

## Leander D.L. Anderegg

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### RESEARCH INTERESTS:

Ecological consequences of climate change; biotic and abiotic determinants of species ranges; plant ecophysiology and biogeography, ecotypic variation and phenotypic plasticity

### EDUCATION:

**University of Washington** - PhD candidate, Department of Biology, 2012 – present  
(GPA 4.0/4.0) Advisor: Dr. Janneke Hille Ris Lambers

**Stanford University** – BA in Human Biology with Honors and Distinction, 2007 – 2011  
(GPA 4.05/4.0) Honors Thesis advisor: Dr. Joseph Berry (Carnegie Institute for Science)

### PUBLICATIONS:

Anderegg WRL, **Anderegg LDL**, Berry JA, Field CB. (2014) Whole-tree hydraulic conductance and assimilation during drought-induced aspen forest die-off. *Oecologia*. Published online Jan 9, 2014  
doi:10.1007/s00442-013-2875-5

**Anderegg LDL\***, Anderegg WRL\*, Abatzoglou J, Hausladen AM, Berry JA (2013) Drought characteristics' role in widespread aspen forest mortality across Colorado, USA. **Global Change Biology** 19:1526–1537. doi: 10.1111/gcb.12146. \* these authors contributed equally

**Anderegg LDL**, Anderegg WRL, Berry JA. (2013) Not all droughts are created equal: translating meteorological drought into woody plant mortality. **Tree physiology** 33(7): 672-683.  
doi:10.1093/treephys/tpt044.

Anderegg WRL, Kane JM, **Anderegg LDL**. (2013) Consequences of widespread tree mortality triggered by drought and temperature stress. *Nature Climate Change*. 3, 30-37. doi:10.1038/nclimate1635

Anderegg WRL, Plavcova L, **Anderegg LDL**, Hacke U, Berry JA. (2013) Drought's legacy: Hydraulic deterioration underlies widespread aspen forest die-off and portends increased future risk. *Global Change Biology*. 19, 1188-1196. doi: 10.1111/gcb.12100

Anderegg WRL, **Anderegg LDL**. (2013) Carbon and hydraulic changes in experimental drought-induced mortality of two contrasting conifer species. *Tree Physiology*. 33, 252-260. doi:10.1093/treephys/tpt016.

Anderegg WRL, Berry JA, Smith DD, Sperry JS, **Anderegg LDL**, Field CB. (2012) The roles of hydraulic and carbon stress in a wide spread climate-induced forest die-off. *Proceedings of the National Academy of Science US*. 109, 233-237. doi:10.1073/pnas.1107891109

Anderegg WRL, **Anderegg LDL**, Sherman C, Karpe DS. (2012) Effects of widespread drought-induced aspen mortality on understory plants. *Conservation Biology*. 26(7), 1082-1090. doi: 10.1111/j.1523-1739.2012.01913.x

*In review/preparation*

HilleRisLambers J, Breckheimer I, Burns K, Ettinger A, Franklin J, Freund J, Ford KR, Kroiss SJ, **Anderegg LDL**. Implications of climate change for turnover in forest composition: a case study from Mt. Rainier National Park. *In preparation*.

**Anderegg LDL**, Anderegg WRL, Berry JA. Do dying aspen trees change functional rooting depth? *In preparation*.

## **GRANTS & AWARDS**

NSF Graduate Research Opportunities Worldwide (GROW - \$5,000 plus stipend)	2014
Dean's Visualization Prize: awarded to two top data visualization portfolios from "Beautiful Graphics in R" seminar. Figure retweeted by Edward Tufte	2014
Charles Redd Center for Western Studies, Brigham Young University (\$1500)	2014
Edwards Award, UW Department of Biology (\$1250)	2014
American Alpine Club Research Grant (\$800)	2014
Sigma Xi Research Grant in Aid (\$600)	2014
Wingfield/Ramenofsky Research Award, UW Department of Biology: (\$700)	2013
National Science Foundation (NSF) Graduate Research Fellowship	2012
Achievement Rewards for College Scientists (ARCS) Foundation Fellowship: (\$17,500)	2012
David M. Kennedy Honors Thesis Prize: awarded to top four honors theses at Stanford University: top honors thesis in the School of Humanities and Sciences	2011
Deans' Award for Academic Accomplishment: awarded to 10 Stanford undergraduates for academic, research, or intellectual accomplishments	2011
Firestone Medal for Excellence in Undergraduate Achievement: awarded to ~top 10% of Stanford undergraduate honors theses in social science, science and engineering	2011
J.E. Wallace Sterling Award for Scholastic Achievement: awarded to top 25 Stanford undergraduate GPAs in School of Humanities and Sciences	2011
Joshua Lederberg Award for Academic Excellence in Human Biology	2011
Phi Beta Kappa: inducted as a junior	2010
President's award for academic excellence	2008

## **PRESENTATIONS**

### *Invited:*

Anderegg, LDL, Anderegg, WRL, Berry, JA, Field, CB. (Nov 2013) From Drought to Death: The ecohydrology and physiology of sudden aspen decline. Invited presentation at the Annual California Forest Pest Council Meeting, Sacramento, CA.

### *Contributed:*

Burns, KM, HilleRisLambers, J, Ettinger, AK, Ford, KR, Wilson, A, Anderegg, LDL. (Aug 2013) Impact of climate and biotic interactions on growth of *Abies lasiocarpa* at altitudinal range limits. Contributed poster, ESA Annual Meeting. Minneapolis, MN

Anderegg, LDL, Anderegg, WRL, Abatzoglou, AM, Berry, JA. (Nov. 2012). Seeing the forest through the trees: Linking tree ecohydrology to widespread forest mortality. University of Washington Biology Graduate School Symposium. Seattle, WA

Anderegg, WRL, Anderegg, LDL, Abatzoglou, AM, Berry, JA. (Dec 2011). Drought characteristics explain patterns in widespread forest mortality across the western US. Contributed poster. AGU Fall Meeting. San Francisco, CA

Anderegg, LDL. (Aug. 2011). Linking ecohydrology, drought seasonality, and forest mortality. Contributed poster. ESA Annual Meeting. Austin, TX

## **TEACHING & MENTORING**

Teaching Assistant, University of Washington, BIOL 200 Introductory Biology Winter 2013

Teaching Assistant, University of Washington, BIOL 433 Marine Ecology Spring 2013

Undergraduate mentor: Alec Baird, University of Washington, 2014-present  
*Climatic constraints drive clinal variation in *Populus tremuloides* leaf morphology and venation*

Undergraduate mentor: Deneiges Murrey, University of Washington, 2014-present  
*Within-species variation in resistance to freeze-thaw embolism in a montane gymnosperm and angiosperm*  
research funded by Frye-Hotson-Rigg Award, UW Biology

Undergraduate mentor: June Landenburger, University of Washington, 2013-2014  
*Ecotypic variation and plasticity in seedling morphology and physiology of two conifers*  
research funded by Mary Gates Research Scholarship

Undergraduate mentor: supervised 15 undergraduate lab assistants to date 2013-present

Undergraduate mentor: Kimberly Pham, Stanford University, 2011  
*The aspens are coming: aspens invade meadows faster at high elevations than low elevations*  
Woods Institute Mentoring Undergraduates in Interdisciplinary Research (MUIR)  
summer project

## **SERVICE & OUTREACH**

Peer Reviewer: Global Change Biology, PLOS One, BioScience, Ecology Letters

Faculty meeting graduate student representative (2013-present)

Botanical Greenhouse Docent, University of Washington (2013-present)

Developed ½ day science module for 4<sup>th</sup>-5<sup>th</sup> grade titled “Trees: Nature’s time machine” (2014)

### **Public Lectures**

Ecological consequences of climate change. (Apr. 2012) Presentation to AP Env. Sci. class at Corbett High School, Corbett, OR.

Where have all the aspens gone? Drought and sudden aspen decline in the San Juan National Forest. (Sept. 2009) Presentation at the Cortez Cultural Center, Cortez, CO.

Oh the places you'll go: Why you should study science in college. (Sept. 2009) Presentation to honors students at Montezuma-Cortez High School, Cortez, CO.

### **Research In the News**

Paper cited in xkcd webcomic (Anderegg & Anderegg 2013 in <http://what-if.xkcd.com/103/>)

Tree core data visualization figure retweeted by Edward Tufte (@EdwardTufte, 3/24/14)

New Scientist: “Dying aspen trees sound alarm for world’s forests”

Huffington Post: “Climate change stress killing forests, and why it matters”

United Press International: “Drought blamed for Colorado tree die-off”

Summit County Citizen Voice: “Colorado aspen woes linked to extreme summer heat”

RedOrbit: “Majestic Colorado aspens devastated by hotter temperatures”

Durango Herald: “Shrubs winning race”