Luke Salvato

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EDUCATION

PhD Soils and Biogeochemistry *UC Davis* 2018 - Current

- *Dissertation:* Land Use Change in California's Rice Growing Region: The Drivers and Consequences of Widespread Fallowing and Conversion to Perennial Tree Crops.
- *Research Interests:* Remote Sensing, Land Use Classification, Spatial Data Analysis, Machine Learning, Soil Science, Plant Science

MSc International Agricultural Development *UC Davis* 2016 - 2018

- *Thesis:* Recycled Irrigation Water Leads to High Field-Water and Grain Methylmercury Concentrations in California's Rice Growing Region
- *Domain Knowledge:* Soil Biogeochemistry, Agricultural Science, International Development Theory and Practice, Participatory Research

BA Earth and Oceanographic Science *Bowdoin College* 2007 - 2011

- *Thesis:* Phosphorous Dynamics and Sediment Transport in Androscoggin Lake's Outlet Delta System, Maine
- *Domain Knowledge:* Geology, Minerology, Terrestrial and Marine Biogeochemistry

PUBLICATIONS

In Review:

Salvato, L., Linquist, B.A., Pittelkow, C. *A Regional Assessment of Soil Suitability for Crop Rotation in California's Rice Country*

Salvato, L., Marvin-DiPasquale, M., Fleck, J.A., McCord, S.A., Linquist, B.A., *MeHg Export from Rice Paddies is Driven by Episodic Periods of High Turbidity and High Dissolved Organic Matter*

In Prep:

Salvato, L., O'Geen A., Pittelkow, C., Linquist, B.A. *The Conversion of Agricultural Wetlands to Tree Crops in California is Driven by Water Availability and Limited by Soil Type*

Salvato, L., O'Geen A., *Where has California's prime farmland gone? Urban and agricultural expansion across a high diversity of soil types*

TEACHING

Applied Statistics for Agricultural Sciences (Plant Sciences, UC Davis) Fall 2021 and 2022

- Lead Teaching Assistant: I guide and mentor four other teaching assistants, prepare weekly lab exercises, set up grading processes, and maintain electronic learning materials
- Teach a weekly 3-hour lab to 35 students on data analysis, data visualization, hypothesis testing, and modeling

Environmental Monitoring (Land, Air, and Water Resources, UC Davis) Spring 2019

- Taught a weekly 4-hour lab to 20 undergraduate students on methods for collection and analysis of environmental data including weather, climate, hydrologic, snow, and other biological, physical, and chemical parameters
- Led field tours to UC Davis and UC Berkely research stations

DataLab 'Fellow' UC Davis 2021 to Present

- Instruction: Introduction to Google Earth Engine (two-hour workshops, quarterly; YouTube)
- Mentorship: Mapping and Spatial Analysis Mentor to Undergraduate and Graduate Students (*MapTime* Davis, monthly)

OUTREACH & LEADERSHIP EXPERIENCE

Office 'R's, UC Davis, June 2022 - Present

- I host office hours for graduate students seeking R support (1 hour per week)

Soils and Biogeochemistry Seminar Committee, UC Davis, 2019-2021

- Scheduled events, coordinated with speakers, day-of event preparation

Backcountry Skiers of Davis, CA, 2017 - Present

- Founder and organizer of a networking and mentorship group with a 200-member email-list (snow-social@googlegroups.com).

PRESENTATIONS

*Land Use Change in California's Rice Growing Region: Drivers and Consequences***.** Luke Salvato, Cameron Pittelkow, Bruce Linquist. Oral Presentation at the SSSA Annual Meeting in Salt Lake City, Utah. November 2021.

Soil Suitability for Land Use Change in California's Rice Growing Region. Luke Salvato, Bruce Linquist. Poster Presentation at the Annual Rice Field Day, Biggs, CA. August 2021.

Methylmercury Dynamics in Agricultural Wetlands in the Sacramento Valley, CA. Luke Salvato, Mark Marvin-DiPasquale, Jacob Fleck, Stephen McCord, Bruce Linquist. Oral Presentation at the SSSA Meeting in San Diego, CA. January 2019.

Methylmercury Dynamics in California's Agricultural Wetlands Using Recycled Irrigation Water. Luke Salvato, Mark Marvin-DiPasquale, Jacob Fleck, Stephen McCord, Bruce Linquist. 30-minute report at the Delta-Tributary Mercury Council Meeting in Sacramento, CA, September 2018.

GRANTS & FELLOWSHIPS ($161,500)

2021	Miller Plant Sciences Award	$3,000
2020	UC Davis Plant Sciences Fellowship	$138,400
	Henry A. Jastro Research Award	$8,800
2018	Ben A. Madson Scholarship for Academic Accomplishment	$2,500
	D. Marlin Brandon Rice Research Fellowship	$2,500
2011	Maine Water Resources Research Institute (WRRI)	$3,500

EXPERIENCE

DataLab UC Davis May to September 2019

STRIDE (Successful Transformation of a Research Idea into Data Engagement)

- 12-week data science incubator program focusing on best practices for data driven science: reproducibility (Git), machine learning (RStudio), and GIS (Google Earth Engine)

Catholic Relief Services (CRS) May to September 2017

RIFA (Research and Innovation Fellowship in Agriculture) Fellow (Uganda)

- Economic assessment of the North-Eastern Uganda oil seed industry
- Conducted ten 3-hour trainings on seed production and sanitary and phytosanitary regulations to extension agent groups in coordination with a national oil-seed crop enhancement program

International Rescue Committee (IRC) January to June 2017

Volunteer Researcher (Sacramento, CA)

- Employed participatory methods to design and implement a perennial herb garden at New Roots Farm, which is operated by a group of Nepali refugee farmers in Sacramento who now harvest, eat, and sell from the garden

F/V Nightingale *Sternman (Stonington, ME)* 2014 to 2016

- Commercial lobster, shrimp, and halibut fishing aboard a 36-foot owner-operated vessel
- Applied knowledge in natural resource management and ecology to season-specific decisions on harvest area, bait type and amount, and fishing pressure

Four Season Farm *Manager (Brooksville, ME)* 2011 to 2014

- Managed all aspects of the farm's operation (seeding, soil preparation, irrigation, harvest, sales and delivery, livestock management, and training incoming employees)

OTHER

- Programming: R, Google Earth Engine, Python, Java
- Public speaking; curriculum planning and teaching; community engagement; discussion facilitation
- Languages: Japanese (conversational), Nepali and Italian (beginner)

REFERENCES

- Professor Bruce Linquist, PhD Supervisor, balinquist@ucdavis.edu
- Professor Cameron Pittelkow, Dissertation Committee Member, cpittelkow@ucdavis.edu
- Professor Anthony O'Geen, Dissertation Committee Member, atogeen@ucdavis.edu