

# TYEEN TAYLOR

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## EDUCATION

- University of Arizona. 2010-present. PhD Candidate in Ecology and Evolutionary Biology. Advisor: Dr. Scott Saleska.
- University of Arizona. 2010. Graduate field course in tropical biogeochemistry. NSF Amazon-PIRE. Manaus, Brazil.
- Organization for Tropical Studies. 2006. Graduate field course in tropical plant systematics.
- The Evergreen State College. 2003-2006. BSc. Natural Sciences.

## UNIQUE SKILLS

- Languages: Portuguese (advanced), Spanish (advanced).
- Instrumentation: Designed, built, and field tested a new instrument for leaf volatiles in the field. Good understanding of other ecophysiology and tower-mounted instrumentation and data analysis.
- Programming: Advanced skills. Instructor of graduate course “Programming for Data Analysis in R”.
- Field: Cumulative tropical field work experience > 2.5 years, Costa Rica and Brazil. Advanced botanical identification, collection, and trait measurement. Advanced canopy access. Wilderness First Responder. Extensive unguided technical and remote backcountry experience in all major biomes.
- Topical expertise: Community and functional ecology; ecophysiology; plant evolution; ecosystem fluxes.
- Science communication: Extensive training and experience in public communication to all ages through oral, written, photographic, and film based presentation.

## PUBLICATIONS

### In prep

- **Taylor, T.C.**, McMahon, S., Smith, M., Violle, C., van Haren, J., Simova, I., Jardine, K., Ferreira, L., da Costa, L., Meir, P., Boyle, B., Enquist, B., Saleska, S. In prep. Isoprene emission links tree community assembly to climate.
- **Taylor, T.C.**, Saleska, S. In prep. A new instrument to quantify leaf isoprenoid emissions in the field.
- **Taylor, T.C.**, Alves, E., Tota, J., de Oliveira, C., de Camargo, P., Saleska, S. In prep. Taxonomy, traits, and environment determine isoprenoid emissions from an evergreen tropical forest.
- **Taylor, T.C.**, Chor, T., Walter, D., Araujo, A., Andreae, M., Saleska, S., Sörgel, M. In prep. A forest source of CO to the atmosphere quantified by gradient-flux technique in central Amazonia.
- Smith, M.N., **Taylor, T.C.**, van Haren, J., Rosolem, R., Restrepo-Coupe, N., de Oliveira, R. C., da Silva, R., da Araujo, A. C., de Camargo, P. B., Huxman, T. E., and Saleska, S. R. In prep. Evidence that tropical forest photosynthesis is not directly limited by high temperatures.
- Albert, L.P., Restrepo-Coupe, N., Smith, M.N., Wu, J., Chavanna-Bryant, C., Prohaska, N., **Taylor, T.C.**, Martins, G., Huxman, T.E., McMahon, S.M., Saleska, S.R. In prep. Ecosystem implications of cryptic phenology: hidden seasonality in Amazon forests and beyond.

**2015**

- Jardine, K., Yanez-Serrano, A.M., Williams, J., Kunert, N., Jardine, A, **Taylor, T.C.**, Abrell, L., Artaxo, P., Guenther, A., Hewitt, C.N., House, E., Florentino, A.P., Manzi, A., Higuchi, N., Kesselmeier, J., Behrendt, T., Veres, P.R., Derstroff, B., Fuentes, J.D., Martin, S.T., Andreae, M.O. 2015. Dimethyl sulfide in the Amazon rain forest. *Global Biogeochemical Cycles*. 29: 19-32.

**2011**

- Jardine, K., Yanez Serrano, A., Arneth, A., Abrell, L., Jardine, A., Artaxo, P., Alves, E., Kesselmeier, J., **Taylor, T.C.**, Saleska, S., and Huxman, T. 2011. Ecosystem-scale compensation points of formic and acetic acid in the central Amazon. *Biogeosciences* 8:9283-9309.

**PRESENTATIONS**

- 2016-Sep (Poster) **Taylor, T.C.**, Alves, E., Tota, J, de Oliveira, C., de Camargo, P., Saleska, S. Determining ecological covariates with a plant stress response trait—leaf isoprenoid emissions—in a tropical forest with a new system for emission detection. Washington DC. DOE NGEE-Tropics annual meeting.
- 2016-Aug (Poster) **Taylor, T.C.**, Alves, E., Tota, J, Camargo, P., Saleska, S. Determining ecological covariates with a plant stress response trait—leaf isoprenoid emissions—in a tropical forest with a new system for emission detection. Ft Lauderdale, FL. ESA annual meeting.
- 2016-Jul (Poster) **Taylor, T.C.**, Alves, E., Tota, J, Camargo, P., Saleska, S. Determining ecological controls on isoprenoid emissions from a tropical forest with a new leaf-level measurement system. Girona, Spain. Gordon Conference: Biogenic Hydrocarbon Emissions and the Atmosphere.
- 2016-Feb (Oral) **Taylor, T.C.** Isoprenoid emissions from an Amazonian forest: determining ecological controls on a cryptic plant trait. Univ. of AZ. EEB dept. seminar.
- 2015-Nov (Oral in Portuguese) **Taylor, T.C.** Determination of ecological controls on organic gas emissions from a tropical forest using a new detection system. DOE GO-Amazon project meeting, Santarém, Pará, Brazil.
- 2015-May (Oral) **Taylor, T.C.** The role of plant volatiles in forest-atmosphere interactions, and a new system to quantify leaf emissions in the field. Univ. of AZ. EEB dept. seminar.
- 2013-Sep (Oral) **Taylor, T.C.** The role of isoprene in tropical forests under climate change. Univ. of AZ. EEB dept. seminar.
- 2013-Aug (Poster) **Taylor, T.C.**, Jardine, K., Smith, M.N., Violle, C., Boyle, B., van Haren, J., Rosolem, R., Enquist, B., Saleska, S. Selection for isoprene-emitting trees in a warmed, artificial tropical forest: implications for climate change and community phylogenetic analyses. Minneapolis, MN. Ecological Society of America annual meeting.
- 2013-Aug (Poster) Smith, M.N., Stark, S.C., Saleska, S.R., **Taylor, T.C.** Leaf area phenology at a site in the Brazilian Amazon from a large-scale study using ground-based LiDAR to look at vertical canopy structure. Minneapolis, MN. Ecological Society of America annual meeting.
- 2012-Oct (Oral in Portuguese) Albert, L.P., Wu, J., Smith, M.N., **Taylor, T.C.**, Prohaska, N., Campos, K.S., Bicalho, A.P., Eltringham, M. Entendendo o futuro da Amazônia sob a mudança da clima. Universidade Luterana do Brasil (ULBRA), Pará, Brasil.

- 2012-Sep (Oral in Portuguese) Albert, L.P., Wu, J., Smith, M.N., **Taylor, T.C.**, Prohaska, N., Campos, K.S., Bicalho, A.P., Eltringham, M. Entendendo o futuro da Amazônia sob a mudança da clima. Universidade Federal do Oeste do Pará (UFOPA), Pará, Brazil.
- 2011-Oct (Oral) **Taylor, T.C.** Responses of the Biosphere 2 tropical forest mesocosm to long-term warming: A case study for understanding tropical forest responses to climate change. Univ. of AZ. EEB dept. seminar.
- 2011-Aug (Poster) **Taylor, T.C.**, Smith, M.N., Boyle, B., Saleska, S., Rosolem, R., van Haren, J. Enhanced thermal tolerance of the Biosphere 2 tropical forest in response to long-term warming. Austin, TX. Ecological Society of America annual meeting.
- 2011-Apr (Oral) **Taylor, T.C.** Biosphere 2: a tool for probing effects of climate on rainforest community assembly? Biosphere 2, Univ. of AZ. NSF Amazon-PIRE program meeting.

## FELLOWSHIPS, GRANTS, AND AWARDS

- 2016 \$1000 Darwin-Wallace Scholarship, Ecology and Evolutionary Biology, Univ. of AZ
- 2016 \$2230 Gordon Research Conference meeting attendance contribution
- 2016 \$750 Travel grant, Graduate and Professional Student Council, Univ. of AZ
- 2016 \$300 Travel grant, Institute of the Environment, Univ. of AZ
- 2016 \$100 College of Science **Teaching Award**, Univ. of AZ
- 2010-2015  
\$25,000 annual NSF Amazon-PIRE **Graduate Student Fellowship**
- 2015 Third place, Faces of Biology photo contest, Bioscience (publ. March 2016 issue)
- 2014 \$1000 Galileo Scholarship, Biosphere 2/College of Science, Univ. of AZ
- 2013 \$500 Travel grant, Graduate and Professional Student Council, Univ. of AZ
- 2013 \$100 Best in Student category, Eye on the Environment photography competition, Institute of the Environment, Univ. of AZ
- 2012 \$2,500 Rachael Carson Scholarship for Public **Science Communication**, Univ. of AZ
- 2011 \$750 President's Award (top prize), Graduate Student Showcase, Univ. of AZ

## POSITIONS

- 2015-2016  
Graduate Research Associate, Univ. of AZ, Advisor: Scott Saleska.
- 2009 Research Assistant, Biosphere 2, Univ. of AZ.
- 2008 Project Manager for asbestos abatement and survey operations, Compositech, Prudhoe Bay oilfield, Alaska.

## TEACHING EXPERIENCE

- 2016 Comprehensive R tutorials, available online at <http://www.saleskalab.org/teaching/tutorials/r-tutorials/>.
- 2015-2016  
**Instructor and creator of credited graduate and undergraduate course: Programming for Data Analysis in R**. Faculty sponsor: Scott Saleska.

2014 Two semesters, volunteer teaching weekly informal graduate student course on programming for data analysis in R.

## OUTREACH AND PUBLIC SCIENCE COMMUNICATION

- 2016-Feb Tropical forest research demoes and discussions with public. Biosphere 2 'What if?' series.
- 2016-Feb Invited interview and research demo for Lawrence Berkeley Hall of Science 7<sup>th</sup> grade science curriculum film. Biosphere 2, AZ.
- 2016-Feb Produced short film introducing Saleska Lab research (<http://www.saleskalab.org>).
- 2015-Fall Mentoring early-stage PhD students in remote Brazil for ecosystem gas flux measurements.
- 2015-Jul Produced short film for youtube, introducing Brazil field work (<https://www.youtube.com/watch?v=S9JIXhULUg8>).
- 2014-Oct Public demo ecophysiology measurements at Amazon-PIRE photo exhibit, Biosphere 2, AZ.
- 2014-Apr Invited presentations on forest research to 4<sup>th</sup> and 6<sup>th</sup> grade students, Sonoran Science Academy, Tucson, AZ.
- 2014-Mar Discussions with public at NSF CRPA photo exhibit of Amazon-PIRE research, Biosphere 2, AZ.
- 2013-Sep Invited public presentation on Amazon research for UA Institute of the Environment 'Science Café' series, Borderlands Brewery, Tucson, AZ.
- 2013-Jun Presentation on Amazon forest research, Saint Mark's preschool, AZ.
- 2013-Apr Published article about Amazon research in journal Terrain.org blog. (<http://blog.terrain.org/2013/04/19/researching-amazonia/>)
- 2012-Nov Field demonstrations in Portuguese on ecophysiological measurement techniques for masters students, Santarém, Pará, Brazil.
- 2012-Sep Television interview in Portuguese about tropical forest research, local TV news show, Santarém, Pará, Brazil.
- 2012-Jun Produced short film for youtube (1300+ views), "Dissolving the Green Wall" about tropical plants in Biosphere 2, (<https://www.youtube.com/watch?v=dtylBV1MxpM>).
- 2012-May Television interview, Globo TV, tropical forest research, Biosphere 2, AZ.
- 2012-May Half-hour interview for local radio show Mrs. Green's World (<https://www.mrsgreensworld.com/2012/05/22/ty-taylor-university-of-arizona-institute-of-the-environment-carson-scholar-2/>).
- 2012-Apr Produced documentary short film for youtube (700+ views), research on isoprene emissions and climate change in Biosphere 2 (<https://www.youtube.com/watch?v=OpQEpwk6FVE>)
- 2011-May Featured interview, **National Geographic X-Ray Earth** television broadcast.
- 2011-Apr Tour of Biosphere 2 tropical forest and workshop on gas exchange measurements for high school biology students, Tucson, AZ.
- 2010-Oct Co-led photosynthesis workshop at Palo Verde High School, Tucson, AZ.
- 2010-May Presentation on tropical forest dynamics to Biosphere 2 tour guides for incorporation into public tour curricula.
- 2010-Feb Biosphere 2 'Science Buzz' kiosk entry on canopy research in Costa Rica.
- 2010-Feb Tropical forest structure and phylogeny puzzles for Bear Essentials News for Kids.

## PROFESSIONAL AFFILIATIONS

Botanical Society of America  
Ecological Society of America  
American Geophysical Union