*Curriculum Vitae*

**Patricia Oikawa**

*Department of Botany and Plant Sciences*

*University of California, Riverside*

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EDUCATION

**Ph. D. Biology, University of Virginia**, Charlottesville, Virginia

DISSERTATION: *Mechanisms regulating biogenic methanol production and emission in* Lycopersicon esculentum

ADVISOR: Manuel Lerdau

GRADUATION DATE: 22 May 2011

**B.S. Ecology, Evolution, and Marine Biology, University of California, Santa Barbara**, 2004

THESIS: *Jasmonic acid as a plant signaling compound in chaparral shrub* Baccharis pilularis *(coyote bush)*

ADVISOR: David Chapman

HONORS

USDA-NIFA Postdoctoral Fellowship 2013

NSF-IGERT Biosphere Atmosphere Research and Training 2010 Extended fellowship

NSF-IGERT Biosphere Atmosphere Research and Training 2006 Fellowship

Robert J. Huskey Travel 2010 Fellowship for presentation at the American Geophysical Union, Graduate School of Arts and Sciences, University of Virginia

Robert J. Huskey Travel 2010 Fellowship for presentation at the Gordon Research Conference on Biogenic Hydrocarbons and The Atmosphere, Graduate School of Arts and Sciences, University of Virginia

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

Summer Undergraduate Research 2004 Fellowship, College of Creative Studies, University of California, Santa Barbara

RESEARCH EXPERIENCE

**Postdoctoral Scholar**, Department of Environmental Science, Policy, and Management, University of California, Berkeley, October 2013 – present.

TOPIC: Investigating changes in greenhouse gas emissions resulting from land-use conversion in the Sacramento-San Joaquin River Delta.

SUPERVISORS: Dennis Baldocchi

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

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

SUPERVISORS: David Grantz and Darrel Jenerette

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

TOPIC: Investigating the mechanisms regulating phytogenic methanol production and emission

SUPERVISOR: Manuel Lerdau

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

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

SUPERVISOR: Manuel Lerdau

**Undergraduate Research Fellow,** Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, January 2004 – August 2004.

TOPIC: Jasmonic acid signaling in response to wounding in chaparral shrub *Baccharis pilularis* (coyote bush)

SUPERVISOR: David Chapman

**Research Assistant,** Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, June 2004 – August 2004.

TOPIC: Root communication in desert shrubs *Larrea tridentata* and *Ambrosia dumosa*

SUPERVISOR: Bruce Mahall

**Research Assistant,** Marine Sciences Institute, University of California, Santa Barbara, January 2004 – May 2004.

TOPIC: Invertebrate sampling and identification at the Carpenteria Salt Marsh, CA

SUPERVISOR: Andrew Brooks

**Undergraduate Student Intern**, Museum of Systematics and Ecology, University of California, Santa Barbara, January 2003 – May 2003.

TOPIC: Oak woodland and vernal pool restoration

 SUPERVISOR: Stephen Rothstein

**Undergraduate Researcher**, University of California Education Abroad Program, Monteverde, Costa Rica, August 2002 – Dec 2002.

TOPIC: Calling behavior and habitat-use of *Otus clarkii* (bare-shanked screech owl)

SUPERVISOR: Frank Joyce

TEACHING EXPERIENCE

**Laboratory Instructor**, Introduction to Biology, University of Virginia, Charlottesville, spring 2011

* Instructed 2 laboratory sections (50 students)

**Laboratory Instructor**, Introduction to Biology, University of Virginia, Charlottesville, spring 2010

* Instructed 2 laboratory sections (50 students)

**Invited Guest Speaker**, Environmental Science, Randolph-Macon College, Ashland, VA, fall 2008

* Lectured on air pollution, with an emphasis on tropospheric ozone

**Invited Guest Speaker**, Feminist Theory, University of Virginia, Charlottesville, fall 2007

* Led discussion on the role of women in science and technology, with a focus on epistemological issues of the gendered nature of science and scientific knowledge

**Invited Guest Speaker**, Ecosystem Ecology, State University of New York, Stony Brook, spring 2006

* Lectured on trace gas emissions from plants

PUBLICATIONS

**Oikawa, P.Y.**, M.T. Lerdau. Catabolism of volatile organic compounds influences plant survival. Trends in Plant Science, 2013

**Oikawa, P.Y.**, D.A. Grantz, A. Chatterjee, J.E. Eberwein, L.A. Allsman, G.D. Jenerette. Unifying soil respiration pulses, inhibition, and temperature hysteresis through dynamics of labile carbon and soil O2. (*accepted with revisions, Journal of Geophysical Research Biogeosciences*)

**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. 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, 2011, doi: 10.1111/j.1469-8137.2011.03770.x

**Oikawa, P.Y.**, L. Li, M.P. Timko, J.E. Mak, M.T. Lerdau. Short term changes in methanol emission and pectin methylesterase activity are not directly affected by light in *Lycopersicon esculentum*. Biogeosciences, 8, 1023-1030, 2011, doi:10.5194/bg-8-1023-2011

**Oikawa, P.Y.**, G.D. Jenerette, D.A. Grantz. Offsetting high water demands with high productivity: Sorghum as a biofuel crop in a high irradiance arid ecosystem. (*submitted, Global Change Biology Bioenergy*)

**Oikawa, P.Y.**, C. Wu, L. Li, M.P. Timko, J.E. Mak, M.T. Lerdau. Local and systemic methanol production and emission responses to wounding in wild-type and jasmonic acid insensitive (*jai1-1*) *Lycopersicon esculentum*. (*in preparation*)

PRESENTATIONS

**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. 6 December, 2012. (oral)

**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. 6 December, 2011. (poster)

**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. 3 October, 2011. (invited)

**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. 17 December, 2010. (poster)

**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. 25 May, 2010. (invited)

**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. 14 December, 2009. (poster)

**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. 17 December, 2008. (poster)

**Oikawa, P.Y.** 2009. Do trees pollute the atmosphere? Virginia Council for Graduate Studies’ Fourth Annual Graduate Research Forum in Richmond, VA. 10 February, 2008. (invited)

**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. 11 December, 2007. (poster)

**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. 19 February, 2007. (poster)

**Oikawa, P.Y.** 2002. The calling behavior and habitat-use of *Otus clarkii* in the Monteverde region of Costa Rica. UC Education Abroad Colloquium, Monteverde, Costa Rica.

SCIENTIFIC COURSES

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

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

PROFESSIONAL SERVICE

Organizer of the graduate student-run summit Challenges of climate change in the Great Lakes region, University of Michigan Biological Station, USA, 2007

COMMUNITY ENGAGEMENT & OUTREACH

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

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

Co-chair of the Graduate Student Association (GSA), Environmental Sciences Department, University of Virginia, 2008-2009

Member of Women in Mathematics and Sciences (WIMS) organization, University of Virginia, 2007 – 2011

PROFFESIONAL MEMBERSHIPS

American Geophysical Union, 2007 – Present

Association for Women in Science, 2007 – Present

SKILLS

*Statistical Analysis and Programming*

Linear models (ANOVA, regression); Programming experience in SAS, R, Matlab

*Analytical Chemistry*

GC-MS, GC-FID, GC-IRMS, PTR-MS, automated discrete analyzer, Nitric oxide monitor, N2O analyzer

*Plant Physiology etc.*

LI-COR LI-6400 portable gas exchange system; LI-8100 soil flux system; soil CO2 efflux by gradient method; pressure chamber instruments; eddy covariance; plant enzyme assay; reverse transcription PCR

*Other*

Herbivorous insect colony rearing

REFERENCES

**Darrel Jenerette**

Functional Landscape Ecologist

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University of California, Riverside

Riverside, CA 92521 USA

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**David Grantz**

Plant Physiologist

Department of Botany and Plant Sciences and Kearney Agricultural Center

University of California, Riverside

Riverside, CA 92521 USA

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**Manuel T. Lerdau**

Plant Physiological Ecologist

Department of Environmental Science and Department of Biology

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