**Stewart G. Wilson**

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**EDUCATION**

**Ph.D., Soils and Biogeochemistry,** University of California, Davis. Degree expected fall 2018. Dissertation: Phosphorous in California: Predictive Mapping, Lithologic and Climatic Influences and Sustainable Management. G.P.A 3.9.

Advisor: Dr. Anthony Toby O’Geen.

**Master of Science, Soils and Biogeochemistry**, University of California, Davis. Sept., 2015. Thesis: Soil Genesis, Mineralogy and Phosphorus Dynamics of the Clear Lake Volcanic Field. G.P.A 3.9. Advisor: Dr. Randy A. Dahlgren.

**Bachelor of Science, Wildland Soils,** Humboldt State University, December 2010. G.P.A 3.8

**Research Experience**

**Doctoral Research, UC Davis, 8/2014 - present.**

**1)** Conceived and executed field, laboratory and statistical components of a study investigating the influence of climate and lithology on soil phosphorous. Three transects spanning four climatic zones on three lithologies from the southern Cascades to the southern Sierra Nevada. This work involves new insights and significant progress in the understanding of phosphorous biogeochemistry. **2)** Predictive soil mapping of phosphorus availability and fixation. This research uses machine learning algorithms to predictive soil P availability and sorption in California vineyard soils, from limited point data and raster stacks of environmental covariates. **3)** Executed two-year field study with Gallo Vineyards investigating grapevine growth and nutrient status to compost application rates. Investigated soil and vine petiole nutrients, berry weights, pruning weights, cluster weights, and grape juice Brix˚, titratable acidity and pH.

**Masters Research, UC Davis, 9/2011 – 8/2014.**

**1)** Conceived and executed field and laboratory components of study investigating the influence of lithology on soil genesis, mineralogy and soil physicochemical properties. Performed soil characterization, (pH, CEC, carbon and nitrogen, phosphorous sorption, soil texture etc.), and mineralogical analysis via XRD. **2)** Performed fieldwork and laboratory analysis investigating the application of diverse sources of phosphorous on phosphorous cycling in vineyard soils.

**Teaching and Outreach**

**Teaching Assistant:** Soils in Land Use and the Environment, 2016 and 2017. Prepared notes for discussion, graded projects, homeworks and tests. Created new lecture materials on forest soils.

**Invited Field Tour Leader and Lecturer:** Humboldt State University. Soils 460: Forest and Range Soils Management. 4/8/2016. Lead undergraduate field tour to Clear Lake Volcanic Field. Provided teaching materials, met with landowners and led undergraduate lecture.

**Invited Lecturer:** Chico State University. Soil Fertility. 10/12/2016 and 11/8/2017. Lecture on phosphorus soil fertility and biogeochemistry to undergraduate soil fertility class.

**Project Leader.** Soils, Vines and Wines, 2014. U.S. Congress. Collected soil samples from vineyards around California for use in presentation. Created an interactive sensory presentation paring wines with soils in wine glasses. Created a “Soils, Vines and Wines” poster. Presented to Congress People and staff in Congressional Agriculture room. Funded through Soil Science Society of America and U.C. Davis.

**Principle Organizer and Field Tour Leader:** California Forest Soils Council and Professional Soil Scientist Association of California Annual Meeting, 2014. Organized and lead field tour exploring forest soils, fisheries, and forest management in Jackson Experimental Forest, Mendocino, CA.

**Journal Cover:** Soil Science Society of America Journal, 2017, Vol. 80(5).

**Featured Research:**  Hmielowski, T. (2017). Seasonal fate of phosphorus in vineyard soils. Crops, Soils, Agronomy News, 62(2), 8-9.

**Publications:**

**Wilson, S. G.,** Lambert, J. J., Nanzyo, M., & Dahlgren, R. A. (2017). Soil genesis and mineralogy across a volcanic lithosequence. *Geoderma*, 285, 301-312.

**Wilson, S. G.,** Lambert, J. J., & Dahlgren, R. A. (2016). Seasonal Phosphorus Dynamics in a Volcanic Soil of Northern California. *Soil Science Society of America Journal*, *80*(5), 1222-1230.

**Abstracts and Presentations (Abbreviated)**

**Wilson, S. G.,** et al. "Influence of Climate and Lithology on Soil Phosphorus." AGU Fall Meeting Abstracts. 2016. Oral Presentation

Compost Application on Degraded Vineyard Soils: Impact on Vine Nutrient Status, Grape Quality, Yield Parameters and Soil Fertility. 2014, Soil Science Society of America Annual Meeting. Long Beach, CA. Oral Presentation, PhD oral competition, 2nd Place.

Seasonal Dynamics In Phosphorus Management In a Volcanic Soil In California. 2013, Soil Science Society of America Annual Meeting. Tampa, FL. Oral Presentation. M.S. Oral Competition 2nd Place.

Compost Application Improves Cabernet Sauvignon Nutrient Status, Berry Weight, Pruning Weight and Per Vine Yield, Without Changing Vine Balance or Juice Chemistry. 2013, American Society of Enology and Viticulture Annual Meeting, Monterrey CA. Poster and flash talk.

Soil Genesis and Mineralogy across a Volcanic Lithosequence in Northern California. 2014, World Congress of Soil Science. Jeju, Republic of Korea. Oral Presentation.

**Academic Service**

**Chair**. California Forest Soils Council, 2014.

**Vice-Chair.** California Forest Soils Council, 2013

**References**

Randy A. Dahlgren, Ph.D. rdahlgren@ucdavis.edu

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