**Patricia Y. Oikawa**

**EMPLOYMENT**

Assistant Professor, Department of Earth and Environmental Sciences

California State University, East Bay Sept 2016-present

**EDUCATION AND TRAINING**

University of California Santa Barbara Ecology B.S. 2004

University of Virginia Biology Ph.D. 2011

University of California Riverside Botany and Plant Sciences Postdoc, 2011-2013

University of California Berkeley Environmental Science Postdoc, 2013-2016

**PREVIOUS RESEARCH EXPERIENCE**

**Postdoctoral Fellow**, University of California Berkeley, Department of Environmental Science Policy and Management, Oct 2013–Aug 2016

TOPIC: Using data-model assimilation techniques to constrain soil and ecosystem scale fluxes of CO2, H2O, and CH4 from drained and flooded peatlands in the Sacramento-San Joaquin River Delta

**Postdoctoral Scholar**, University of California Riverside, Department of Botany and Plant Sciences, 2011–2013

TOPIC: Investigating soil, leaf, and canopy scale fluxes of CO2, H2O, NOx, N2O, and biogenic volatile organic compounds from biofuel feedstock *Sorghum bicolor* grown in the low desert of California

**Research Assistant/Ph. D. Fellow**, Department of Biology, University of Virginia, 2007–2011

TOPIC: Investigating the mechanisms regulating methanol production and emission from leaves

**Research Assistant/Ph. D. Fellow,** Department of Ecology and Evolution, State University of New York at Stony Brook, 2005–2007

TOPIC: Methanol emission responses to herbivory in aspen *Populus grandidentata* and pine *Pinus strobus*

**TEACHING AND MENTORING EXPERIENCE**

**California State University, East Bay**

Courses: Biogeochemistry, Weather and the Atmosphere, Environmental Problems of California, Environmental Biology and Lab

Mentoring: 1 masters and 6 undergraduate students have participated in field research in the Sacramento-San Joaquin River Delta and Imperial Valley, CA

**University of California, Berkeley**

Courses:Women in Science and Engineering Theme Program (WiSE) seminar

Mentoring: M.S. student from ENSTA ParisTech and 2 undergraduate students in the Biology Scholars Program, a program designed to support underrepresented minorities in the sciences, 2014-2015

**University of California Riverside**

Mentoring: supervised 10 undergraduate research projects conducted at the University of California Desert Research and Extension Center; 2 students received Chancellor’s Research Fellowships

**GRANTS**

Office of Research and Support Programs, CSU East Bay, Faculty Support Grant, 2017/18. $4910. Title: Carbon Sequestration in the Hayward Shoreline.

California Department of Fish and Wildlife Wetlands Restoration for Greenhouse Gas Reduction Grant Program, in collaboration with the University of California Berkeley and the CA Department of Water Resources, 2016-20. $10,000,000. Title: Improving measurement and modeling of greenhouse gas emissions from drained and flooded peatlands in the Sacramento-San Joaquin River Delta.

USDA-NIFA Agriculture and Food Research Initiative Competitive Grants Program, in collaboration with University of California Riverside and University of Nebraska, 2016-19. $500,000. Title: Accelerated nitrogen cycling and trace gas emissions in high temperature agroecosystems.

**AWARDS AND FELLOWSHIPS**

USDA-NIFA Postdoctoral Fellowship, 2013-2015

Delta Science Foundation Postdoctoral Fellowship, 2013-2015 (*declined*)

NSF-IGERT Biosphere Atmosphere Research and Training Fellowship, 2006-2008

**PUBLICATIONS**

1. Fertitta-Roberts, C., Grantz D.A., Santiago L., **Oikawa, P.Y.**, Liang L., Jenerette G.D. A tale of two stressors: How stomatal regulation balances heat and drought tolerance in Sorghum. *Plant, Cell and Environment, submitted.*
2. Fertitta-Roberts, C., **Oikawa, P.Y.**, Jenerette G.D. Evaluating the greenhouse gas mitigation potential of alternate wetting and drying in rice through life cycle assessment. *Science of the Total Environment, submitted.*
3. Hemes, K., Eichelmann, E., Chamberlain S.D., Knox S.H., **Oikawa, P.Y.**, Sturtevant C., Verfaillie J., Baldocchi D.D. (2018) A unique combination of aerodynamic and surface properties contribute to surface cooling in restored wetlands of the Sacramento-San Joaquin Delta, California. *Journal of Geophysical Research Biogeosciences,* DOI: 10.1029/2018JG004494
4. Chamberlain, S.D., T. Anthony, W. Silver, Eichelmann, E., K. Hemes, **P.Y. Oikawa**, C. Sturtevant, D. Szutu, J. Verfaillie, D.D. Baldocchi (2018) Soil properties and sediment accretion modulate methane fluxes from restored wetlands. *Global Change Biology,* DOI: 10.1111/gcb.14124
5. Eichelmann, E., K. Hemes, S.H. Knox, **P.Y. Oikawa,** S.D. Chamberlain, C. Sturtevant, J. Verfaillie, D.D. Baldocchi (2018) The effect of land cover type and structure on evapotranspiration from agricultural and wetland sites in the Sacramento–San Joaquin River Delta, California. *Agricultural and Forest Meteorology,* **256**:179-195.
6. **Oikawa, P.Y.**, G.D. Jenerette, S.H. Knox, C. Sturtevant, J. Verfaillie, I. Dronova, C.M. Poindexter, Eichelmann, E., D. Baldocchi. (2017) Evaluation of a hierarchy of models reveals importance of substrate limitation for predicting carbon dioxide and methane exchange in restored wetlands. *Journal of Geophysical Research, Biogeosciences*, *doi:* 10.1002/2016JG003438*.*
7. **Oikawa, P.Y.,** C. Sturtevant, S.H. Knox, J. Verfaillie, Y.W. Huang, D. Baldocchi. (2017) Revisiting the partitioning of net ecosystem exchange of CO2 into photosynthesis and respiration with simultaneous flux measurement of 13CO2 and CO2, soil respiration and a biophysical model, CANVEG. *Agricultural and Forest Meteorology*, **234**:149-163.
8. Jardine K.J.,Fernandes de Souza V., **Oikawa, P.Y.**, Higuchi N., Bill M., Porras R., Niinemets U., Chambers J. (2017) Integration of C1 and C2 metabolism in trees. *International J. of Molecular Sciences*, *doi:*10.3390/ijms18102045.
9. Knox, S.H., I. Dronova, C. Sturtevant, **Oikawa, P.Y.,** Matthes, J., J. Verfaillie, D. Baldocchi. (2017) Using digital camera and Landsat imagery with eddy covariance data to model gross primary production in restored wetlands. *Agricultural and Forest Meteorology* **237**: 233-245.
10. Baldocchi, D., S.H. Knox, I. Dronova, J. Verfaillie, **P.Y. Oikawa**, C. Sturtevant, J. Hatala-Mathes, M. Detto. (2016) The impact of expanding flooded land area on the annual evaporation of rice. *Agricultural and Forest Meteorology,* **223**:181-193.
11. Knox, S.H., J. Hatala-Mathes, C. Sturtevant, **P.Y. Oikawa**, J. Verfaillie, D. Baldocchi. (2016) Biophysical controls on the interannual variability in ecosystem-scale in CO2 and CH4 exchange in a California rice paddy. *Journal of Geophysical Research: Biogeosciences, doi:* 10.1002/2015JG003247*.*
12. **Oikawa, P.Y.**, C. Ge, J. Wang, J.E. Eberwein, L. Liang, L.A. Allsman, D.A. Grantz, G.D. Jenerette. (2015) Unusually high soil nitrogen oxide emissions influence air quality in high temperature agricultural region. *Nature Communications, doi: 10.1038/ncomms9753.*
13. Sturtevant, C., B.L. Ruddell, S.H. Knox, J. Verfaillie, J. Hatala, **P.Y. Oikawa**, D. Baldocchi. (2015) Identifying the complex processes driving greenhouse gas exchange at multiple time scales in restored wetlands. *Journal of Geophysical Research: Biogeosciences, doi:* 10.1002/2015JG003054*.*
14. Eberwein, J.E., **P.Y.** **Oikawa,** L.A. Allsman, G.D. Jenerette. (2014) The effects of C, N and temperature interactions on soil respiration quantified through Michaelis-Menten kinetics. *Journal of Soil Biology and Biochemistry*.
15. **Oikawa, P.Y.**, G.D. Jenerette, D.A. Grantz. (2014) Offsetting high water demands with high productivity: Sorghum as a biofuel crop in a high irradiance arid ecosystem. *Global Change Biology Bioenergy*, doi:10.1111/gcbb.12190.
16. **Oikawa, P.Y.**, D.A. Grantz, A. Chatterjee, J.E. Eberwein, L.A. Allsman, G.D. Jenerette. (2014) Unifying soil respiration pulses, inhibition, and temperature hysteresis through dynamics of labile carbon and soil O2. *Journal of Geophysical Research: Biogeosciences*, doi:10.1002/2013JG002434
17. **Oikawa, P.Y.**, M.T. Lerdau. (2013) Catabolism of phytogenic volatile organic compounds. *Trends in Plant Science*, 18:695-703.
18. **Oikawa, P.Y.**, B.M. Giebel, L. da S.L. Sternberg, L. Li, M.P. Timko, P.K. Swart, D.D. Riemer, J.E. Mak, M.T. Lerdau. (2011) Leaf and root pectin methylesterase activity and 13C/12C stable isotopic ratio measurements of methanol emissions give insight into methanol production in *Lycopersicon esculentum*. *New Phytologist*, 191:1031-1040.
19. **Oikawa, P.Y.**, L. Li, M.P. Timko, J.E. Mak, M.T. Lerdau. (2011) Short term changes in methanol emission and pectin methylesterase activity are not directly affected by light in *Lycopersicon esculentum*. *Biogeosciences*, 8:1023-1030.

**PUBLICATIONS IN PREPARATION**

**NON-REFEREED PUBLICATIONS**

1.Deverel, S.J., **P.Y. Oikawa**, S. Mack, L. Silva, 2016, Wetland Implementation and Rice Cultivation in the Sacramento-San Joaquin Delta, San Francisco Estuary and the Coast of California – Methodology for Quantifying Greenhouse Gas Emissions Reductions, Version 1.0, in review, American Carbon Registry

**SELECTED PRESENTATIONS**

Baldocchi, D.D., Ma, S., **Oikawa, P.Y.**, Youngryel, R. 2018. Measuring and Modeling Ecosystem Photosynthesis in California, A Natural Laboratory for Studying Environmental Change due to Weather, Climate, Structure and Function and Management. Plant Biology Photosynthesis Meeting. Montreal, CA (oral presentation)

**Oikawa, P.Y.**, I. Dronova, S. Knox, L. Windham-Meyers, A. Srinivas, M. Burnham, E. Eichelman, K. Hemes, J. Verfaillie, D.D. Baldocchi. 2017. Improving ecosystem model PEPRMT and remote sensing photosynthesis (GPP) products in wetlands using stable carbon and oxygen isotopes. Ecological Society of America. Portland, OR (oral presentation)

**Oikawa, P.Y.**, C. Fertitia, S. Knox, E. Eichelman, C. Sturtevant, K. Hemes, J. Verfaillie, J. Hatala-Matthes, G.D. Jenerette, D.D. Baldocchi. 2017. Modeling effects of Alternate Wetting and Drying (AWD) on methane fluxes from rice. FLUXNET conference. Berkeley, CA (poster presentation)

Deverel, S., Dore S., **Oikawa P.Y.**,Knox S., Brock B. 2016. Greenhouse gas emissions reductions on agricultural lands in the Sacramento-San Joaquin Delta using the protocol for wetland implementation and rice cultivation. Bay-Delta Science Conference, Oakland, CA (poster presentation)

**Oikawa, P.Y.** 2016. Modeling greenhouse gases in restored wetlands in the Sacramento-San Joaquin River Delta, Affinity Speaker Series and Earth and Environmental Sciences Seminar Series, California State University, East Bay

Deverel, S., **P.Y. Oikawa.** 2016. Methodology for quantifying greenhouse gas emissions reductions: Wetland implementation and rice cultivation in the Sacramento-San Joaquin Delta, San Francisco Estuary and the California Coast, American Carbon Registry Webinar (webinar)

**Oikawa, P.Y.**, S. Knox, C. Sturtevant, J. Verfaillie, I. Dronova, C. Poindexter, G.D. Jenerette, D.D. Baldocchi. 2015. Using eddy covariance of CO2, 13CO2 and CH4, continuous soil respiration measurements, and digital photography to constrain a process-based biogeochemical model for carbon market-funded wetland restoration. American Geophysical Union. San Francisco, CA (oral presentation)

**Oikawa, P.Y.**, G.D. Jenerette, S. Knox, C. Sturtevant, J. Verfaillie, I. Dronova, C. Poindexter, D.D. Baldocchi. 2015. Farming carbon instead of corn: A biogeochemical model for carbon market-funded wetland restoration. Ecological Society of America. Baltimore, Maryland. (oral presentation)

**Oikawa, P.Y.**, G.D. Jenerette, S. Knox, C. Sturtevant, J. Verfaillie, I. Dronova, C. Poindexter, D.D. Baldocchi. 2015. Farming carbon instead of corn: A biogeochemical model for carbon market-funded wetland restoration. USDA-NIFA Postdoctoral Fellows Meeting. Washington, D.C. (poster presentation)

**Oikawa, P.Y.**, S. Knox, J. Verfaillie, C. Sturtevant, G.D. Jenerette, B. Brock, J.D. Jenerette, D.D. Baldocchi. 2015. Farming carbon instead of corn: A biogeochemical model for carbon market funded wetland restoration. Department of Environmental Science, Policy and Management, UC Berkeley. (oral presentation)

**Oikawa, P.Y.**, G.D. Jenerette, S. Knox, C. Sturtevant, J. Verfaillie, I. Dronova, C. Poindexter, D.D. Baldocchi. 2015. Process-based modeling of CO2 and CH4 from managed peatland systems: introducing the PEPRMT model. Society for Wetland Scientists. Providence, Rhode Island. (oral presentation)

**Oikawa, P.Y.**, S. Knox, J. Verfaillie, C. Sturtevant, G.D. Jenerette, B. Brock, D.D. Baldocchi. 2014. Process-based modeling of CO2 and CH4 from managed peatland systems. Data Assimilation in Biogeochemical Cycles. Trieste, Italy. (poster presentation)

**Oikawa, P.Y.**, S. Knox, J. Verfaillie, C. Sturtevant, G.D. Jenerette, B. Brock, D.D. Baldocchi. 2014. Improving process-based modeling of CO2 and CH4 from managed peatland systems. Air Pollution and Global Change Symposium. Monterey, CA. (poster presentation)

**Oikawa, P.Y.**, G.D. Jenerette, S. Knox, C. Sturtevant, J. Verfaillie, D.D. Baldocchi. 2014. Improving process-based modeling of CO2 and CH4 from managed wetland and rice systems in the Delta. Bay-Delta Science Conference. Oakland, CA. (poster presentation)

**Oikawa, P.Y.**, D.A. Grantz, A. Chatterjee, J.R. Eberwein, L.A. Allsman, G.D. Jenerette. 2012. Factors regulating soil surface CO2 and NOx flux in response to high temperature, pulse water events, and nutrient fertilization. American Geophysical Union. San Francisco, CA. (oral presentation)

**Oikawa, P.Y.**, D.A. Grantz, G.D. Jenerette. 2011. Variation in the temperature sensitivity of heterotrophic soil respiration in response to pulse water events and substrate limitation. American Geophysical Union. San Francisco, CA. (poster presentation)

**Oikawa, P.Y.**, D.A. Grantz, G.D. Jenerette. 2011. Investigating heterotrophic soil respiration in response to pulse water events. Department of Botany and Plant Sciences Seminar, University of California Riverside, CA. (invited oral presentation)

**Oikawa, P.Y.**, L. Li, M.P. Timko, J.E. Mak, M.T. Lerdau. 2010. Short term changes in methanol emission and pectin methylesterase activity are not directly affected by light in *Lycopersicon esculentum*. American Geophysical Union. San Francisco, CA. (poster presentation)

**Oikawa, P.Y.**, B.M. Giebel, L. da S.L. Sternberg, L. Li, M.P. Timko, P.K. Swart, D.D. Riemer, J.E. Mak, M.T. Lerdau. 2010. Investigating the source of mature leaf methanol emissions in tomato *Lycopersicon esculentum*. Gordon Research Conference on Biogenic Hydrocarbons and the Atmosphere. Les Diablerets, Switzerland. (invited oral presentation)

**Oikawa, P.Y.** 2009. Do trees pollute the atmosphere? Virginia Council for Graduate Studies’ Fourth Annual Graduate Research Forum. Richmond, VA. (invited poster presentation)

**Oikawa, P.Y.**, B.M. Giebel, P.K. Swart, D.D. Riemer, J.E. Mak, M.T. Lerdau. 2009. Environmental controls over methanol production, emission, and δ13C values from *Lycopersicon esculentum*. American Geophysical Union. San Francisco, CA. (poster presentation)

**Oikawa, P.Y.**, J.E. Mak, M.T. Lerdau. 2008. Seasonal variation of biogenic methanol fluxes from a southeastern deciduous forest. American Geophysical Union. San Francisco, CA. (poster presentation)

**Oikawa, P.Y.**, J.E. Mak, M.T. Lerdau. 2007. Herbivory as a driver for biogenic methanol flux from North American temperate tree species. American Geophysical Union. San Francisco, CA. (poster presentation)

**Oikawa, P.Y.**, J.E. Mak, M.T. Lerdau. 2007. Methanol emission response to simulated herbivory in big tooth aspen *Populus grandidentata* and white pine *Pinus strobus*. Gordon Research Conference on Plant-Herbivore Interactions. Ventura, CA. (poster presentation)

**SYNERGISTIC ACTIVITIES**

Co-chair of break-out session on partitioning CO2 fluxes at FLUXNET conference, Berkeley, 2017

Faculty Mentor, UC Berkeley’s Women in Science and Engineering Theme Program, 2017

Scientist participant in the American Geophysical Union’s Thriving Ecosystem Exchange (TEX) program with the City of Hayward, 2017

Mentor, PBS Student Reporting Lab, 2016

Member and invited speaker, Berkeley Climate Action Coalition (BCAC)

Keynote Speaker, Women in Science and Engineering Conference, UC Berkeley, March 2015

Co-Founder and President of Women in Mathematics and Sciences (WIMS) organization, University of California Riverside, 2012-2013

President of Women in Mathematics and Sciences (WIMS) organization, University of Virginia, 2009-2010

**ADDITIONAL TRAINING**

Association of College and University Educators (ACUE) online course in high impact teaching practices, Fall 2016

Autumn School on Data Assimilation in Biogeochemical Cycles, International Space Science Institute, Italy, 2014

4th Annual summer course in flux measurements and advanced modeling, University of Colorado Mountain Research Station, Boulder, Colorado, 2011

Marie Curie Integrated Land Ecosystem-Atmosphere Processes Study (iLEAPS), Hyytiälä forestry field station, Finland, 2007