. Ippolito**, and Y.S. Ok. 2017. Environmental management of carcass disposal: Implications of sustainable biochar system. In review with Crit. Rev. Sci. Technol.
- Ippolito, J.A.**, D.L. Bjorneberg, D.E. Stott, and D.L. Karlen. 2017. Soil quality improvement through conversion to sprinkler irrigation. Accepted for publication in Soil Sci. Soc. Am. J.
- Novak, J.M., **J.A. Ippolito**, T.F. Ducey, M.G. Johnson, D.W. Watts, K.M. Trippe, K.A. Spokas, and G.C. Sigua. 2017. *Miscanthus* biochar and lime have different impacts on mine spoil health characteristics. Accepted for publication in J. Environ. Qual.
- Mehmood, K., E. Chávez Garcia, M. Schirrmann, B. Ladd, C. Kammann, N. Wrage-Mönnig, C. Siebe, J.M. Estavillo, T. Fuertes, M. Cayuela, G. Sigua, K. Spokas,

- A.L. Cowie, J. Novak, **J.A. Ippolito**, and N. Borchard. 2017. Biochar research activities and their relation to development and environmental quality. A meta-analysis. *Agron. Sustain. Dev.* 37:22
- Kammann, C., N. Borchard, M. Cayuela, N. Hagemann, **J. Ippolito**, S. Jeffery, J. Kern, D. Rasse, S. Sanna, H-P. Schmidt, K. Spokas, and N. Wrage-Mönnig. 2017. Biochar as a novel tool to reduce the agricultural greenhouse burden – Knowns, unknowns and future research needs. *J. Environ. Engineer. Landscape Management.* 25:114-139.
- Dungan, R., A. Leytem, **J. Ippolito**, and D. Tarkalson. 2017. Greenhouse gas emissions from an irrigated dairy forage rotation as influenced by fertilizer and manure applications. *Soil Sci. Soc. Am. J.* doi:10.2136/sssaj2016.08.0254.
- Ippolito, J.A.**, C.M. Berry, D.G. Strawn, J.M. Novak, J. Levine, and A. Harley. 2017. Biochars reduce mine land soil bioavailable metals. *J. Environ. Qual.* 46:411-419.
- Barbarick, K.A., **J.A. Ippolito**, and J. McDaniel. 2017. Meta-analysis of biosolids effect in dryland wheat agroecosystems. *J. Environ. Qual.* 46:452-460.
- Spokas, K.A., R. Weis, G. Feyereisen, D.W. Watts, J.M. Novak, T.J. Lee, and **J.A. Ippolito**. 2017. Biomass or biochar – Which is better at improving soil hydraulic properties? *Acta Horticulturae.* 1146.31:235-242.
- Laird, D.A., J.M. Novak, H.P. Collins, **J.A. Ippolito**, D.L. Karlen, R.D. Lentz, K.R. Sistani, K. Spokas, and R.S. Van Pelt. 2017. Multi-year and multi-location soil quality and crop biomass yield responses to hardwood fast pyrolysis biochar. *Geoderma.* 289:46-53.
- Zohar, I., Litaor, M.I., **J.A. Ippolito**, and M. Massey. 2017. Innovative approach for agro-wastewater phosphorus removal using water treatment residuals. *Chemosphere.* 168:234-243.
- Novak, J.M., **J.A. Ippolito**, R.D. Lentz, K.A. Spokas, C.H. Bolster, K. Sistani, K.M. Trippe, and M.G. Johnson. 2016. Soil health, crop productivity, microbial transport, and mine spoil response to biochars. *Bioenerg. Res.* 9:454-464.
- Barbarick, K.A., **J.A. Ippolito**, and J. McDaniel. 2016. Path Analysis of grain P, Zn, Cu, Fe, and Ni in a biosolids-amended dryland wheat agroecosystem. *J. Environ. Qual.* 45:1400-1404.
- Ippolito, J.A.**, M.E. Stromberger, R.D. Lentz, and R.S. Dungan. 2016. Hardwood biochar and manure co-application to a calcareous soil. *Chemosphere.* 142:86-91.
- Elzobair, K.A., M.E. Stromberger, and **J.A. Ippolito**. 2016. Stabilizing effect of biochar on soil extracellular enzymes after a denaturing stress. *Chemosphere.* 142:114-119.
- Ippolito, J.A.**, T.F. Ducey, K.B. Cantrell, J.M. Novak, and R.D. Lentz. 2016. Designer, acidic biochar influences calcareous soil characteristics. *Chemosphere.* 142:184-191.
- Elzobair, K.A., M.E. Stromberger, **J.A. Ippolito**, and R.D. Lentz. 2016. Contrasting effects of biochar versus manure on soil microbial communities and enzyme activities in an Aridisol. *Chemosphere.* 142:145-152.
- Ippolito, J.A.** 2015. Aluminum-based water treatment residuals use in a constructed wetland for capturing urban runoff phosphorus: Column study. *Water, Air, and Soil Pollution.* 226:334. DOI 10.1007/s11270-015-2604-2.
- Ippolito, J.A.**, J. Grob, and A. Donnelly. 2015. Wood-based biochar and compost influences a Pacific northwest US soil. *The Biochar Journal.* Available at:

- <http://www.biochar-journal.org/en/ct/62-Anatomy-of-a-Field-Trial-Wood-based-Biochar-and-Compost-Influences-a-Pacific-Northwest-Soil>.
- Thomazini, A., K. Spokas, K. Hall, **J. Ippolito**, R. Lentz, and J. Novak. 2015. GHG impacts of biochar: Predictability for the same biochar. *Agric. Ecosys. Environ.* 207:183-191.
- Bjorneberg, D.L., A.B. Leytem, **J.A. Ippolito**, and A.C. Koehn. 2015. Phosphorus losses from an irrigated watershed in the northwestern U.S.: Case study of the Upper Snake Rock Watershed. *J. Environ. Qual.* 44:552-559.
- Ippolito, J.A.**, K.A. Spokas, J.M. Novak, R.D. Lentz, and K.B. Cantrell. 2015. Biochar elemental composition and factors influencing nutrient retention. In: Lehmann, J., and S. Joseph (Eds.), *Biochar for Environmental Management: Science, Technology and Implementation*. 2nd Ed. Routledge. New York, NY. pp. 137-161.
- Barbarick, K.A., **J.A. Ippolito**, and J. McDaniel. 2015. Uptake coefficients for biosolids-amended dryland winter wheat. *J. Environ. Qual.* 44:286-292.
- Lentz, R.D., **J.A. Ippolito**, and K.A. Spokas. 2014. Biochar and manure effects on net N mineralization and greenhouse gas emissions from calcareous soil under corn. *Soil Sci. Soc. Am. J.* 78:1641-1655.
- Ippolito, J.A.**, K.A. Barbarick, and R.B. Brobst. 2014. Copper and zinc speciation in a biosolids-amended semi-arid grassland soil. *J. Environ. Qual.* 43:1576-1584.
- Spokas, K.A., J.M. Novak, C.A. Masiello, M.G. Johnson, E.C. Colosky, **J.A. Ippolito**, and C.T. Cordoba. 2014. Physical disintegration of biochar: An overlooked process. *Environ. Sci. Technol. Letters.* 1:326-332.
- Ippolito, J.A.**, R. Spackman, J.A. Entry, and R.E. Sojka. 2014. Removal of vegetative clippings reduces dissolved phosphorus loss in runoff. *Comm. Soil Sci. Plant Anal.* 45:1555-1564.
- Ippolito, J.A.**, M.E. Stromberger, R.D. Lentz, and R.S. Dungan. 2014. Hardwood biochar influences calcareous soil physicochemical and microbiological status. *J. Environ. Qual.* 43:681-689.
- Blecker, S., L. Stillings, N. DeCrappeo, and **J. Ippolito**. 2014. Soil-plant-microbial relations in hydrothermally altered soils of Northern California. *Soil Sci. Soc. Am. J.* doi:10.2136/sssaj2013.07.0298
- Moore, A., S. Hines, B. Brown, C. Falen, M. de Haro Marti, M. Chahine, R. Norell, **J. Ippolito**, S. Parkinson, and M. Satterwhite. 2014. Soil-plant nutrient interactions on manure-enriched calcareous soils. *Agron. J.* 106:73-80.

Non-Refereed (~ 70 articles; recent four years below):

- Ippolito, J.A., K.A. Barbarick, and K. Diaz. 2017. Biosolids application to no-till dryland crop rotations: 2016 results. *Colorado Ag. Exp. Sta.* TR17-8.
- Izlar, R., and **J. Ippolito**. 2017. Mining for answers on abandoned mines. American Society of Agronomy Communications Outreach.
- Barbarick, K.A., J.M. McDaniel, and **J.A. Ippolito**. 2017. Application of anaerobically digested biosolids effects soil phosphorus levels. *Colorado Ag. Exp. Sta.* TR1-xx.
- Ippolito, J.**, J. Levine, and M. Williams. 2015. Biochar can positively influence soil moisture relations. *Idaho Crops and Soils News*. University of Idaho Newsletter. December 31, Issue 12.

- Bjorneberg, D.L., **J.A. Ippolito**, and A.C. Koehn. 2015. Sediment and nutrient losses from the Upper Snake Rock watershed in southern Idaho. Proceedings of the ASABE/IA Irrigation Symposium. Nov. 10-12. Long Beach, CA.
- Lentz, R., **J. Ippolito**, and K. Spokas. 2015. Biochar and manure effects on nitrogen nutrition in silage corn. Nutrient Digest – Nutrient Management Newsletter for Idaho. University of Idaho, v7, issue 2.
- Bjorneberg, D.L., A.C. Koehn, and **J.A. Ippolito**. 2015. Salt and sediment balances in an irrigated watershed in southern Idaho. Proceedings of the Western Nutrient Management Conference. March 5-6. Reno, NV.
- Lentz, R., **J. Ippolito**, and K. Spokas. 2015. The effects of biochar and manure in silage corn. Progressive Forage Grower. Feb 1. V16, issue 2.

GRANT PROPOSAL EXPERIENCE (over \$2.2M funded; recent two years below):

- US EPA. 2017. Improving Economic Productivity and Sustainability in Ranching Communities and Agricultural Ecosystems Impacted by Legacy Mining Operations in Harding County, South Dakota. \$28,768,552. Pending.
- Fulbright Egyptian Scholar Program. 2017. Effect of biochar amendment and limited irrigation strategies on nitrogen fixation of selected leguminous crops. Collaboration with Dr. Samir Ahmed Sayed Mohamed. Pending.
- NSF-CAREER. 2017. Microbial Mechanisms of Metal Bioavailability in the Phytobiome. Collaboration with Dr. Tarah Sullivan, Washington State University. No direct funding to CSU. Pending.
- Concord Blue, Inc. 2017. Biochar Research Gift to CSU Foundation. \$3,300. **Funded.**
- Colorado State University – Shihezi University (China) International Memorandum of Understanding: Cooperative Research Agreement. 2017-2020. **In Place.**
- Colorado State University – Institutional Research Facilities Improvements. Improving core facilities infrastructure for housing new state of the art equipment: University support for a 26M US EPA Region 8 Proposal. \$14,113.36. Not funded.
- Washington State Dep. Agriculture – Specialty Crop Block Grant Program. 2017. Biochar application for enhanced apple and bell pepper production in water-stressed regions of Washington State. \$23,945. Not funded.
- Aurora Organic Dairy. 2017. Quantifying carbon sequestration potential and accumulation efficiency between perennial and annual forage systems. \$141,000. Pending.
- NSF. 2017. INFEWS: Using produced water from oil and gas energy production in food crop irrigation – When does it make sense? \$1,237,942. Pending.
- Colorado Wheat Research Foundation. 2017. Developing rapid soil fertility testing capacity to evaluate soil characteristics and cropping systems on Colorado wheat production. \$15,000. **Funded.**
- Littleton/Englewood Wastewater Facility, CO. 2017. Biosolids land application research program. \$114,775. **Funded.**
- Colorado State University – College of Agriculture. 2016. A Long-term Integrated Evaluation of the ARDEC Irrigated Forage System. \$89,933. **Funded.**
- FACCE-ERA-GAS. 2016. Implementing biochar technology for C sequestration and climate-smart agriculture. 900,000 Euros (Advisory board role only). Not funded.
- NSF-AFRI. 2016. Forest to Farm: Biochar as the Missing Link in the Nexus of Food, Water and Energy. \$2,996,314. Not funded.

PROFESSIONAL/UNIVERSITY/LEADERSHIP ACTIVITIES:

Professional Membership: ASA (27 yrs); SSSA (30 yrs); AGU, EGU, WERA-103, WERA-3170; Gamma Sigma Delta, Alpha Zeta.

Societal Service: ASA Program Planning Officer (17-19); ASA Board of Directors (17-19); ASA Agronomic Service Award Committee Member (16-17); SSSA Truog Award Committee Member & Chair (16-17); ASA Communications Task Force Committee (15-17); On ballot for ASA President (15); JEQ Associate Editor (11-16); ASA Graduate Student Award Committee-Environ. Qual. Section (13); ASA Organization, Policy, Bylaws Committee (12-13); ASA Biochar Researcher of the Year Award Chair (12); ASA Board of Directors (11-13); ASA Nominations Committee (11); JEQ Biochar special edition editor (10-12); ASA Biochar Community Leader (10-12); ASA – Environ. Qual. Section Young Inspiring Scientist Committee (10); ASA Nominations Committee (09-10); SSSA Soil Science Applied Research Award Committee (09-10); ASA Chair Environmental Quality Section (09); SSSA Soil Testing & Plant Analysis Committee (07-10); ASA Graduate Student Poster Judge (09); ASA-CSSA-SSSA Undergraduate Research Poster Symposium Judge (06-07); SSSA Soil Science Professional Service Award Committee Member and Chair (04-05); SSSA General Awards Committee (05); ASA-CSSA-SSSA Annual Meetings Symposia Organizer/Presiding Chair 12 times (05-17).

State/National/International Service/Outreach: 2nd International Conference on Bioresources, Energy, Environment, and Materials Technology Committee Organizer, Daemyung Resort, Gangwon-do, South Korea (18); NIFA-AFRI ad-hoc reviewer for proposal 2017-07586, Solubilize Phosphate from "Insoluble" Phosphate Materials Using Ionized Biochar (17); Department of Soil and Crop Sciences Awards Committee (17); College of Agricultural Sciences/Department of Soil and Crop Sciences Scholarship Committee (17); Poster judge for European Geosciences Conference section SSS5.16: Designing biochars to react with N species and mechanisms of nutrient enhancement (17); Western Nutrient Management Conference Annual Meeting Chair and Organizer, Reno, Nevada (17); Participant in Advancing Fort Collins' Climate Goals Through Land Carbon Management (17); International Conference on the Biogeochemistry of Trace Elements (12-17); International Organizing Committee, 3rd Asia Pacific Biochar Conference, Gangwon Province, South Korea (16); Technical Committee – Horticulture and Agriculture track, US Biochar Initiative Biochar 2016, Corvallis, Oregon (16); USDA-NIFA Climate Change Climate Resilient Land Use for Agriculture and Forestry and National Strategy for Sustainable Crop and Livestock Production in the United States Panel Member (15); Biochar Journal Editorial Board (14-16); USDA-AFRI Renewable Energy, Natural Resources, and Environment Panel Member (13); Scientific Committee Member for the International Symposium on Water Resources and Pollution Control in Arid/Semi-arid Regions (13); USDA-AFRI Climate Change Adaptation-Mitigation Panel Member (12); Idaho Department of Environmental Quality Drainfield Setback Subcommittee (10-11); NRI Soil Processes Panel Member (08); State of Colorado Tri-Annual Review Biosolids Agronomic Rate Subcommittee Member (05-06); Dep. Soil & Crop Sciences Robert Gardner Award (06); Membership Committee Chair for the CSU chapter of Gamma Sigma Delta (05-07); Colorado Department of Public Health and Environment – Residuals Land Application Committee (05); Faculty rep. to AP Council Awards Selection Committee

(05); Gamma Sigma Delta CSU Chapter President and Secretary (03-05); Dep. Soil & Crop Sci. Research Advisory Committee (03-06); Dep. Soil & Crop Sci. Relations Task Force (04-05); AP Council Rep for College of Ag. Sci. (98-00); AP Council Rep to Faculty Council (99-00); College of Ag. Tech. Fee Committee (92-96).

Mentoring: Have served/am serving as supervisor, advisor, committee member for over 40 people (currently 1 research associate and 3 graduate students).

Other Leadership Activities: USDA AgLearn On-Line Leadership Essentials Certificate Program ('15; communicating vision, leading business execution, leading with emotional intelligence, developing workplace diversity awareness, developing employees; communicating across cultures); Leadership Idaho Agriculture Class of 31 ('11); Kimberly High School, Kimberly Idaho winter track coach/spring track assistant coach (08-15).

OUTSTANDING ACHIEVEMENTS/RECOGNITIONS:

- 2017, Fellow of the Soil Science Society of America
- 2016, Journal of Environmental Quality Outstanding Associate Editor
- 2015, President's Volunteer Service Award
- 2015, USDA-ARS Performance Award – Exceeding expectations of performance
- 2015, On Ballot for ASA President (was not selected)
- 2014, Fellow of the American Society of Agronomy
- 2014, USDA-ARS Performance Award – Exceeding expectations of performance
- 2013, Journal of Environmental Quality Outstanding Associate Editor
- 2013, USDA-ARS Performance Award – Exceeding expectations of performance
- 2012, USDA-ARS Performance Award – Exceeding expectations of performance
- 2011, USDA-ARS Performance Award – Exceeding expectations of performance
- 2010, USDA-ARS Quality Step Increase – Exceeding expectations of performance
- 2009, USDA-ARS Quality Step Increase – Exceeding expectations of performance
- 2005, US EPA National Clean Water Act Recognition Award for Outstanding Biosolids Research
- 2005, Rocky Mountain Water Environment Association – State of Colorado Analytical Award of Merit
- 2003, US EPA Clean Water Act National Recognition Award for Exemplary Biosolids Management for Operating Projects < 5 DMTD, First Place
- 2000, Joan Gaynor Kuder Colorado State University Employee Scholarship Award
- 2000, Association of Metropolitan Sewerage Agencies National Environmental Achievement Award in Research & Technology
- 1999, US EPA Wastewater Management Research Excellence Award, First Place
- 1998, Rocky Mountain Water Environment Association – State of Colorado Biosolids Management Merit Award
- 1998, Hunter Follett Graduate Student Award, Colorado State University
- 1989, George M. Worrilow Scholarship for Academic Performance, University of Delaware
- 2008-2015, Kimberly High School Distance Track Coach; mentored ~ 200 athletes.