

**CURRICULUM VITAE**  
University of Idaho

**NAME:** Daniel G. Strawn

**DATE:** 01/08/2023

**RANK OR TITLE:** Professor

**DEPARTMENT:** Soil and Water Systems

**OFFICE LOCATION AND CAMPUS ZIP:** Ag. Sci Bldg. Office 117. Campus Zip 2340

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**DATE OF FIRST EMPLOYMENT AT UI:** January 4, 2000

**DATE OF TENURE:** 2005

**DATE OF PRESENT RANK OR TITLE:** 2011

**EDUCATION BEYOND HIGH SCHOOL:**

Ph.D., 1999, Plant and Soil Sciences. University of Delaware.

Dissertation Topic: *Kinetics and Mechanisms of Pb Sorption and Desorption on Soils and Soil Materials*. Advisor: D.L. Sparks.

B.S., 1994, Soil and Water Science. University of California, Davis.

**EXPERIENCE:**

**Teaching, Extension and Research Appointments:**

2011-present. Professor of Environmental Soil Chemistry, University of Idaho, Department of Soil and Water Systems.

2005-2011. Associate Professor of Soil Chemistry, University of Idaho, Department of Plant Soil and Entomological Sciences, Division of Soil Science.

2007-2008 (6 months). Visiting scientists/sabbatical appointment, Molecular Structures Division, Institute of Radiochemistry, FZD, Germany.

2000-2005. Assistant Professor of Soil Chemistry, University of Idaho, Department of Plant Soil and Entomological Sciences, Division of Soil Science.

1998-1999. Postdoctoral Researcher, University of California, Berkeley, Division of Ecosystem Sciences, Berkeley, California.

1994-1998. University Graduate Research Fellow, University of Delaware, Department of Plant and Soil Sciences, Newark, Delaware.

**Non-Academic Employment including Armed Forces:**

1993-1994. Scientific Aid/Intern, California Department of Water Resources, Sacramento, California.

**TEACHING ACCOMPLISHMENTS:** (Academic and Extension teaching)

**Areas of Specialization:** Environmental and Soil Chemistry

**Courses Taught:**

1. Env. Sci. 504: Geochemistry- Terrestrial Subsurface Processes
2. Soil 422: Environmental Soil Chemistry (in class and online)
3. Soil 522: Advanced Soil Chemistry
4. Soil 526: Soil Mineralogy
5. Soil 501: Soil and Water Science Seminar
6. Soil 438: Pesticides in the Environment

**Summary of Teaching**

<b>Class, Year, Units (enrolled)</b>	<b>Total Students</b>
Env. Soil Chemistry (Soils 422), 3 credits, Years: 2000, 2001, 2004, 2006, 2008, 2009, 2012, 2014, 2016, 2018, 2019, 2020, 2022 (Spring and Fall), 2024	204
Soil and Water Science Seminar (Soils 501), 1 credit, Years: 2007, S-2009, F-2009, S-2010, S-2011, S-2012, S-2013, S-2014, S-2015, S-2016, S-2017, S-2018, 2020, 2021, 2022, 2023	~135
Soil Mineralogy* (Soils 526), 4 credits, Years: 2003, 2005, 2008, 2010	21
Geochemistry: Terrestrial and Subsurface Processes* (ENVS 504), 4 credits, Years: 2003, 2004, 2005, 2006, S 2008, F 2008	97
Advanced Soil Chemistry (Soils 528, Soils 504, Soils 521), 3 credits, 2002, 2004, 2010, 2015(WSU), 2022, 2024	~61
Pesticides in the Environment (Soil 438), 3 credits, S 2023	~48

**Teaching Materials Developed:**

BbLearn and Canvas courseware to support electronic testing, homework, grading, and class discussion/chat sessions. Textbook “Soil Chemistry,” 2020, John Wiley and Sons)

**SCHOLARSHIP ACCOMPLISHMENTS:** (Including scholarship of teaching and learning, artistic creativity, discovery, and application/integration)

**Refereed/Adjudicated:****CHAPTERS AND TEXTBOOK**

1. Strawn, D.G.; D.L. Sparks. 2023. Sorption-Metals. Encyclopedia of Soils in the Environment. DOI:10.1016/b978-0-12-822974-3.00012-4
2. Strawn, D.G. H. Bohn, G. O’Connor. 2020. *Soil Chemistry*. 5<sup>th</sup> Edition. John Wiley and Sons, West Sussex, UK. 356 pages.
3. McDaniel, P.M. D.G. Strawn. 2016. Anaerobic Processes. Encyclopedia of Soil Science.
4. Strawn, D.G., H. Bohn. G. O’Connor. 2015. *Soil Chemistry*. John Wiley and Sons, West Sussex, UK. 375 pages.
5. Sparks, D.L.; A.M. Scheidegger, D.G. Strawn, and K.G. Scheckel. 1999. *Kinetics and Mechanisms of Metal Sorption at the Mineral/Water Interface*. In “Kinetics and Mechanisms of Reactions at the Mineral/Water Interface,” D.L. Sparks, and T.J. Grundl (eds.), American Chemical Society Symposium Series 715, pp. 108-135.
6. Strawn, D.G., and D.L. Sparks. 1999. *Sorption Kinetics of Trace Elements in Soils and Soil Materials*. In “The Fate and Transport of Trace Metals in the Vadose Zone,” H.M. Selim and I.K. Iskandar (eds.), Lewis Publishers, Boca Raton, Florida.

**Peer Reviewed/Evaluated:****JOURNAL PUBLICATIONS**

1. Hu, R., D.G. Strawn, A. Leytem, A. Moore. 2024. Long-term Dairy Manure Amendment Promotes Legacy Phosphorus Buildup and Mobility in Calcareous Soils. *Journal of Environmental Quality*, Accepted Feb. 2024.
2. Maggi, L., D.G. Strawn, Z.E. Kayler, B.J. Cade-Menun Barbara, G. Möller. 2024. Phosphorus availability and speciation in soils amended with upcycled dairy-waste nutrients. *Frontiers in Chemical Engineering*; Volume 5.
3. Taslakyan, L., Baker, M. C., Strawn, D. G., & Möller, G. 2023. Biochar-integrated reactive filtration of wastewater for P removal and recovery, micropollutant catalytic oxidation, and negative CO<sub>2</sub>e: Life cycle assessment and techno-economic analysis. *Water Environment Research*, 95(12), e10962. <https://doi.org/10.1002/wer.10962>.

4. Laan, M.; Z.E. Kayler; J. Huerta; D. G. Strawn. 2023. Barley (*Hordeum vulgare* L.) photosynthetic and water use efficiency response to dairy-amended biochar. *Agrosystems, Geosciences & Environment*. DOI: 10.1002/agg2.20423
5. Strawn, D.G. A.R. Crump, D. Peak, M.Garcia-Perez, G. Möller. 2023 Reactivity of Fe-amended biochar for phosphorus removal and recycling from wastewater. *PLOS Water* 2(4): e0000092. <https://doi.org/10.1371/journal.pwat.0000092>
6. Yu, P.; M.C. Baker; A.R. Crump; M. Vogler; D.G. Strawn; G. Möller. 2023. Biochar integrated reactive filtration of wastewater for P removal and recovery, micropollutant catalytic oxidation, and negative CO<sub>2</sub>e: Process operation and mechanism. *Water Environment Research*; 2023-09.
7. Baker, M. C., McCarthy, D., Taslakyan, L., Henschion, G., Mannion, R., Strawn, D. G., & Möller, G. (2023). Iron–ozone catalytic oxidation reactive filtration of municipal wastewater at field pilot and full-scale with high-efficiency pollutant removal and potential negative CO<sub>2</sub>e with biochar. *Water Environment Research*, 95(5), e10876. <https://doi.org/10.1002/wer.10876>
8. Taslakyan, L., M. C. Baker, D. S. Shrestha, D. G. Strawn, G. Möller. (2022). CO<sub>2</sub>e footprint and eco-impact of ultralow phosphorus removal by hydrous ferric oxide reactive filtration: A municipal wastewater LCA case study. *Water Environment Research*, 94(8), e10777.
9. Yang, R., X. Liang, D.G. Strawn. (2022). Variability in Cadmium Uptake in Common Wheat under Cadmium Stress: Impact of Genetic Variation and Silicon Supplementation. *Agriculture*, 12, 848.
10. Strawn, D. G., D., Mohotti, E. Carp, X. Liang, J. Chen, K. Schroeder, J. Marshall. (2022). Cadmium concentrations in Idaho wheat grain and soil. *Agrosystems, Geosciences & Environment*, 5, e20288.
11. Heron Thomas, Strawn Daniel G., Dobre Mariana, Cade-Menun Barbara J., Deval Chinnmay, Brooks Erin S., Piaskowski Julia, Gasch Caley, Crump Alex. (2021). Soil Phosphorus Speciation and Availability in Meadows and Forests in Alpine Lake Watersheds with Different Parent Materials. *Frontiers in Forests and Global Change*, 3:159. <https://www.frontiersin.org/article/10.3389/ffgc.2020.604200>
12. Strawn DG. Sorption of Chemicals in Soils. *Soil Systems*. 2021; 5(1):13. <https://doi.org/10.3390/soilsystems5010013>
13. Strawn, D G, & Hettiarachchi, G M. (2021). Fifty years of articles in JEQ on trace elements in the environment and future outlook. *Journal of Environmental Quality*. 50: 1266– 1281 <https://doi.org/10.1002/jeq2.20296>
14. Ortega-Pieck, A., J. Norby, E. Brooks, D.G. Strawn, A. Crump, D. Huggins. (2020). Sources and Subsurface Transport of Dissolved Reactive Phosphorus in a Semiarid, No-till Catchment with Complex Topography. *Journal of Environmental Quality*. 49. 10.1002/jeq2.20114.
15. LeTourneau, M., M. J. Marshall, M. R. Grant, P. M. Freeze, D.G. Strawn, B. Lai, A. Dohnalkova, J. B. Harsh, D. M. Weller and L. S. Thomashow (2020). "Phenazine-1-Carboxylic Acid-Producing Bacteria Enhance the Reactivity of Iron Minerals in Dryland and Irrigated Wheat Rhizospheres." *Environmental Science & Technology*. 53, 24, 14273–14284.
16. Moura Araujo, E. G. Lima, D.G. Strawn, Daniel. (2019). Soil Plays a Key Role in the Sustainability of Agricultural Systems. *EC Agriculture* 5, 545.
17. Araújo, E., D. G. Strawn, M. Morra, A. Moore and L. R. Ferracciú Alleoni (2019). "Association between extracted copper and dissolved organic matter in dairy-manure amended soils." *Environmental Pollution* 246, 1020-1026.
18. McFarland, J. W., M. P. Waldrop, D. G. Strawn, C. A. Creamer, C. R. Lawrence, M. P. Haw (2019). "Biological and mineralogical controls over cycling of low molecular weight organic compounds along a soil chronosequence." *Soil Biology and Biochemistry* 133, 16-27.
19. Vaughan, K. L., P. McDaniel, D.G. Strawn, and S. Blecker. 2018. Soil Evolution and Mass Flux of Basaltic Cinder Cones in a Cool, Semi-Arid Climate. *Soil Sci. Soc. Am. J.* 82:1177-1190.
20. McDaniel, P., M. Ross, J. Jimenez, D. G. Strawn, M. Valerio, M. J. Kimsey, S. Campbell, and A. Falen. 2018. Pedogenic Pathways in Andic Soils of the Northern Rocky Mountains (USA). *Soil Science Society of America Journal*; 82: 1308-1318. <https://doi.org/10.2136/sssaj2018.05.0186>.
21. Strawn, D. G. (2018) Review of interactions between phosphorus and arsenic in soils from four case studies. *Geochemical Transactions*, 19:10.
22. Page-Dumroese, D. S., M. R. Ott, D. G. Strawn & J. M. Tirocke (2018) Using Organic Amendments to Restore Soil Physical and Chemical Properties of a Mine Site in Northeastern Oregon, USA. *Applied Engineering in Agriculture*, 34, 43-55.
23. Norby, J., D. Strawn & E. Brooks (2018) Filter Membrane Effects on Water-Extractable Phosphorus Concentrations from Soil. *Journal of Environmental Quality*, 47, 378-382.
24. Ippolito, J. A., C. M. Berry, D. G. Strawn, J. M. Novak, J. Levine & A. Harley (2017) Biochars

- Reduce Mine Land Soil Bioavailable Metals. *Journal of Environmental Quality*, 46, 411-419.
25. Ott, M.R., D.S. Page-Dumroese, D.G. Strawn, J.M. Tirocke. 2017. Using organic amendments to restore soil physical and chemical properties of a mine site in northeastern Oregon, USA. *Transactions of the ASABE*.
  26. Weyers, E., D.G. Strawn, D. Peak, A. Moore, L. Baker, B. Cade Menun. 2016. Speciation of phosphorus in manure-amended calcareous soils. *Soil Science Society of America Journal* 80:1531–1542.
  27. Ippolito, J. C.M. Berry, D.G. Strawn, J.M. Novak, J. Levine, A. Harley. 2017. Heavy Metal Sorption Mechanisms in Biochar Amended Mine Tailings. *Journal of Environmental Quality* 46:411–419.
  28. McDaniel, P, D.G. Strawn. 2016. Anaerobic Processes. *Encyclopedia of Soil Science*. R. Lal Editor. CRC Press.
  29. Liang X., D.G. Strawn, J. Chen, J. Marshal. 2016. Cadmium Accumulation in Spring Wheat Grains as Influenced by Variety and Root Length. *Plant and Soil*. 421:219–231.
  30. Johnson-Maynard, J., D.G. Strawn. 2016. Linking Physical and Biogeochemical Properties and Processes in the Drilosphere. *Soil Science* 181(3/4): 126–132.
  31. Strawn, D. G., A. Rigby, L. Baker, M. Coleman, I. Koch. 2015. Biochar Soil Amendment Effects on Arsenic Availability to Mountain Brome (*Bromus marginatus*). *Journal of Environmental Quality* 44(4): 1315-1320.
  32. Osborne, L.R., L.L. Baker, D.G. Strawn. 2015. Lead Immobilization and Phosphorus Availability in Phosphate-Amended, Mine-Contaminated Soils. *Journal of Environmental Quality* 44:183-190.
  33. Baker L.L., D.G. Strawn 2014. Temperature effects on synthetic nontronite crystallinity and implications for nontronite formation in Columbia River Basalts. *Clays and Clay Minerals*, 62:2, 89-101.
  34. Baker L.L., R.D. Nickerson, D.G. Strawn 2014. XAFS study of iron-substituted allophane and imogolite. *Clays and Clay Minerals*, 62: 1, 20-34.
  35. Ippolito, J.A., D.G. Strawn, and K.G. Scheckel. 2013. Investigation of Copper Sorption by Sugar Beet Processing Lime Waste. *Journal of Environ Quality*, 42:919-924.
  36. Strawn, D.G., P.J. Hickey, P.A. McDaniel, and L.L. Baker. 2012. Distribution of As, Cd, Pb, and Zn in redox features of mine-waste impacted wetland soils. *Journal of Soils and Sediments* 12:1100-1110.
  37. Baker, L., D.G. Strawn. 2012. Fe K-edge XAFS spectra of phyllosilicates of varying crystallinity. *Physics and Chemistry of Minerals* 39:675-684.
  38. Baker, L.L., W.R. Rember, K.F. Sprenke, and D.G. Strawn. 2012. Celadonite in continental flood basalts of the Columbia River group. *American Mineralogist* 97, pages 1284–1290.
  39. Ippolito, J. A., D.G. Strawn, K. G. Scheckel, J. M. Novak, M. Ahmedna, M. A. S. Niandou. 2012. Macroscopic and Molecular Investigations of Copper Sorption by a Steam-Activated Biochar. *Journal of Environmental Quality* 41:1150-1156.
  40. Oram L., D.G. Strawn, G. Möller. 2011. Chemical Speciation and Bioavailability of Selenium in the Rhizosphere of *Symphyotrichum eatonii* from Reclaimed Mine Soils. *Environmental Science & Technology*. 45:870-875.
  41. Baker, L., D.G. Strawn, W. Rembre, K. Sprenke. 2011. Metal content of charcoal in mining-impacted wetland sediments. *Science of the Total Environment*. 409: 588-594.
  42. Baker, L. D.G. Strawn, P. McDaniel, K. Vaughn. 2010. XAS study of Fe mineralogy in a chronosequence of soil clays formed on basaltic cinders. *Clays and Clay Minerals*. 6:772-782.
  43. Oram L., D.G. Strawn, M. Morra, G. Möller. 2010. Selenium Biogeochemical Cycling and Fluxes in the Hyporheic Zone of a Mining-Impacted Stream. *Environmental Science & Technology*. 44: 4176–4183.
  44. Baker, L., D.G. Strawn. R. Smith. 2010. Cation Exchange on Vadose Zone Research Park Subsurface Sediment, Idaho National Laboratory. *Vadose Zone Journal*. 9: 476-485.
  45. Strawn, D.G., L. Baker. 2009. Molecular Characterization of Copper in Soils Using X-ray Absorption Spectroscopy. *Environmental Pollution*. 157 2813-2821.
  46. Strawn, D.G. L. Baker. 2008. Speciation of Cu in a contaminated agricultural soil measured by XAFS,  $\mu$ -XAFS and  $\mu$ -XRF. *Environmental Science and Technology* 42:37-42.
  47. McGregor, A.L., J.L. Johnson-Maynard, D.G. Strawn, B. Shafii, G. Möller. 2008. Plant Uptake and Leaching of Selenium In Manure- and Gypsum-Amended Soils of the Western Phosphate Resource Area. *Soil Science* 173:613-623.
  48. Toevs, G., M.J. Morra, L. Winowiecki, D.G. Strawn, M.L. Polizzotto, S. Fendorf. 2008. Depositional Influences on Porewater Arsenic in Sediments of a Mining-Contaminated Freshwater Lake. *Environmental Science & Technology* 42:6823-6829.

49. Hickey, P.J., P.A. McDaniel, D.G. Strawn. 2008. Characterization of iron- and manganese-cemented redoximorphic aggregates in wetland soils contaminated with mine wastes. *Journal of Environmental Quality*, 37, 2375-2385.
50. Oram, L., D.G. Strawn, M.A. Marcus, S. Fakra, G. Moller. 2008. Macro- and micro-scale investigation of selenium speciation in Blackfoot River, Idaho, USA sediments. *Environmental Science and Technology*, 42, 6830-6836.
51. R. L. Newcombe, D.G. Strawn, T. M. Grant, S. E. Childers, G. Möller. Phosphorus Removal from Municipal Wastewater by Hydrous Ferric Oxide Reactive Filtration and Coupled Chemically Enhanced Secondary Treatment: Part II—Mechanism. *Water Environment Research*. *Water Environment Research* 80(3): 248-256.
52. Furman O., D.G. Strawn, S. McGeehan. 2007. Sample Drying Effects on Lead Bioaccessibility in Reduced Soil. *Journal of Environmental Quality* 36:899-903.
53. Strawn, D.G., P. Hickey, A. Knudsen, L. Baker. 2007. Geochemistry of Lead Contaminated Wetland Soils Amended with Phosphorus. *Environmental Geology* 52, 109-122.
54. Toevs, G.R., Morra, M.J., Polizzotto, M.L., Bostick, B.C., Fendorf, S.E., Strawn, D.G., 2006. Metal(loid) Diagenesis in Mine-impacted Sediment of Lake Coeur d'Alene, Idaho. *Environmental Science and Technology*, 40, 2537-2543.
55. Ryser, A. L., D.G. Strawn, M. A. Marcus, S. Fakara, J. L. Johnson-Maynard, G. Moller. 2006. Microscopically Focused Synchrotron X-ray Investigation of Se Speciation in Soils Developing on Reclaimed Mine Lands. *Environmental Science and Technology*, 40: 462-467.
56. Furman O., D.G. Strawn, G. H. Heinz, B. Williams. 2006. Risk Assessment Test for Lead Bioaccessibility to Waterfowl in Mine-Impacted Soils in the Coeur d'Alene River Basin, Idaho. *Journal of Environmental Quality*, 35:450-458.
57. Furnare L., A. Vailionis, D.G. Strawn. 2005. Polarized-XANES and EXAFS Spectroscopic Investigation into Copper Complexes on Vermiculite. *Geochimica et Cosmochimica Acta*, 69: 5219-5231.
58. Furnare L., A. Vailionis, and D.G. Strawn. 2005. Molecular-level Investigation into Copper Sorption Mechanisms on Reduced Vermiculite. *Journal of Colloid and Interface Science*, 289: 1-13.
59. Kimsey M. Jr., P. McDaniel, D.G. Strawn, J. Moore. 2005. Fate of Applied Sulfate in Volcanic Ash-Influenced Forest Soils. *Soil Science Society of America Journal*, 69: 1507-1515.
60. Ryser A., D.G. Strawn, M.A. Marcus, J.L. Johnson-Maynard, M.E. Gunter, G. Möller. 2005. Micro-Spectroscopic Investigation of Selenium-Bearing Minerals from the Western US Phosphate Resource Area. *Geochemical Transactions*, 6:1-11.
61. Hansen, J., B. Cade-Menun, D.G. Strawn. 2004. Phosphorous Speciation in Manure-Amended Alkaline Soils. *Journal of Environmental Quality*, 33: 1521-1527.
62. Strawn, D.G., N.E. Palmer, L.J. Furnare, C. Goodell, J.E. Amonette, R.K. Kukkadapu. 2004. XAFS Investigation into the Sorption Mechanisms of Copper on Montmorillonite. *Clays and Clay Minerals*, 52:321-333.
63. Hansen, J., D.G. Strawn. 2003. Kinetics and Mechanisms of Phosphorous Release from Manure-Amended Alkaline Soils. *Soil Science*, 168:869-879.
64. Strawn D.G., H.E. Doner, M. Zavarin, S.A. McHugo. 2002. Microscale Investigation into the Geochemistry of Arsenic, Selenium and Iron in Soil Developed in Pyritic Shale Materials. *Geoderma*, 108:237-257.
65. O'Reilly S.E., D.G. Strawn, D.L. Sparks 2000. Residence Time Effects on Arsenate Adsorption/desorption Mechanisms on Goethite. *Soil Science Society of America Journal*, 65:67-77.
66. Strawn, D.G., D.L. Sparks. 2000. Effects of Soil Organic Matter on the Kinetics and Mechanisms of Pb(II) Sorption and Desorption in Soil. *Soil Science Society of America Journal*, 64:144-156.
67. Strawn, D.G., D.L. Sparks. 1999. The Use of XAFS to Distinguish Between Inner- and Outer-Sphere Lead Adsorption Complexes on Montmorillonite. *Journal of Colloid and Interface Science*, Vol. 216, pp 257-269.
68. Strawn, D.G., A.M. Scheidegger, and D.L. Sparks. 1998. Kinetics and Mechanisms of Pb(II) Sorption and Desorption at the Aluminum Oxide-Water Interface. *Environmental Science and Technology*, 32: 2596-2600.
69. Scheidegger A.M., D.G. Strawn, G.M. Lamble, and D.L. Sparks. 1998. The Kinetics of Mixed Ni-Al Hydroxide Formation on Clays and Al Oxides: A Time-resolved XAFS Study. *Geochimica et Cosmochimica Acta*, 62:2233-2245.

## OTHER PUBLICATIONS

1. **Strawn, D.G.** et al. 2015. Promoting Advanced Analytical Tools in Soil Science for Food Security. American Society of Agronomy and Soil Science Society of America <https://www.crops.org/science-policy/white-papers/browse/>
2. **Strawn, D.G.**, A. Ryser, J. Johnson Maynard, G. Moller, B. Hart, M. Marcus. Biogeochemistry of Selenium on Remediated Phosphate-Mine Tailings in Southeastern Idaho. Paper was presented at the 2004 National Meeting of the American Society of Mining and Reclamation and The 25<sup>th</sup> West Virginia Surface Mine Drainage Task Force, April 18-24, 2004. Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.
3. **Strawn, D.G.**, and H.E. Doner. 2001. "Element Associations and Spatial Distribution as Components of Soil Quality." In *Soil Quality in the California Environment: Annual Report of Research Projects, 1999-2000*. A. Zabel and G. Sposito (eds), M. Theo Kearney Foundation of Soil Science.

## INVITED PRESENTATIONS (RECENT FIVE AS PRESENTER)

1. **Strawn D.**, G. Moller (2021) Presentation in Cultivating Success 2021 Small Farm and Ranch Webinar Series. Organizer Collette DePhelps. Title: Biochar: Properties and Potential as an Agricultural Amendment. 35 attendees, 25 external views (as of August 2021).
2. **Strawn, D.G.**, J. Chen, P. McDaniel, J. Marshal. 2014. Field-based study of factors affecting cadmium uptake by wheat from Idaho soils. Idaho Wheat Commission Annual Meeting, Boise, Idaho.
3. **Strawn D.G.**, Baker L., P. McDaniel. 2011. Speciation of iron in nano-crystalline aluminosilicates. Symposium--Minerals, Nanoparticles, and Health: I. October 18, 2011. SSSA Annual Meetings. San Antonio Texas. Invited by Youjun Deng (Texas AM).
4. **Strawn, D.G.** 2008. Molecular Characterization of Selenium in the Environment. University of Montana Geology Seminar. September 2008. Missoula MT. Invited by Nancy Hinman.
5. **Strawn, D.G.** July 2007. Use of Synchrotron Radiation to Investigate Chemical and Mineral Speciation in Soils. European Synchrotron Radiation Facility Seminar Series. Invited by Andreas Scheinost.
6. **Strawn, D.G.**, L. Oram, G. Möller. August 2007. Molecular Characterization of Selenium in the Environment. Keynote address in symposium entitled, "Speciation and Reactivity of Trace Elements in Natural Environments." 2007 Goldschmidt Conference. Invited by Andreas Voegelin.

## PRESENTATIONS (RECENT FIVE AS PRESENTER)

1. M Laan, DG Strawn, Z Kayler, BJ Cade-Menun, G Moller. Availability and Speciation of Soil Phosphorus in Manure-Fortified Biochar-Amended to Soils. SSSA International Annual Meeting, St. Louis, MO, 2023
2. **Strawn, D.G.**, Kayler, G. Moller, M. Laan. 2022. Idaho Sustainable Initiative for Dairy (ISAID) annual meeting. Phosphorus Speciation and Availability in Dairy-Amended Soils. October 7, 2022.
3. **Strawn, Heron, Cade-Menun, Dobre, Deval, Piaskowski, Crump, Gasch.** 2021. Soil Phosphorus Speciation and Availability in Meadows and Forests in Alpine Lake Watersheds with Different Parent Materials. Soil Science Society of America annual meeting, Salt Lake City, UT.
4. Norby, J., E. Brooks, **D.G. Strawn.** 2017. Subsurface phosphorus transport through a no-till field in the semi-arid Palouse region. AGU, New Orleans
5. **Strawn, D.G.** 2015. The essence of soil chemistry class. Annual meeting of the Soil Science Society of America, Minneapolis, MN. Nov. 2015.

## PATENTS:

1. Möller, G., Strawn, D.G., Baker, M. and Staggs, G. System and Method for Water Treatment, USPTO Appl. No. 20190084843; 2019
2. Möller, G., Strawn, D.G., Baker, M. and Staggs, G. System and Method for Water Treatment, EU Appl. No. 20190084843; 2019
3. Möller, G. and Strawn, D.G. Biochar Water Treatment, U.S. Patent No. 10,351,455; 2019

**SERVICE:**

1. Technical Editor for Journal of Environmental Quality (Journal of the Soil Science Society of America) 2020-present.
2. Manuscript reviewer (12+ manuscripts/yr): Journal of Soil Science, Environmental Science and Technology, Journal of Environmental Quality, Water Resources, Geoderma, Soil and Sediment Contamination: an International Journal, Geochimica et Cosmochimica Acta, Soil Science Society of America Journal, Soil Science, Journal of Colloid and Interface Science.
3. Proposal reviewer/panel member: CSREES/USDA, Stanford Synchrotron Radiation Source Laboratory, NSF, and DOE. Swiss Federal Research Agency, Kearney Research Foundation, Netherlands National Council for the Earth and Life Sciences, Canadian Space Agency, Agriculture and Agri-food Canada.
4. Associate Editor: Soil Science Society of America Division S-9: Soil Mineralogy. 2005-2012
5. Division Chairman, Soil Science Society of America Division S-2, 2015.
6. Member NCR 174: Synchrotron X-ray Sources in Soil Science Research. 2000-current
7. Secretary and Chair of NC1022 Multi-state group 2008-2011, "The Chemical and Physical Nature of Particulate Matter Affecting Air, Water and Soil Quality"
8. Member A236.1, Membership Services and Retention Committee of the American Society of Agronomy.
9. Chair of Marion L. and Chrystie Jackson Soil Science Award for SSSA. Organized committee selection process and presented award at annual meetings. 2005
10. Participant in the McCall Outdoor Science School, Water Resources in a Changing Climate high school student and teacher workshop (2010)
11. Member of the Proposal Review Committee at the Canadian Light Source 2011-2012
12. Technical Editor Journal of Environmental Quality 2021-2023

**HONORS AND AWARDS**

1. Marion L. and Chrystie M. Jackson Award, 2011. Awarded by the Soil Science Society of America for mid-career accomplishments in research and teaching in soil chemistry and mineralogy.
2. Outstanding Reviewer Recognition Award, 2011. Journal of Environmental Quality.
3. Harrison Prescott Eddy Medal, 2009. The Water Environment Federation: A technical and educational organization with 36,000 individual members and 75 affiliated Member Associations representing water quality professionals around the world awarded the *Harrison Prescott Eddy Medal* to our research team for a vital contribution to the knowledge and fundamental principles of water treatment.
4. Outstanding Reviewer Recognition Award, 2004. Journal of Environmental Quality.
5. Presidential Early Career Award for Scientist and Engineers, 2001. USDA awardee.