

# Daniel E. Stanton

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## 1 CURRENT AND PAST POSITIONS:

- **Assistant Professor, Tenure-Track** (August 2019- present)  
Department of Ecology, Evolution and Behavior  
University of Minnesota-Twin Cities
- **Interim Curator for Lichenized Fungi and Bryophytes** (July 2017- present)  
Bell Herbarium (MIN)  
University of Minnesota-Twin Cities
- Research Assistant Professor (July 2017- July 2019)  
Department of Ecology, Evolution and Behavior  
University of Minnesota-Twin Cities
- Research Associate (August 2014- June 2017)  
Department of Ecology, Evolution and Behavior  
University of Minnesota-Twin Cities
- Postdoctoral fellow (May 2016- September 2016): May (Georgiana) Laboratory  
Department of Ecology, Evolution and Behavior  
University of Minnesota-Twin Cities
- Postdoctoral Fellow (November 2011-July 2014): Ball (Marilyn) Laboratory  
Division of Plant Sciences, Research School of Biology  
The Australian National University

## 2 EDUCATION:

- Princeton University. (September 2006-September 2011): Ph.D. in Ecology and Evolutionary Biology. Advisors: Lars O. Hedin and Henry S. Horn. Thesis Title: Filter-Feeding Forests: Epiphytes and Fog in the Self-Organization and Function of Ecosystems.
- University of Wisconsin-Madison (September 2002-May 2006)  
Bachelor of Science in Botany and Bachelor of Science in Biochemistry. Graduation with Distinction: May 2006.

## 3 RESEARCH INTERESTS

- Functional traits of bryophytes and lichens
- Effects of fog on ecophysiology and ecosystem processes
- Epiphyte ecology and the effects of epiphytes, particularly non-vascular plants and lichens, on host plant ecology and ecosystem processes
- Role of cryptogams (bryophytes and lichens) in ecosystem ecology

## 4 AWARDS/FUNDING:

- Legislative-Citizen Commission on Minnesota Resources. May 2018. Assessing ecosystem services provided by lichens and mosses. Sole PI. (\$213,000)
- National Science Foundation-Hydrological Sciences. September 2017. A "Collaborative Proposal: Determining the eco-hydrogeologic response of tropical glacierized watersheds to climate change: An integrated data-model approach" Lead PI: Gene-Hua Crystal Ng (University of Minnesota). (\$699,797).
- National Geographic Society-Council on Research and Exploration 2015: Form and Function in a Fog-Sustained Desert Lichen Oasis (\$ 15,600).
- National Science Foundation Doctoral Dissertation Improvement Grant 2009 (\$ 14,124).
- Princeton Program in Latin American Studies 2009 (\$ 500).
- Princeton Program in Latin American Studies 2008 (\$ 2,200).
- Princeton University: President's Award 2006-2010 (\$ 3,000 p.a.).

### 4.1 External collaborations

- United Kingdom NERC-Science of the Environment Standard Grant. How did evolution of plants, microbial symbionts and terrestrial nutrient cycles change Earth's long-term climate. Lead PI: B. Mills (U Leeds). *Project partner: "Stanton will provide guidance on asymbiotic fixation and fixation in non-vascular plants which will feed into our model development"*

## 5 PUBLICATIONS:

### 5.1 Published Peer-Reviewed

- Ure JD and **DE Stanton**. 2019. Co-Dominant anatomically disparate lichens converge in hydrological functional traits. *The Bryologist*. In Press.
- **Stanton DE** S Batterman, J. Von Fischer and LO Hedin. 2019. Rapid nitrogen fixation by canopy microbiome in tropical forest determined by both phosphorus and molybdenum. *Ecology*. e02795
- Vargas Castillo R, **Stanton DE** and P Nelson. 2017. Aportes al conocimiento de la biota liquínica del oasis de neblina de Alto Patache, Desierto de Atacama [Contributions to the lichen biota of the Atacama desert fog-oasis of Alto Patache]. *Revista de Geografía Norte Grande*
- PTJ Johnson, **DE Stanton**, KJ Forshay, DM Calhoun. 2017. Vertically challenged: How disease suppresses *Daphnia* vertical migration behavior. *Limnology and Oceanography*.
- Deane-Coe, K.K. and **D Stanton**. 2017. Functional ecology of cryptogams: Scaling from bryophyte, lichen, and soil crust traits to ecosystem processes. *New Phytologist* 213(3)
- **Stanton DE** and C Reeb. 2016. Morphogeometric approaches to non-vascular plants. *Frontiers in Plant Science* 7 doi: 10.3389/fpls.2016.00916.
- **Stanton DE**. 2015. Small scale fog-gradients change epiphytic lichen shape and distribution. *The Bryologist* 118: 241-244.
- Rolland V, Bergstrom DM, Lenne T, Bryant G, Chen H, Wolfe J, Holbrook NM, **Stanton DE** and MC Ball. 2015. Easy come, easy go: capillary forces enable rapid refilling of embolized primary xylem vessels. *Plant Physiology* 168: 1636-1647.
- Nguyen HT, **Stanton DE**, Schmitz N, Farquhar GD and MC Ball. 2015. Growth responses of the mangrove, *Avicennia marina*, to salinity: development and function of shoot hydraulic systems require saline conditions. *Annals of Botany* mc357.
- **Stanton DE**, J Huallpa, L. Villegas, F. Villasante, JA Armesto, LO Hedin and HS Horn. 2014. Epiphytes Improve Host Plant Water Use by Microenvironment Modification. *Functional Ecology*. 28: 1274-1283 **Editor's choice in Science (344: p1129)**
- **Stanton DE**, JA Armesto and LO Hedin. 2014. Ecosystem properties self-organize in response to a directional fog-vegetation interaction. *Ecology* 95(5) 1203-1212.

- **Stanton DE**, Merlin M, Bryant G., and M. C. Ball. 2014. Water redistribution determines photosynthetic responses to warming and drying in two polar mosses. *Functional Plant Biology*. 41: 178-186.
- **Stanton DE**, B. Salgado, LO Hedin, and JA Armesto. 2013. Forest patch symmetry depends on direction of resource delivery. *Ecosphere*. 4:art65.
- **Stanton DE** and HS Horn. 2013. Epiphytes as "filter-drinkers": life form changes across a fog gradient. *The Bryologist*. 116(1) 34-42. <http://dx.doi.org/10.1639/0007-2745-116.1.034>
- Shaw AK and **DE Stanton**. 2012. Leaks in the pipeline: separating demographic inertia from ongoing gender differences in academia. *Proceedings of the Royal Society B* 279 (1743): 3736-3741. doi:10.1098/rspb.2012.0822.
- Johnson, PTJ., Longcore JE, **Stanton DE**, Carnegie RB, Shields JD and E Preu. 2006. Chytrid infections of *Daphnia pulex*: development, ecology, pathology and phylogeny of *Polycaryum laeve* Stempel 1903. *Freshwater Biology* 51: 634-648.
- Johnson, PTJ., **Stanton DE**, Preu ER, Forshay KJ and SR Carpenter. 2006. Dining on Disease: How Interactions Between Infection and Environment Affect Predation Risk. *Ecology* 87(8): 1973-80.

## 5.2 In Review and in preparation, available on request

- Cifuentes C, **DE Stanton** and J Armesto. Loss of invertebrate diversity and soil properties in pine monocultures compared to native forests in central Chile. In review at Biodiversity and Conservation. *Student paper from Master's student co-supervised with J. Armesto*
- Godsoe W, K Eisen and **DE Stanton**. Partitions and the fundamental mechanisms of community ecology. In review at The American Naturalist. Preprint available at: <http://biorxiv.org/cgi/content/short/527028v1>
- **Stanton DE** and A Glauser. Lichens. Contributions to multiple chapters in *Fungi for Land: A Guide for Land Managers*. Eds. R. Hart and S. McMullin-Fisher. <https://www.funfungiecolgy.com/fungi-for-land/>. Final draft submitted for review.
- Swanson, L., **DE Stanton** and G. May. An endophyte host generalist with varied effects: *Daldinia loculata* and three moss hosts. *In Preparation*
- **Stanton DE**, P Nelson and R Vargas Castillo. Gone with the wind: asynchronous convergent evolution of a vagrant habit in desert lichens. *In Preparation*
- **Stanton DE**, V Rolland, D Bergstrom and MC Ball. Shoot architecture and functional traits of sub-antarctic bryophytes. *In Preparation*

## 5.3 Book Reviews, Commentaries and Other Non-Peer Review Publications

- JH Dickson, K Oeggl, **D Stanton**. ?Forest Moss?: no part of the European Neanderthal diet. 2017. *Antiquity*. 91 (359).
- Cruz-Maysonet S, **Stanton DE**, Armesto JJ and G Avila-Sakar. 2016. A new chapter is born on the Centennial: An introduction to the Latin American Chapter of the Ecological Society of America. *Bulletin of the Ecological Society of America*
- Shaw AK, **Stanton DE**, Supp SR, Budden A, Eby S, Reynolds PL, Salguero-Gomez R, Scholes DR and NB Zimmerman. 2015. Ecology Postdocs in Academia: Primary Concerns and Possible Solutions. *Bulletin of the Ecological Society of America* 96 (1): 140-152.
- Scholes DR, **Stanton DE** and SR Supp. 2014. ESA's Early Career Ecologist Section: Supporting the Professional Development of Early Career Ecologists in All Career Trajectories. *Bulletin of the Ecological Society of America* 95 (4): 435-438.
- **Stanton DE**. 2014 Book Review: *Methods in Forest Canopy Research* by Margaret D. Lowman, Timothy Schowalter and Jerry Franklin. University of California Press 2012. *Austral Ecology* 39 (4). DOI:10.1111/aec.12123
- **Stanton DE**. 2012 Book Review: *Bryophyte Ecology and Climate Change* Zoltan Tuba, Nancy G. Slack and Lloyd R. Stark. Cambridge University Press, Cambridge, 2011. *Austral Ecology* 37

## 6 PRESENTATIONS:

- February 2017. Invited Seminar: Minnesota State University at Mankato.
- October 2015. Invited Seminar: Universidad Austral de Chile, Valdivia.
- Centro del Desierto de Atacama, Chile: Mankind in the Desert: an interdisciplinary approach using integrated scientific and sustainability research. Invited participant and speaker. September 2015
- August 2019. Botanical Society of America Annual Meeting. Tucson AZ. **Stanton DE**, Nelson P and R Vargas Castillo. Trait and community variation across a fog gradient in desert lichens.
- August 2019. Botanical Society of America Annual Meeting. Tucson AZ. Meyer A, Glauser A and **DE Stanton**. Epiphyte Cover Varies with Height and Forest Type Across a Temperate to Boreal Ecotone.
- August 2019. Botanical Society of America Annual Meeting. Tucson AZ. Glauser A and **DE Stanton**. Small and mighty: estimating contributions of lichens and bryophytes to ecosystem services in Minnesota's forests.
- October 2018. Congreso Latinoamericano de Botánica/Latin-American Botanical Congress. **Stanton DE**, Nelson P and R Vargas Castillo. Alto Patache: comunidades liquísticas y variación funcional en un oasis de neblina.
- December 2017. Grupo Latinoamericano de Lichenólogos. Alto Patache: comunidades liquísticas y variación funcional en un oasis de neblina
- August 2016. Ecological Society of America Annual Meeting, Ft Lauderdale FL. **Stanton DE**, Batterman S, von Fischer J and L Hedin Phosphorus and molybdenum interact to limit nitrogen fixation by leaf-associated microbial communities in a tropical forest canopy.
- August 2016. International Association for Lichenology. Helsinki, Finland. **Stanton DE**, P Nelson and R Vargas Castillo. Structure and form of an Atacama fog-oasis lichen community across a fog gradient
- January 2015. International Association of Bryologists, Puerto Williams, Chile; **Stanton DE**, Bergstrom D, Rolland V and MC Ball. Functional traits and stable isotope signatures of sub-Antarctic bryophytes.
- August 2014. Ecological Society of America Annual Meeting, Sacramento CA: **Stanton DE**, Nguyen HT, Egerton JJG, Constable L, Walker W and MC Ball. Drinking the night away: nocturnal foliar absorption and reverse sap flow are frequent in a temperate-zone mangrove.
- August 2013. Ecological Society of America Annual Meeting, Minneapolis, MN: **Stanton DE**, JJG Egerton, HT Nguyen, V Rolland and MC Ball. A Taste for Salt: Physiological Traits of Mangrove Species and Communities Vary Non-Linearly across a Salinity Gradient.
- June 2013. Association for Tropical Biology and Conservation, San José, Costa Rica: **Stanton DE**, J Huallpa, LO Hedin and HS Horn. In review. *Functional Ecology*. Epiphytes Improve Host Plant Water Use by Microenvironment Modification.
- August 2011. Ecological Society of America Annual Meeting, Austin TX: **Stanton DE**, Salgado-Negret B, Hedin LO and JJ Armesto. Ecosystem properties self organize in response to a directional fog-vegetation feedback. Oral Presentation.
- April 2010. Rutgers, Princeton, Penn Ecology and Evolution Graduate Program Conference: **Stanton DE** and AK Shaw. How long will it take? A neutral model of gender ratios in academic science. Oral Presentation.
- August 2008. Ecological Society of America Annual Meeting, Milwaukee, WI, USA: **Stanton DE**. Ecohydrology without rainfall: alternative sources of water in arid environments. Invited Oral Presentation, part of a Special Session on Ecohydrology convened by Chris Zou (University of Arizona/Oklahoma State University).
- August 2007. American Bryological and Lichenological Society Annual Meeting, Xalapa, Mexico: **Stanton DE** and J Villagra. Host Selectivity of Atacama Desert Epiphytes. Oral Presentation.

- July 2007. Fundación Ecoandina (Wildlife Conservation Society), Charla Invitada, Cali, Colombia: **Stanton DE**. Epífitas, Hospederas y Ecohidrología de la Neblina. Oral Presentation.
- August 2005, Botany 2005, Botanical Society of America, Austin , TX, USA.: **Stanton DE**, Van Ee B and P Berry. Revisiting of the circumscription of *Croton* Section Geiseleria using ITS and trnL-F sequence data. Oral Presentation.

## 7 TEACHING EXPERIENCE:

- Fall 2018. Directed Research (EEB 4994).University of Minnesota-Twin Cities.
- Spring 2018. Directed Research (EEB 4994).University of Minnesota-Twin Cities.
- Spring 2018. Topics in Plant Biology: Conservation Horticulture (PMB 3500/5500). University of Minnesota-Twin Cities. *co-instructor: Lisa Philander*
- December 2017. Ecología de Bosques (Forest Ecology). Pontificia Universidad Católica de Chile/Senda Darwin. Invited instructor for field course
- Fall 2016. Minnesota Flora (PBio 4321). University of Minnesota-Twin Cities.
- Spring 2016. Flowering Plant Diversity (PBio 4511). University of Minnesota-Twin Cities
- November 2010. Ecología de Ecosistemas (Ecosystem Ecology). Designed and taught 15hr short course at the Universidad Nacional San Agustín, Arequipa, Perú.
- April 2008. Introducción al modelamiento simple en ecología (Introduction to simple modeling in ecology). Designed and taught 3hr workshop (+ field excursion) at the Universidad Nacional Jorge Basadre, Tacna, Perú.
- Spring 2010; Spring 2011. Assistant in Instruction. EEB 346-Biology of Coral Reefs (Instructor: Steve Pacala). Princeton University.
- Fall 2008. Assistant in Instruction and Guest Lecture. EEB 417-Ecosystem and Global Change (Instructor: Lars Hedin). Princeton University.
- Fall 2006. Assistant in Instruction. EEB 211-Biology of Organisms (Instructor: James Gould). Princeton University.
- Supervision of four undergraduate theses at the Universidad Nacional San Agustín, Arequipa, Perú: Freddy Delgado Manrique, Din Heredia Huarino, Jackelyn Huallpa Chávez and Jeobana Quispe Ochoa.
- Supervision of undergraduate directed research at University of Minnesota-Twin Cities: Joe Ure (Spring 2017-present), Katarina Stone (Spring 2019).
- Mentored summer intern Cherley Muinjo (St Catherine's University, St Paul MN)-Summer 2018.
- Co-supervision (with Dr J. Armesto) of Masters thesis at the Pontificia Universidad Católica de Chile: Camila Cifuentes (May 2015-May 2018).

## 8 PROFESSIONAL MEMBERSHIPS:

- American Bryological and Lichenological Society (ABLS) 2007-present.
- Asociación Latinoamericana de Botánica (ALB) 2006-present.
- Association for Tropical Biology and Conservation (ATBC) 2012-present
- Ecological Society of America (ESA) 2008-present.
- Ecological Society of Australia (ESA) 2012-present.
- Grupo Latinoamericano de Liqueólogos (GLAL) 2007-present.
- International Association of Bryologists (IAB) 2011-present.
- International Association for Lichenology (IAL) 2008-present.
- Sociedad Latinoamericana de Briología (SLB) 2006-present.

- Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) 2015-present

## 9 RECENT OUTREACH:

- Invited table (Market Science). Lichens. Minnesota State Fair. September 2019.
- Invited talk. Lichens. Minnesota Mycological Society. January 2019.
- Invited table (Market Science). Overlooked Plants. Frogtown Farm Harvest Festival. September 2018.
- Invited table. Lichens and Mosses: The first after the glaciers and still with us today! Bell Museum Grand Opening. July 2018.
- Invited table. Magic of Mosses. American Swedish Institute-Kim Simonsson's "Moss People" Exhibit. April and June 2018 *with CBS Conservatory*.
- Guided walk. Beckman Bog. Cedar Creek Ecosystem Science Reserve 75th Anniversary Celebration. September 2017.
- Invited talk and guided walk. Lichens of Minnesota and beyond. Ney Nature Center, Henderson, MN. June 2016.
- Invited guided walk. Lichens. BioBlitz, Interstate State Park, Taylors Falls, MN. May 2016.
- Invited talk and guided walk. Lichens of Minnesota and beyond. Warner Nature Center, Marine on St Croix, MN. April 2016
- Instructor. Gidakiimanaaniwigamig Winter Camp. Cloquet Forestry Center/Fond du Lac Reservation, Cloquet, MN. February 2016.
- Invited talk. Lichens. Minnesota Naturalists Association Annual Meeting. October 2015.

## 10 OTHER SERVICE ACTIVITIES:

- Manuscript Reviewer for *Annals of Botany*, *Biotropica*, *the Bryologist*, *Ecography*, *Forests*, *Functional Plant Biology*, *Journal of Ecology*, *Journal of Visualized Experiments*, *the Lichenologist*, *Molecules*, *Nature Geosciences*, *PLOS ONE*, *Planta*, *Plant Biology*, *New Zealand Journal of Botany*, *Revista de Biologia Tropical*, *Scientific Reports*, *Tree Physiology*.  
[publons.com/a/1174597/](http://publons.com/a/1174597/)
- Grant reviewer for INACH (Chilean Antarctic Program), CONICYT (Chilean National Science Foundation)
- Collections curation at Bell Herbarium (MIN) including managing 9 inter-herbarium loans and overseeing the addition of > 1000 lichen and bryophyte specimens in past year.
- Ecological Society of America- South American Chapter: Founding member, Webmaster, August 2010-August 2012. Chair-Elect, August 2015-August 2016.
- Ecological Society of America- SEEDS Mentor (August 2015).
- Ecological Society of America-Early Career Ecologist Section: Founding member and Secretary, August 2014-August 2015.
- Ecological Society of America-International Affairs Section: Awards Chair, August 2013-August 2014.
- Ecological Society of America- Student Section: International Liaison and Travel Award coordinator, August 2010-August 2011.
- Princeton Research Symposium: Organizer. September 2007-November 2009.
- Graduate Student Representative to the Department. September 2006-September 2008.
- Chican@ and Latin@ Studies Certificate Student Association (ChiLaCSA): Board of Directors and Student Representative to CLS Program Curriculum Committee: September 2004-May 2005.
- University of Wisconsin-Madison Multicultural Council: Chicano Representative: January 2003-May 2005