

Abigail L. S. Swann

CONTACT INFORMATION Atmospheric Sciences Department and Biology Department
University of Washington
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RESEARCH INTERESTS Ecoclimate. Biosphere-climate feedbacks. Climate and ecosystem modeling. Carbon cycle.

EDUCATION *Ph.D.*, Earth and Planetary Science, University of California, Berkeley 2010
Thesis title: *Ecoclimate: Variations, Interactions, and Teleconnections*
Thesis Advisor: Inez Y. Fung
M.A., Earth and Environmental Sciences, Columbia University 2005
B.A., Earth and Planetary Science, University of California, Berkeley 2003

PROFESSIONAL EXPERIENCE **University of Washington**, Seattle, WA USA
Assistant Professor in the Department of Atmospheric Sciences and the Department of Biology September 2012 – ongoing
Harvard University, Cambridge, MA USA
Giorgio Ruffolo Post-doctoral Fellow in Sustainability Science at the Kennedy School of Government, Visiting Scientist in the Department of Organismic and Evolutionary Biology September 2010 – August 2012

GRANTS NSF Climate and Large Scale Dynamics & Ecosystems AGS-1553715: *CAREER: Ecosystem-driven accelerations and oscillations in the coupled Earth system.*
PI A.L.S Swann 2016 - 2021
\$654,040
NSF EF-1550641: *COLLABORATIVE RESEARCH: EAGER-NEON: Prototyping Assessment of Ecoclimate Teleconnections Affecting NEON Domains.*
UW PI A.L.S Swann, (Project PI D. Breshears, Co-PIs S. Saleska, D. Moore, PI S. Stark). 2015 - 2017
\$113,719 (to UW)
NSF Macrosystems EF-1340649: *Collaborative Research: Ecoclimate teleconnections between Amazonia and temperate North America: cross-region feedbacks among tree mortality, land use change, and the atmosphere.*
UW PI A.L.S Swann, (Project PI D. Breshears, Co-PI S. Saleska, PI S. Stark). 2014 - 2017
\$227,718 (to UW)
NSF Climate and Large Scale Dynamics & Ecosystems AGS-1321745: *Ecoclimate Teleconnections: effects of a shifting ITCZ.*
PI A.L.S Swann 2013 - 2016
\$372,287

HONORS AND AWARDS	NSF CAREER Faculty Early Career Development Award	2016-2020
	DISCCRS VI Scholar	2011
	Giorgio Ruffolo Post-doctoral Fellow in Sustainability Science at the Harvard Kennedy School	2010-2012
	NASA Earth Systems Science Fellow	2007
	IGERT Fellow in Applied Mathematics and Earth Sciences at Columbia University	2003-2005
	Graduated with Honors, University of California	2003
	All-America Sportsman of the year, Inter-Collegiate Sailing Association	2003
	PEER REVIEWED PUBLICATIONS	Lemordant, L.*, Cook, B., Scheff, J., Swann, A.L.S. , Gentine, P. , 2018. Vegetation physiology equally controls continental dryness response to climate change. (<i>accepted at Proceedings of the National Academy of Sciences</i>).
	Swann, A.L.S. and Koven, C.D., 2017. A direct estimate of the seasonal cycle of evapotranspiration over the Amazon Basin. <i>Journal of Hydrometeorology</i> , 18(8):2173-2185. doi:10.1175/JHM-D-17-0004.1.	
	Quetin, G.R.* , Swann, A.L.S. , 2017. Empirically derived sensitivity of vegetation to climate across the globe. <i>Journal of Climate</i> , 30(15):5835-5849. doi: 10.1175/JCLI-D-16-0829.1.	
	Stavros, N.E., Schimel, D., Pavlick, R., Serbin, S., Swann, A.L.S. , Duncanson, L, Fisher, J.B., Fassnacht, F., Ustin, S., Dubayah, R., Schweiger, A., Wennberg, P., 2017. International Space Station observations offer an opportunity to understand plant function. <i>Nature Ecology and Evolution</i> . 1:0194, 06. doi::10.1038/s41559-017-0194.	
	Villegas, J. C., Law, D. J., Stark, S. C., Minor, D. M., Breshears, D. D., Saleska, S. R. Swann, A. L. S. , Garcia, E. S. , Bella, E. M., Morton, J. M., Cobb, N. S., Barron-Gafford, G. A., Litvak, M. E., and Kolb, T. E., 2017. Prototype campaign assessment of disturbance-induced tree loss effects on surface properties for atmospheric modeling. <i>Ecosphere</i> , 8(3):2150. doi:10.1002/ecs2.1698.	
	Garcia, E.S. , Swann, A.L.S. , Villegas, J.C., Breshears, D.D., Law, D.J., Saleska, S.R., Stark, S.C., 2016. Ecoclimate teleconnections from forest loss in disparate regions: Identifying differential responses, mechanisms, and synergies in affected areas. <i>PLOS ONE</i> . 11(11):1-12. doi:10.1371/journal.pone.0165042.	
	Swann, A.L.S. , Hoffman, F., Koven, C.D., Randerson, J.R., 2016. Plant responses to increasing CO ₂ reduce estimates of climate impacts on drought severity. <i>Proceedings of the National Academy of Science</i> , doi:10.1073/pnas.1604581113.	
	Laguë, M.M.* , Swann, A.L.S. , 2016. Progressive midlatitude afforestation: Impacts on clouds, global energy transport, and precipitation. <i>Journal of Climate</i> , 29(15):55615573, doi:10.1175/JCLI-D-15-0748.1.	
	Stark, S.C., Breshears, D.D., Garcia, E. , Law D.J., Minor, D., Saleska, S.R., Swann, A.L.S. , Villegas, J.C., Arago, L.E.O.C., Bella, E.M., Borma, L.S., Cobb, N.S., Litvak, M.E., Magnuson, W., Morton, J.M., Redmond, M.D., 2015. Toward accounting for ecoclimate teleconnections: intra- and inter-continental consequences of altered energy balance after vegetation change. <i>Landscape Ecology</i> , 31 (1), 181-194, doi: 10.1007/s10980-015-0282-5.	

* Graduate Student Author, **Bold type**: member of Swann research group

PEER REVIEWED
PUBLICATIONS
(CONT.)

A. L. S. Swann, M. Longo*, R. G. Knox*, E. Lee, and P. R. Moorcroft, 2015. Future deforestation in the Amazon and consequences for South American climate. *Agricultural and Forest Meteorology*, 214215:1224, 12, doi: 10.1016/j.agrformet.2015.07.006.

Knox, R.G. *, Longo, M.L. *, **Swann, A.L.S.**, Zhang, K. and Levine, N.M., Moorcroft, P.R., Bras, R.L., 2015. Hydrometeorological Effects of Historical Land-Conversion in an Ecosystem-Atmosphere Model of Northern South America, *Hydrology and Earth System Sciences* 19(1):241273, doi:10.5194/hess-19-241-2015.

Swann, A.L.S, Fung, I.Y., Liu, Y. *, Chiang, J.C.H., 2014. Remote vegetation feedbacks and the mid-Holocene Green Sahara, *Journal of Climate* 27(13) 48574870, doi: 10.1175/JCLI-D-13-00690.1

Swann, A. L., Fung, I. Y., Chiang, J. C. H., 2012. Mid-latitude afforestation shifts general circulation and tropical precipitation, *Proceedings of the National Academy of Science*, doi:10.1073/pnas.1116706108.

Lee, J. -E., and **Swann, A. L.**, 2010. "Evaluation of using the "amount effect" to interpret speleothem data: Asian monsoon study, *IOP Conference Series: Earth and Environmental Science*, 9, 012023, doi:10.1088/1755-1315/9/9/012023.

Swann, A. L., Fung, I. Y., Levis, S., Bonan, G., Doney, S. 2010. Arctic vegetation changes induce high-latitude warming through the greenhouse effect, *Proceedings of the National Academy of Science*, doi:10.1073/pnas.0913846107.

Lee, J., Pierrehumbert, R., **Swann, A.**, Lintner, B. R., 2009. Sensitivity of stable water isotopic values to convective parameterization schemes, *Geophysical Research Letters*, 36, L23801, doi:10.1029/2009GL040880.

Swann, A. L., Sobel, A. H., Yuter, S. E., Kiladis, G. N., 2006. Observed radar reflectivity in convectively coupled Kelvin and mixed Rossby-gravity waves, *Geophysical Research Letters*, 33, L10804, doi:10.1029/2006GL025979.

PUBLICATIONS IN
REVIEW

Kovenock, M.*, **Swann, A.L.S.**, Leaf trait acclimation amplifies simulated climate warming in response to elevated carbon dioxide. (*in review at Global Biogeochemical Cycles*).

Kooperman, G.J., Chen, Y., Hoffman, F.M., Koven, C.D., Lindsay, K., Pritchard, M.S., **Swann, A.L.S.**, and Randerson, J.T. Forest response to rising CO₂ drives zonally asymmetric rainfall change over tropical continents. (*provisionally accepted at Nature Climate Change*).

Kooperman, G.J., Hoffman, F.M., Koven, C.D., Lindsay, K, **Swann, A.L.S.**, and Randerson, J.T. Future flooding risk in the tropics as measured by changes in extreme runoff intensity is strongly influenced by plant-physiological responses to rising CO₂. (*in review at Geophysical Research Letters*).

Quetin, G.R.*, **Swann, A.L.S.**, Ecological-Climate Interactions in CMIP5 Carbon Cycle Models (*in revision at Journal of Climate*).

Swann, A.L.S., Lagu, M.M.*, Garcia, E.S., Breshears, D.D., Field, J.P., Moore, D.J.P., Saleska, S.R., Stark, S.C., Villegas, J.C., Law, D.J., and Minor, D.M. Local tree die-off impacts vegetation productivity across the US regardless of location via continental-scale ecoclimate teleconnections. (*in revision at Environmental Research Letters*)

* Graduate Student Author, **Bold type**: member of Swann research group

OTHER
PUBLICATIONS

Fung, I. and **Swann, A.**, 2011. Climatic consequences of afforestation. *In AIP Conf. Proc*, volume 1401, pages 211-219.

STUDENTS AND
POSTDOCS
SUPERVISED

Graduate Students: Chair of Supervisory Committee

Gregory Quetin, Atmospheric Sciences PhD 2017
Dissertation topic: Sensitivity of vegetation to climate on interannual timescales
Awards:
• Program on Climate Change Fellowship, 2012-2013

Marlies Kovenock, Biology expected PhD 2018
Dissertation topic: Climate response to plant trait acclimation
Awards:
• Wingfield/Ramenofksy Award for Environmental Biology, Biology Department, 2016
• Sargent Award, Biology Department, 2016
• Program on Climate Change Fellowship, 2014-2015

Marysa Laguë, Atmospheric Sciences expected PhD 2019
Dissertation topic: Atmospheric sensitivity to land surface properties
Awards:
• Selected as one of the Husky 100, 2017
• NSERC (Canadian) Postgraduate Scholarship-Doctoral Program, 2016-2019
• NSERC (Canadian) Graduate Fellowship, 2013-2014

Jennifer Hsiao, Biology expected PhD 2020
Dissertation topic: The role of humidity in primary production under a changing climate

Postdocs Supervised

Elizabeth Garcia 2014-2017
Topic: Climate impacts of forest die-off.
Current Position: Watershed Manager at Seattle Public Utilities.
Invited Presentations:
• American Geophysical Union Fall Meeting, San Francisco, CA, 2015
• Ecological Society of America Annual Meeting, Portland, OR, 2017

SERVICE:
DEPARTMENTAL

Member Biology Department Graduate and Postdoc Program Committee 2017-ongoing
Co-chair Biology Department Seminar Committee 2015-2017
Member Atmospheric Sciences Committee on Graduate Studies 2015
Presentation Biology Advancement Dinner 2015
Member Biology Department Seminar Committee 2014-2015

SERVICE: COLLEGE & UNIVERSITY	<i>Member</i> Executive Council for the Population Health Initiative	2017-ongoing
	<i>Member</i> Search Committee for Program on Climate Change Director	2017
	<i>Member</i> Ad-Hoc committee on Family Friendly Policies, College of the Environment	2015-ongoing
	<i>Member</i> Science Communication Advisory Group, College of the Environment	2015-ongoing
	<i>Member</i> College of the Environment <i>Future of Ice</i> Search Committee for 2 interdisciplinary faculty positions	2014
	<i>Participant</i> UW Faculty Field Tour, extending UW's reach beyond Seattle	2013
	<i>Reviewer</i> Royalty Research Fund Proposals, UW	2012, 2013

SERVICE:
PROFESSIONAL

Scientific Community

Co-chair Biogeochemistry Working Group, 2017-present
Community Earth System Model, National Center for Atmospheric Research

Societies

American Geophysical Union 2003-present
American Meteorological Society 2005, 2016-present
Ecological Society of America 2014-present
Earth Science Women's Network 2003-present

Conference Organization

Organizer, Program on Climate Change Summer Institute 2015

I organized a three day symposium on terrestrial ecosystems, land surface processes, and climate which brought in five speakers from across the country together with speakers and panelists from four departments at UW .

Convener, Session at American Geophysical Union Fall meeting 2013, 2014, 2015, 2016

Trainer & Organizer, ED+ Training Workshop 2013

Grant Review

Ad-hoc review National Science Foundation 2011, 2012, 2013, 2014, 2015, 2017

Panelist, National Science Foundation 2015

Journal Review

Nature Ecology and Evolution 2017

Nature Communications 2017

Proceedings of the National Academy of Science 2011, 2015, 2016, 2017

Science 2017

Journal of Climate 2012, 2017

Agriculture and Forest Meteorology 2017

Nature 2016

Nature Scientific Reports 2016

Nature Climate Change 2012, 2014, 2016

Geophysical Research Letters 2013, 2015, 2016

Journal of Advances in Modeling Earth Systems 2016

Journal of Geophysical Research - Biogeosciences	2011, 2012, 2013, 2015, 2016
Environmental Research Letters	2015
Geoscientific Model Development	2015
Hydrology	2015
Climate Dynamics	2011, 2015
Global Change Biology	2013, 2014
Climate of the Past	2014
Annales Geophysicae	2014

INVITED
PRESENTATIONS

2018

Invited Talk Lamont Doherty Earth Observatory, Columbia University, New York, NY

Invited Talk Pacific Northwest National Laboratory, Richland, WA

2017

Invited Talk Department of Earth and Environmental Sciences, Stanford University, Palo Alto, CA

Invited Talk Department of Earth and Planetary Sciences, University of New Mexico, Albuquerque, NM

Invited Talk Santa Fe Climate Conference, Santa Fe, NM

2016

Declined Invited Speaking Invitation Keynote talk at the AGU Chapman Conference on “Emerging Issues in Tropical Ecohydrology”, Cuenca, Ecuador

Declined Invited Speaking Invitation American Quaternary Association Biennial Meeting, Santa Fe, NM

2015

Invited Talks (2) American Geophysical Union Fall Meeting, San Francisco, CA

Invited Talk Department of Earth and Planetary Science, Harvard University, Cambridge, MA

Invited Talk Carnegie Institution for Science, Department of of Global Ecology, Stanford University, Palo Alto, CA

Invited Talk Monsoons and ITCZ workshop, Columbia University, New York, NY

Invited Talk Department of Atmospheric and Environmental Sciences, SUNY Albany, Albany, NY

Invited Talk Ecological Society of America Annual Meeting, Baltimore, MD

Invited Talk Macrosystems Biology Annual Meeting, National Science Foundation, Arlington, VA

Invited Talk Evergreen State College, Olympia, WA

Invited Participant Organization for Tropical Studies Emerging Frontiers in Tropical Science Working Group on Vegetation-precipitation coupling in the Tropics, La Selva, Costa Rica

2014

Invited Talks (2) American Geophysical Union Fall Meeting, San Francisco, CA

Invited Talk Earth System Science Department Seminar, University of California, Irvine, CA

Invited Talk Atmospheric Science Department Seminar, Colorado State University, Fort Collins, CO

2013

Invited Talk Western Roundtable Series at the Center for Sustainability and the Global Environment, University of Wisconsin, Madison WI

Invited Talk Biology Department Seminar, University of Washington, Seattle, WA

Invited Talk Department of Ecology and Evolutionary Biology Department Seminar, University of Arizona, Tucson, AZ

CONTRIBUTED
PRESENTATIONS
TO SCHOLARLY
AUDIENCES

- 2017**
Talk Ecological Society of America Meeting, Portland, OR
Talk Community Earth System Model Annual Workshop, Boulder, CO
- 2014**
Talk Community Land Model Working Group Meeting, Boulder, CO
- 2013**
Talk ED+ Working Group Meeting, Berkeley, CA
Talk American Geophysical Union Fall Meeting, San Francisco, CA
Talk Community Land Model Working Group Meeting, Boulder, CO

GUEST LECTURES
IN COURSES

- 2017**
 FLUXCOURSE (organized by University of Arizona, in Nederland, CO)
 Conservation Biology (*BIOL 476*)
 Exploring Atmospheric Science (*ATMS 220*)
- 2015**
 Carbon Seminar, School of Environmental and Forest Sciences
 Program on Climate Change Special Seminar Series
 Exploring Atmospheric Science (*ATMS 220*)
 FLUXCOURSE (organized by University of Arizona, in Nederland, CO)
 Climate Modeling (*ATMS/OCEAN/ESS 559*)
 Topics in Advanced Ecology (*BIOL/SEFS/FISH 567*)
- 2014**
 Exploring Atmospheric Science (*ATMS 220*)
- 2013**
 Bioclimatology (*AOS 520* at University of Wisconsin, Madison)
 Exploring Atmospheric Science (*ATMS 220*)
 Topics in Advanced Ecology (*BIOL/SEFS/FISH 567*)

OUTREACH &
PRESENTATIONS
TO THE PUBLIC

- Public Lectures**
- Bellettini Home, Bellevue, WA 2017
- Rotary Club of South Lake Union, Seattle, WA 2017
- Outreach**
- “Ask a Climate Scientist” booth, Ballard Sustainability Festival 2017
- Visit to Seattle Waldorf 8th grade class to talk about climate change 2017
- Kindergarten goes to College, visit with Bryant Elementary
Kindergarten class 2015, 2017
- Organized sessions for the Girls in Science program
for middle school girls at the Burke Museum 2015, 2016, 2017
- Panelist for Public Engagement Workshop for Graduate and
Professional Students at UW 2016
- SAMlink seminar for undecided undergraduates 2015
- Paws on Science day at the Pacific Science Center 2014
- Math Day at UW 2014
- Think Evolution Summer Institute (for high school teachers) 2013
- Communicating Climate Science Education Working Group,
Lawrence Hall of Science, Berkeley, CA 2012

Press Releases

University of Washington (*Swann et al. 2014, Swann et al. 2016, Garcia et al. 2016*)

National Science Foundation (*Garcia et al. 2016*)

Selected Press Coverage of Research

Scientific American 60-Second Science Podcast ([link](#)) (*Garcia et al. 2016*)

Vocativ ([link](#)) (*Garcia et al. 2016*)

Huffington Post ([link](#)) (*Garcia et al. 2016*)

The Oregonian ([link](#)) (*Garcia et al. 2016*)

Mongabay ([link](#)) (*Garcia et al. 2016*)

El Mundo (2nd largest newspaper in Spain) ([link](#)) (*Swann et al. 2016*)

KOMO Radio News (*Swann et al. 2016*)

Selected Media Appearances

EOS (link)	December 2017
EOS (link)	October 2017
Nature News (link)	August 2017
KUOW Public Radio (link)	April 2017
Mongabay (link)	November 2016
USA Today (link)	October 2016
Climate Central (link)	August 2016
Inside Climate News (link)	June 2016
New York Times (link)	October 2015
Mongabay (link)	June 2015
Climate Central (link)	December 2014
Climate Central (link)	October 2014

CONFERENCES,
SYMPOSIA, AND
WORKSHOPS
ATTENDED

Community Land Model Working Group Meeting, February 5-7, 2018, Boulder, CO USA.

American Geophysical Union Fall Meeting, December 11-15, 2015, New Orleans, LA USA.

Community Earth System Model Workshop, June 19-22, 2017, Boulder, CO USA.

Santa Fe Climate Conference, February 2-7, 2017, Santa Fe, NM USA.

American Geophysical Union Fall Meeting, December 14-18, 2015, San Francisco, CA USA.

Keck Institute for Space Studies Workshop: Exploring New Multi-Instrument Approaches to Observing Terrestrial Ecosystems and the Carbon Cycle from Space, Oct. 5-9, 2015, Pasadena, CA USA.

Monsoons and the Intertropical Convergence Zone, Sept. 15-18, 2015, New York, NY USA.

Organization for Tropical Studies, Emerging Frontiers in Tropical Science Working Group on Vegetation-precipitation coupling in the Tropics, March 4-7, 2015, La Selva Biological Station, Costa Rica.

Communicating Climate Science Workshop, Feb 23-24, 2015, Berkeley, CA USA.

American Geophysical Union Fall Meeting, December 15-19, 2014, San Francisco, CA USA.

Megafauna and Ecosystem Function Meeting, March 18-20, 2014, Oxford, UK.

National Center for Atmospheric Research Land Model Working Group Meeting, Feb 24-26, 2014, Boulder, CO USA.

ED+ Working Group Meeting, December 16-18, 2013, Berkeley, CA USA.

American Geophysical Union Fall Meeting, December 9-13, 2013, San Francisco, CA USA.

Keck Institute for Space Studies Workshop: Airships: A New Horizon for Science, April 30-May 3, 2013, Pasadena, CA USA.

National Center for Atmospheric Research Land Model Working Group Meeting, Feb 28-March 2, 2013, Boulder, CO USA.

Communicating Climate Change Educational Working Group, December 7-8, 2012, Berkeley, CA USA.

American Geophysical Union Fall Meeting, December 4-6, 2012, San Francisco, CA USA.

NOAA Summer Institute, July 8-12, 2012, Steamboat Springs, CO USA.

National Center for Atmospheric Research Land Model Working Group Meeting, Feb 21-22, 2012, Boulder, CO USA.