STEPHANIE ANN BOHLMAN

ADDRESS

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EDUCATION

- 2004 Ph. D. Forest Resources, University of Washington, Seattle.
- 1995 M. S. Forest Resources, University of Washington, Seattle.
- 1991 B. A. Environmental Studies, New College, Sarasota, Florida.

APPOINTMENTS

- 2018- University of Florida. Forest Resources and Conservation. Associate Professor.
- 2018-2019 German Centre for Integrative Biodiversity Research (iDiv). Sabbatical Researcher.
- 2011-2018 University of Florida. Forest Resources and Conservation. Assistant Professor.
- 2005-2010 Princeton University. Ecology and Evolutionary Biology. Post-doctoral Researcher.
- 2004-5 Smithsonian Tropical Research Institute (STRI). Post-doctoral Fellow.
- 1998-2000 Olympic Coast National Marine Sanctuary. Education specialist.
- 1995-7 Olympic National Park. Naturalist/Park Ranger.

GRANTS AND AWARDS

- NSF Macrosystems Biology and NEON-Enabled Science. 2019-2022. "Disentangling cross-scale influences on tree species, traits, and diversity from individual trees to continental scales".
- NASA Future Investigators in NASA Earth and Space Science and Technology. 2019-2021. "Effects of Dams on Riparian Vegetation in the Amazon: Cultivate Impacts and Linkages to Hydrology"
- NSF Coupled Natural Human System RCN: 2016-2021: "Amazon Dams Network: Advancing integrative research and adaptive management of social-ecological systems transformed by hydroelectric dams". Amazondamsnetwork.org
- NSF Dimensions of Biodiversity US-China Collaborative Research. 2015-2019. "How historical constraints, local adaptation, and species interactions shape biodiversity across an ancient floristic disjunction". Usa-china-biodiversity.org
- National Institute for Standards and Technology (NIST). 2016-2018. "Data science for multimodal plant identification task". Ecodse.org
- University of Florida IFAS Jumpstart Funding. 2018. "Establishing a large-area forest dynamics plot at Ordway Swisher Biological Station."
- University of Florida Water Institute Graduate Fellowship. 2015-2019. "Hydrologic transformation in the Amazon basin: reconciling economy, society, and the environment in the world's largest watershed" waterinstitute.ufl.edu/education/wigf/2015-cohort
- NSF Division of Biological Sciences, Integrative Organismal Biology 2011-2016. "Temperature responses of dark respiration and their implications for tropical forest carbon balance"
- University of Florida IFAS Jumpstart Funding. 2016-2017. "Using remote sensing to determine the landscape-level controls key understory species distributions by fire regime and environmental heterogeneity in sandhill ecosystems."
- University of Florida Research Opportunity Seed Fund Grant. 2013 2014. "Designing a framework for integrative research on dams, environment and society in the Amazon".
- University of Florida IFAS Early Career Scientist Seed Funding. 2013-2014. "Integrating remote sensing and functional traits in a tropical forest dynamic model."

NASA Earth System Science Pre-Doctoral Fellowship. 2000-2003. "Tropical forest phenology across environmental gradients in Panama: A multiple scale study using remote sensing, construction cranes and forest inventory plots."

PUBLICATIONS

- Marconi, S., S. J. Graves, B. Weinstein, **S. Bohlman** and E. White. In review. Rethinking the fundamental unit of ecological remote sensing: Estimating individual level plant traits at scale. Remote Sensing of Environment
- Graves, S. J., T. T. Caughlin, J. Gearhart and **S. Bohlman**. In review. A digital mapping method for linking high-resolution remote sensing images to individual tree crowns. PLoS One.
- Kattge, J., G. Bönisch, S. Díaz, S. Lavorel, I. C. Prentice, P. Leadley, S. Tautenhahn, G. Werner, S. **Bohlman**,.....and Christian Wirth. In review. The TRY plant trait database revisited. Global Change Biology.
- Caughlin, T. T., C. Barber, G. Asner, N. Glenn, **S. Bohlman** and C. Wilson. In review. Monitoring tropical forest succession at landscape scales despite uncertainty in the Landsat satellite record. Ecological Applications
- Park, J., H. Muller-Landau, J. Lichstein, S. Rifai, J. Dandois. and **S. Bohlman**. 2019. Quantifying leaf phenology of individual trees and species in a tropical forest using unmanned aerial vehicle (UAV) Images. Remote Sensing, 11(13), 1534.
- Weinstein, B.G., S. Marconi, **S. Bohlman**, A. Zare and E. White, E. 2019. Individual tree-crown detection in RGB imagery using semi-supervised deep learning neural networks. Remote Sensing, 11(11), 1309.
- Marconi, S., S. J. Graves, D. Gong, M. Shahriari Nia, M. Le Bras, B. J. Dorr, P. Fontana, J. Gearhart, C. Greenberg, D. J. Harris and S. A. Kumar. A. Nishant, J. Prarabdh, S. U. Rege, S. **Bohlman**, E. P. White, & D. Z. Wang. 2019. A data science challenge for converting airborne remote sensing data into ecological information. PeerJ 6:e5843
- Athayde, S., E. Marques, E. Moretto, B. Millikan, S. Bohlman, A. Oliver-Smith, P. Fearnside, A. Rosette, M. Mathews, B. Loiselle, R. Vacca, W. Brasil, J. Dutka-Gianelli, T. Melis, C. Doria, and D. Kaplan. Accepted. Mapping Research on Hydropower and Sustainability in the Brazilian Amazon: Advances, Gaps in Knowledge and Future Directions. Current Opinion in Environmental Sustainability 37: 50-69
- Gutierrez, B. L., A. Almeyda Zambrano, S. Almeyda Zambrano, C. Quispe Gil, **S. Bohlman**, E. Avellan Arias, G. Mulder, C. Ols, R. Dirzo, A. M. DeLuycker, K. Lewis, and E. Broadbent. 2019. An island of wildlife in a human-dominated landscape: the last fragment of primary forest on the Osa Peninsula's Golfo Dulce coastline, Costa Rica. PLoS One 14(3), e0214390.
- Caughlin, T. T., S. J. Graves, G. P. Asner, B. C. Tarbox, and **S. A. Bohlman**. 2019. High-resolution remote sensing data as a boundary object that can facilitate interdisciplinary collaboration. pp. 295-326 IN Perz, S., ed. Collaboration Across Boundaries for Interdisciplinary Environmental Systems Science: Experiences Around the World. Palgrave Publishers, Basingstoke, United Kingdom
- Mills, D., Putz, F., **S. Bohlman** and M. Andreu. 2019. Liberation of future crop trees from lianas in Belize: completeness, costs, and timber-yield benefits. Forest Ecology and Management 439: 97-104
- Martinez Cano, I., Muller-Landau, H., Wright, S. J., **S. Bohlman** and S. Pacala. 2019. Tropical tree height and crown allometries for the Barro Colorado Nature Monument, Panama: a comparison of alternative hierarchical models incorporating interspecific variation in relation to life history traits. Biogeosciences 16(4): 847-862.

- Graves, S., J. Gearhart, T. T. Caughlin and **S. Bohlman**. 2018. A digital mapping method for linking high-resolution remote sensing images to individual tree crowns. PeerJ Preprints, 6, p.e27182v1.
- Graves, S., T. Caughlin, G. Asner, and **S. Bohlman**. 2018. A tree-based approach to biomass estimation from remote sensing data in a tropical agricultural landscape. Remote Sensing of Environment 218: 32-43.
- Guo, Y., S. Graves, S. L. Flory, & **S. Bohlman.** 2018. Hyperspectral measurement of seasonal variation in the coverage and impacts of an invasive grass in an experimental setting. Remote Sensing, 10(5), 784.
- Jiao, C., C. Chen, R. G. McGarvey, **S. Bohlman**, L. Jiao, & A. Zare. 2018. Multiple instance hybrid estimator for hyperspectral target characterization and sub-pixel target detection. ISPRS Journal of Photogrammetry and Remote Sensing, 146, 235-250.
- Hyde, J. L., **S. Bohlman**, & D. Valle. 2018. Transmission lines are an under-acknowledged conservation threat to the Brazilian Amazon. Biological Conservation 228: 343-356.
- Wilkinson, B., **S. Bohlman**, H. Lassiter, T. Caughlin, S. Graves, and S Rifai. 2017. Measurement of tropical forest biodiversity using airborne hyperspectral data. pp. 200-204 In: GOFC-GOLD & GEO-BON, eds. A Sourcebook of Methods and Procedures for Monitoring Essential Biodiversity Variables in Tropical Forests with Remote Sensing. Report version UNCBD COP-13, GOFC-GOLD Land Cover Project Office, Wageningen University
- Caughlin, T. T., S. W. Rifai, S. J. Graves, G. P. Asner, and S. A. Bohlman. 2016. Integrating LiDAR-derived tree height and Landsat satellite reflectance to estimate forest regrowth in a tropical agricultural landscape. Remote Sensing in Ecology and Conservation 2 (4), 190-203
- Caughlin, T. T., S. J. Graves, G. P. Asner, M. van Breugel, J. S. Hall, R. E. Martin, M. S. Ashton, S. A. Bohlman. 2016. A single hyperspectral aerial image can accurately predict growth rates of tropical tree species. Ecological Applications 26(8): 2369-2375. DOI: 10.1002/eap.1436
- Rifai, S. W., J. D. Urquiza Muñoz, R. Tello, R. Negrón-Juarez, M. C. Vanderwel, J. W. Lichstein, J. Q. Chambers, and **S. A. Bohlman**. 2016. Differential tree mortality from catastrophic wind disturbance augments estimation of landscape necromass in the Amazon. Ecological Applications 26(7): 2225-2237. DOI: 10.1002/eap.1368
- Graves, S., G. Asner, R. Martin, C. Amderson, M. Colgan, L. Kalantari and **S. Bohlman**. 2016. Tree species abundance predictions in a tropical agricultural landscape with a supervised classification model and imbalanced data. Remote Sensing 8(2), 161. doi:10.3390/rs8020161
- Farrior, C. I, **S. A. Bohlman**, S. Hubbell and S.W. Pacala. 2016. Dominance of the suppressed: Power-law size structure in tropical forests. Science 351:6269: 155-157.
- Prado, F. A., S. Athayde, J. Mossa, **S. Bohlman**, F. Leite, and A. Oliver-Smith. 2016. How much is enough? An integrated examination of energy security, economic growth and climate change related to hydropower expansion in Brazil. Renewable and Sustainable Energy Reviews 53: 1132-1136.
- Tautenhahn, S., M. Jung, J. W. Lichstein, **S. Bohlman**, H. Heilmeier, A. Porkushkin, J. Kattge, A. Kahl, and C. Wirth. 2016. Dispersal limitation drives successional pathways in Central Siberian forests under current and intensified fire regimes. Global Change Biology 22: 2178–2197.
- Kalantari, L., P. Gader, S Graves, and **S. Bohlman**. 2016. One-class Gaussian process for possibilistic classification using imaging spectroscopy. IEEE Transactions on Geoscience and Remote Sensing 13(7): 967-971.
- Shahriari Nia, M., D. Z. Wang, S. A. Bohlman, P. Gader, S. J. Graves, and M. Petrovic. 2015. Impact of atmospheric correction and image filtering on hyperspectral classification of tree

- species using support vector machine. Journal of Applied Remote Sensing 9(1), 095990. doi: 10.1117/1.JRS.9.095990
- Garzon-Lopez, C. X., L. Ballesteros-Mejia, A. Ordoñez, **S. A. Bohlman**, H. Olff and P. A. Jansen. 2015. Indirect interactions among tropical tree species via shared seed predators. Ecology Letters 18(8): 752-760.
- **Bohlman, S. A**. 2015. Species diversity of canopy versus understory trees in a Neotropical forest: Implications for forest structure, function and monitoring. Ecosystems 18: 658-670.
- Garzon-Lopez, C. X., P. A. Jansen, **S. A. Bohlman**, A. Ordoñez, and H. Olff. 2014. Effects of sampling scale on patterns of habitat association in tropical trees. Journal of Vegetation Science 25: 349-362.
- Kalantari, L., P. Gader, S. Graves, and S. Bohlman. 2014. Evaluating similarity measures for hyperspectral classification of tree species at Ordway-Swisher Biological Station. Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS'2014): 2691-2694.
- Chisholm, R.; Muller-Landau, H.; Kassim, A. R.; Bebber, D.; Bin, Y.; **Bohlman, S.**; and 57 others. 2013. Scale-dependent relationships between species richness and ecosystem function in forests. Journal of Ecology 101: 1214-1224.
- Meyer, V., S. S. Saatchi, J. Chave, J. W. Dalling, **S. Bohlman**, G. A. Fricker, C. Robinson, M. Neumann, S. Hubbell. 2013. Detecting tropical forest biomass dynamics from repeated airborne lidar measurements. Biogeosciences 10: 5421–5438.
- Garzon-Lopez, C. X., S. A. Bohlman, H. Olff, and P. A. Jansen. 2013. Mapping tropical forest trees using high-resolution aerial digital photographs. Biotropica 45(3): 308-316.
- **Bohlman, S. A.**, and S. W. Pacala. 2012. A canopy layering model that demonstrates regulation of crown structure and partitions dynamic rates in a tropical forest. Journal of Ecology. 100(1): 508-518.
- **Bohlman, S. A.** 2012. Low-tech and high-tech approaches to remote sensing of forest canopies. pp. 20-22 In: Lowman, M. D., Schowalter, T. D. and J. F. Franklin. Forest Canopy Methods. University of California Press, Berkeley, CA.
- Sanchez-Azofeifa, G. A., B. Rivard, S. J Wright., J. L. Feng, P. Li and S. A. Bohlman. 2011. Estimation of the distribution of Tabebuia guayacan (Bignoniaceae) using high-resolution remote sensing imagery. Sensors 11(4): 3831-3851.
- Caillaud, D., Crofoot, M. C., S. V. Scarpino, P. Jansen, C. X. Garzon-Lopez, A. Winkelhagen, S. A. Bohlman, P. D. Walsh. 2010. Modelling the spatial distribution and fruiting pattern of a key tree species of a neotropical forest: methodology and potential applications. PLoS One 5(11): 1-10.
- **Bohlman, S. A.** Landscape patterns and environmental controls of deciduousness in forests of central Panama. 2010. Global Ecology and Biogeography 19: 376-385.
- Gillespie, T. W., S. Saatchi, Pau, S., S. A. Bohlman, A. P. Giorgi, S. Lewis. 2009. Towards quantifying species richness of tropical forests in biodiversity hotspots: A case study from Panama. International Journal of Remote Sensing 30: 1629-1634.
- **Bohlman, S. A.**, W. F. Laurance, S. G. Laurance, H. E. M. Nascimento, P. M. Fearnside and A. Andrade. 2008. Importance of soils, topography and geographic distance in structuring central Amazonian tree communities. Journal of Vegetation Science 19: 863-874.
- **Bohlman, S. A.** 2008. Hyperspectral remote sensing of exposed wood and deciduous trees in seasonal tropical forests. pp. 177-192. In: Sanchez-Azofeifa, G. A. and Kalacska, M., eds. Hyperspectral Remote Sensing of Tropical and Sub-Tropical Forests. CRC Press, Boca Raton, FL.

- Jansen, P. A, **S. A. Bohlman**, C. X. Garzon-Lopezg, H. Olff, H. Muller-Landau, and S. J. Wright. 2008. Remote sensing large-scale spatial variation in fruit abundance across a tropical moist forest. Ecography 31: 33-42.
- Kalacska, M., **S. A, Bohlman**, G. A. Sanchez-Azofeifa, K. Castro-Esau, and T. Caelli. 2007. Hyperspectral discrimination of tropical dry forest lianas and trees: Comparative data reduction approaches at the leaf and canopy levels. Remote Sensing of Environment 109: 406-415.
- **Bohlman, S. A.**, and S. T. O'Brien. 2006. The relationship of allometry, adult stature and regeneration requirement of 65 species on Barro Colorado Island, Panama. Journal of Tropical Ecology 22: 123-136.
- Muller-Landau, H. C., R. S. Condit, J. Chave, S. C. Thomas, **S. A. Bohlman**, and 35 others. 2006. Testing metabolic ecology theory for allometric scaling of tree size, growth and mortality in tropical forests. Ecology Letters 9: 575-588.
- Condit, R., K. Watts, **S. A. Bohlman**, R. Pérez, R. B. Foster, and S. P. Hubbell. 2000. Quantifying the deciduousness of tropical forest canopies under varying climates. Journal of Vegetation Science 11: 649-658.
- **Bohlman, S. A.**, J. B. Adams, M. O. Smith, and D. L. Peterson. 1998. Seasonal foliage changes in the eastern Amazon basin detected from Landsat Thematic Mapper satellite images. Biotropica 30: 376-391.
- **Bohlman, S. A.,** T. Matelson, and N. M. Nadkarni. 1995. Moisture and temperature patterns of canopy humus and forest floor soil of a montane cloud forest, Costa Rica. Biotropica 27: 13-19
- Hanson, P. J., S. D. Wullschleger, **S. A. Bohlman**, and D. E. Todd. 1993. Seasonal and topographic patterns of forest floor CO2 efflux from an upland oak forest. Tree Physiology 13: 1-15.

SYNERGISTIC ACTIVITIES

- Associate editor for two journals, Ecological Research and Remote Sensing in Ecology and Conservation (2017-)
- Participant in "Talk Science with Her", an event to allow the public to interact with female scientists in an informal setting. February 2018.
- Lead development of learning modules on social-environmental impacts of dams in the Amazon River and Colorado River watersheds. http://amazondamsnetwork.org/, 2017
- Developed and taught interdisciplinary study abroad graduate student course on tropical ecology and management in Quintana Roo, Mexico with faculty and students from the University of Florida and from the Universidad Intercultural Maya de Quintana Roo, 2016
- Worked with media consultant to develop a podcast (http://www.onsetcomp.com/node/8829) on how to use off the shelf environmental monitoring equipment in undergraduate field courses, 2013.
- Developed intertidal monitoring programs with local school teachers on the Olympic Peninsula, Washington State, including on the Makah Indian Reservation and Forks Alternative School as education assistant for the Olympic Coast National Marine Sanctuary, 1995-9.
- Developed and taught 2-week field course for high school biology teachers across the U.S. on how to incorporate intertidal monitoring into their curriculum. Sponsored by Olympic Coast National Marine Sanctuary, Sustainable Seas Initiative and University of Washington Extension. 1999
- Co-host of "Rainforest at the Crossroads" live satellite broadcasts from Barro Colorado Island to 3 million 5th 8th grade students. Helped develop on-line NASA remote sensing curriculum for the project. 2004

- Taught marine biology through presentations, interpretive walks, development of interpretive material as a naturalist/park ranger for Olympic National Park. 1995-8
- Courses taught: Forest Ecology Lecture and Lab (undergraduate), Tropical Forest Ecology and Management (graduate), Remote Sensing on Terrestrial Ecosystems (graduate)

PRESENTATIONS AND SEMINARS

- **Bohlman, S.** Inter- and intra-specific variation in tropical canopy phenology: Insights from field data and images from Unmanned Aerial Vehicles (UAVs). May 2019, Oxford University, UK.
- **Bohlman, S.,** J. Park, J. Dandois, J. Lichstein, T. Merrick, E. Broadbent, M. Detto, S. Grubinger, M. Garcia, and H. Muller-Landau. Investigating tropical forest phenology, structure, and dynamics using repeated ultra-high-resolution imagery collected by unmanned aerial vehicles. April 2019, British Ecological Society and Society for Tropical Ecology joint meeting, Edinburgh, Scotland.
- **Bohlman, S.** Phenology, leaf traits and tree growth of individual trees and species: A remote sensing perspective. November 2018, Hemholtz Center for Environmental Research-UFZ, Leipzig, Germany
- **Bohlman, S.** Remote sensing of traits and demography in forests. October 2018, German Centre for Integrative Biodiversity Research (iDiv), Leipzig, Germany
- **Bohlman, S.** Phenology, leaf traits and tree growth of individual trees and species: A remote sensing perspective. September 2018, German Centre for Integrative Biodiversity Research (iDiv), Leipzig, Germany.
- Graves, S. J., T. Caughlin, M. Slot, and **S. Bohlman**. Measuring tropical tree growth rates via spectroscopy and leaf traits to monitor reforestation on degraded lands. Annual Meeting, Ecological Society of America meetings, August 2018, New Orleans, Louisiana.
- Marconi, S., S. J. Graves, **S. Bohlman**, J. W. Lichstein, A. Singh, and E. P. White. Scaling up remote sensing fundamental unit: from pixel to crowns. Inferring forest structure and traits syndromes for each individual tree within NEON forest sites. Annual Meeting, Ecological Society of America meetings, August 2018, New Orleans, Louisiana.
- Park, J., S. Rifai, J. Dandois, J. Lichstein, H. Muller-Landau and **S. Bohlman**. Quantifying asynchronous species-specific canopy leaf phenology using camera-mounted UAV images. Annual Meeting, Ecological Society of America meetings, August 2018, New Orleans, Louisiana.
- Graves, S. J., T. Caughlin, S. Marconi, and **S. Bohlman**. From pixels to function: Tree growth estimation from canopy hyperspectral reflectance. ForestSAT: Biannual meeting of the Association for Forest Spatial Analysis Technologies, October 2018, College Park, Maryland.
- Graves, S. J. and **S. Bohlman**. A digital mapping method for linking high resolution remote sensing images to individual tree crowns. ForestSAT: Biannual meeting of the Association for Forest Spatial Analysis Technologies, October 2018, College Park, Maryland.
- Park, J., H. Muller-Landau, J. Lichstein, S. Rifai, J. Dandois and **S. Bohlman**. Using RGB camera-mounted unmanned aerial vehicles to quantify individual tree-based leaf

- phenology in a tropical moist forest. ForestSAT: Biannual meeting of the Association for Forest Spatial Analysis Technologies, October 2018, College Park, Maryland.
- **Bohlman, S.** Imaging spectroscopy of forest biodiversity, NASA workshop "From Arboreal to Benthic Communities: the ABCs of Land to Ocean Biodiversity", January 2018, Kampong National Botanical Gardens, Coconut Grove, Florida.
- **Bohlman, S.** Insights into phenology and tree growth of individual trees and species in tropical forests from remote sensing. April 2018, Smithsonian Tropical Research Institute, Panama City, Panama.
- **Bohlman, S.**, J. Park, H. Muller-Landau, S. Rifai, and J. Dandois. Intra- and interspecific variation in tropical tree and liana phenology derived from Unmanned Aerial Vehicle images. Annual Meeting, American Geophysical Union, December 2017, New Orleans, Louisiana.
- **Bohlman, S.**, S. Rifai, H. Muller-Landau and J. Dandois. Intra- and interspecific variation in tropical tree phenology derived from Unmanned Aerial Vehicle images: association with plant traits and response to interannual climate variation. Annual Meeting, Ecological Society of America, August 2017. Portland, OR
- Graves, S., J. Lichstein, G. Asner, and **S. Bohlman**. Testing the relationship between canopy reflectance and growth in Southeastern US forests. Annual Meeting, Ecological Society of America, August 2017. Portland, OR
- **Bohlman, S.**, S. Rifai [p], J. Park [g], J. Dandois, and H. Muller-Landau. Intra- and interspecific variation in tropical tree phenology derived from Unmanned Aerial Vehicles. Annual Meeting, Association for Tropical Biology and Conservation, July 2017. Merida, Mexico.
- **Bohlman, S.**, S. Rifai, J. Park, J. Dandois, and H. Muller-Landau. April 2017. Community patterns of tropical tree phenology derived from Unmanned Aerial Vehicle images: Intra- and interspecific variation, association with species plant traits, and response to interannual climate variation. Annual Meeting, European Geosciences Union Vienna Austria.
- **Bohlman, S.** Green up or brown down and why it matters: Phenology patterns in tropical forests and their consequences for the global carbon cycle. February 2017. Department of Geography Colloquium series, University of Florida, Gainesville, Florida.
- **Bohlman, S.** Remote sensing of forest composition and dynamics in temperate and tropical forests. May 2016, The Joseph W. Jones Environmental Research Center, Newton, Georgia.
- **Bohlman, S.**, S. Graves, M. Shahriari Nia, P. Gader, L. Kalantari, and D. Wang. December 2015. Understanding species composition from NEON high resolution hyperspectral-LIDAR data across a heterogeneous landscape: Effects of land use, fire regime and topography. Annual Meeting, American Geophysical Union, San Francisco, California.
- **Bohlman, S.** Ecological applications of hyperspectral data. Hyperspectral Remote Sensing seminar series, December 2016, Department of Electrical and Computer Engineering, University of Florida, Gainesville, Florida
- **Bohlman, S.,** T. Caughlin, S. Graves, J. Hall, R. Martin, and G. Asner. A single hyperspectral image can detect growth rate variation within and among tropical tree species. Annual Meeting, Ecological Society of America, August 2015, Baltimore, Maryland.

- Graves, S, and **S. Bohlman**. Testing the relationship between canopy reflectance and tree growth for canopy trees in North Central Florida. National Convention, Society of American Foresters, October 2016, Madison, Wisconsin.
- Park, J., J. Dandois, J. Lichstein, H. Muller-Landau, and **S. Bohlman**. Using unmanned aerial vehicles to quantify phenology of a tropical forest. Annual Meeting, Ecological Society of America, August 2016, Ft. Lauderdale, Florida.
- Graves, S., **S. Bohlman**, and T. Caughlin . Exploring the trait-based mechanisms of the relationship between canopy reflectance and tree growth. Annual Meeting, Ecological Society of America, August 2016, Ft. Lauderdale, Florida.
- Guo, Y, S. Graves, C. Fahey, S. Flory, P. Gader, and **S. Bohlman**. Spectral detection of an invasive grass species under simulated drought. Annual Meeting, Ecological Society of America, August 2016, Ft. Lauderdale, Florida.
- **Bohlman, S.**, S. Grave, M. Shahriari Nia, P. Gader, L. Kalantari, and D. Wang. Understanding species composition from NEON high resolution hyperspectral-LIDAR data across a heterogeneous landscape: Effects of land use, fire regime and topography. Annual Meeting, American Geophysical Union, December, 2015, San Francisco, California.
- Rifai, S., L. Anderson, and **S. Bohlman**. Spatiotemporal variability of blowdowns and the changing climate of the Northwestern Amazon. Annual Meeting, American Geophysical Union, December, 2015, San Francisco, California.
- **Bohlman, S.**, T. Caughlin, S. Graves, J. Hall, R. Martin, and G. Asner. A single hyperspectral image can detect growth rate variation within and among tropical tree species. Annual Meeting, Ecological Society of America, August 2015, Baltimore, Maryland.
- Rifai, S., **S. Bohlman**, D. Muñoz, F. Ramírez, R. Negron-Juarez, and J. Chambers. Changes in local to landscape tree species diversity from large catastrophic wind disturbance events in the Northwestern Amazon. Annual Meeting, Ecological Society of America, August 2015, Baltimore, Maryland.
- Frankhouser, G., T. Caughlin, S. Graves, O. Morton, and **S. Bohlman**. Divergent land use pathways for secondary forest succession in Panama's Azuero Peninsula. Annual Meeting, Ecological Society of America, August 2015, Baltimore, Maryland.
- Graves, S., M. Colgan, G. Asner, and **S. Bohlman**. Aerial insights into tree species diversity and biomass in a tropical agricultural landscape. Annual Meeting, Ecological Society of America, August 2015, Baltimore, Maryland.
- Dandois, J., M. Ramirez, **S. Bohlman**, and H. Muller-Landau. Mapping the rhythms of tropical forest canopy deciduousness using unmanned aerial vehicles. Annual Meeting, Ecological Society of America, August 2015, Baltimore, Maryland.
- **Bohlman, S. A.** Determining Species Distributions and Growth Rates of Tree Crowns Using Hyperspectral Remote Sensing". Annual Meeting, Society of American Foresters, October 2014. Salt Lake City, UT.
- Farrior, C.E., **S.A. Bohlman**, and S.W. Pacala. 2014 Tropical forest size structure: Dominance of the suppressed. Annual Meeting, Ecological Society of America, August 2014, Sacramento, California.
- **Bohlman, S.** Trees outside of forests: landscape-level contributions to carbon, species diversity and future forest dynamics on the Azuero peninsula. Center for Tropical Forest Science seminar series, June 2014, Smithsonian Tropical Research Institute, Panama City, Panama

- **Bohlman, S. A.** Land use land cover change related to Amazon dam construction. May 2014, Invited seminar, May 2014. Federal University of Tocantins, Palmas, Brazil and Federal University of Rondônia, Porto Velho, Brazil.
- Graves, S. J., **S. A. Bohlman**, G. P. Asner and M. S. Colgan. "Ecology from above: Aerial insights into tree species diversity in a tropical agricultural landscape." Annual Meeting, Association of American Geographer, April 2014, Tampa, FL.
- **Bohlman, S**. Current tree cover and opportunities for reforestation in the highly deforested Azuero peninsula of Panama. 63rd Annual Latin American Studies Conference: Panama Considered: Remembering the Past, Embracing the Future. 2014, University of Florida, Gainesville, Florida
- Bohlman, S. A. "Tropical forest canopy diversity, structure and dynamics". Invited seminar, June 2013, University of Groningen, Netherlands.
- Bohlman, S. A. "Integrating remote sensing, field data and models to understand tropical forest structure and dynamics" Invited seminar, April 2013, Department of Energy Oak Ridge National Laboratory, TN
- Bohlman. S. A. "Canopy dynamics, crown change and diameter growth of tropical trees".

 Annual Meeting, Association for Tropical Biology and Conservation, June 2013, San Jose, Costa Rica.
- Rifai, S. W., J. D. U. Muñoz, S. A. Bohlman and J. Q. Chambers. "Catastrophic wind disturbance causes selective tree mortality in the Peruvian Amazon". Annual Meeting, Association for Tropical Biology and Conservation, June 2013, San Jose, Costa Rica.
- Romero, C., M. L. Bauman, S. Palmas, S. A. Bohlman and others. "Projecting the future of REDD+ landscapes with agent-based modeling". Annual Meeting, Association for Tropical Biology and Conservation, June 2013, San Jose, Costa Rica.
- Bohlman, S. A. "Canopy crown dynamics, competition and diameter growth in an old-growth tropical forest". Annual Meeting, Ecological Society of America, August 2012, Portland, Oregon.
- Graves, S. and S. A. Bohlman. 2013. "Tree cover distribution and above ground carbon stocks of dispersed trees in an agricultural landscape of the dry tropics" Annual Meeting, Ecological Society of America, August 2013, Minneapolis, MN
- Bohlman, S. A., D. W. Purves, J. W. Lichstein and S. W. Pacala. "A simple model of canopy structure for tropical forests: tests from field and remote sensing data and implications for forest dynamics". Annual Meeting, Association for Tropical Biology and Conservation, July 2008, Paramaribo, Suriname.
- Bohlman, S. A., D. W. Purves and S. W. Pacala. "Modeling and remote sensing of canopy structure, community and light dynamics in tropical forests". Japan-US workshop on phenotypic plasticity in response to environmental change: scaling from the molecular to ecosystem level, October 2007, Nikko, Japan.
- Bohlman, S. A., D. W. Purves and S. W. Pacala. "Overstory crown characteristics and species composition affect subcanopy composition and function in a tropical forest." Annual Meeting, Ecological Society of America, August 2006, Memphis.
- Bohlman, S. A. "Tropical Tree Canopies: Beyond Adventure Biology to Understanding Dynamics of Large Tropical Trees." Biology seminar speaker, Bucknell University, May 2006.
- Bohlman, S. A. "Remote sensing technology for basic research and applied management." Invited speaker, Seeing the Big Picture, Syposium on Remote Sensing In Regional

- And Environmental Planning, sponsored by the Sarasota County Economic Development Corporation and Mote Marine Laboratory, September 2005, Sarasota, Florida.
- Bohlman, S. A., W. Laurance, S. Laurance, H. Nascimento, P. Fearnside, and A. Andrade. "Soil effects on community floristic composition and individual species abundances in central Amazonia." Annual Meeting, Association for Tropical Biology, July 2005, Uberlandia, Brazil.
- Bohlman, S. A. "Seasonal and interannual canopy changes on Barro Colorado Island derived from remote sensing (Better living through aerial photographs)". Center for Tropical Forest Science Symposium, June 2005, Panama City, Panama.
- Bohlman, S. A. "El bosque visto desde le cielo." Presentation to Smithsonian Tropical Research Institute education department and guides. May 2005, Panama City, Panama.
- Bohlman, S. A. "Remote sensing of tropical forests: bridging images and field data." 2nd Smithsonian Geographic Information Systems (GIS) Conference, February 2005, Washington, D. C. (poster).
- Bohlman, S. A. and R. Grotefendt. "Large tree species composition, sun-exposed crown area and growth on Barro Colorado Island, Panama". Center for Tropical Forest Science Symposium, August 2004, Ilan, Taiwan (poster).
- Bohlman, S. A. "Landscape patterns and environmental determinants of deciduousness in tropical forests in Panama." Annual Meeting, Ecological Society of America, August 2004, Portland, Oregon.
- Bohlman, S. A. and R. Grotefendt. "Sun-exposed crown area and large tree growth on Barro Colorado Island, Panama". Annual Meeting, Association for Tropical Biology, July 2004, Miami, Florida.
- Bohlman, S. A. and D. Lashlee. "High spatial and spectral resolution remote sensing of Rio Chagres Forests: An applied example of mapping tropical tree species, phenology and carbon uptake capacity." Conference: Rio Chagres: A Multi-disciplinary Profile of a Tropical Watershed, Feb 2003, Gamboa, Panama.
- Bohlman, S. A. and D. Lashlee. "Remote sensing of seasonal changes, light dynamics and species distributions in tropical forests". September 2002, Army Corps of Engineers Yuma Proving Ground, Yuma, AZ.
- Bohlman, S. A. "Remote sensing of seasonality in tropical forest canopies". 3rd International Canopy Conference, June 2002, Cairns, Australia.
- Bohlman, S. "Remote sensing of tropical forest deciduousness at the Parque Metropolitano Canopy Crane, Panama." 8th Annual Wind River Crane Conference, June 2002, Carson, Washington.
- Bohlman, S. A. "Remote sensing can be used to measure deciduousness in tropical forests".

 Annual Meeting, Association for Tropical Biology, July 2002, Panama City, Panama
- Bohlman, S. A. "Remote sensing of absorbed light and primary production in semi-deciduous tropical forest canopies in Panama." Annual Meeting, Ecological Society of America, August 2001, Madison, Wisconsin.
- Bohlman, S. A. "The relationship between seasonal changes in canopy reflectance and phenology in two tropical forests in Panama." Annual Meeting, Ecological Society of America, August 2000, Snowbird, Utah (poster presentation).
- Bohlman, S. A. and R. Condit. "Allometric equations to predict canopy structure". 2nd Biennial Meeting of the Center for Tropical Forest Science, July 1998, Washington, D.C.

Bohlman, S. A. and N. M. Nadkarni. "Soil and microclimate conditions within the canopy and on the forest floor of a tropical forest." Annual Meeting, Ecological Society of America, July 1991, San Antonio, Texas.