**Laura duncanson**

Geographical Sciences, University of Maryland, College Park

Laura Duncanson is an Assistant Professor of Geographical Sciences at the University of Maryland, College Park. She received her B.Sc. Hons. from Queen’s University if Kingston, Ontario, MSc at the University of Victoria, and PhD from the University of Maryland, College Park in 2015. Her research focuses on using lidar remote sensing for biomass mapping, ecological studies, and policy relevant applications. She has worked with spaceborne lidar for over a decade starting with ICESat’s GLAS, and has worked for the past five years on algorithm development for GEDI’s biomass products. She was a NASA Postdoctoral Program (NPP) fellow at NASA Goddard from 2015-2017, and many of her projects involve collaborations between the University of Maryland and NASA Goddard. She sits on the science teams of NASA’s Carbon Monitoring System and Arctic Boreal Vulnerability Experiment, is project scientist for the bilateral ESA-NASA Multi-Mission Algorithm and Analysis Platform being developed for collaborative algorithm development and lidar/SAR biomass mapping, and is co-lead of the Committee for Earth Observing Satellites (CEOS) Working Group on Calibration and Validation (WGCV) Land Product Validation (LPV) Biomass protocol. In addition to her science and advisory roles, she is an active member of the international biomass community and coordinates monthly telecons for an ad hoc group of scientists representing biomass-relevant missions and field plot networks, including ICESat-2, GEDI, NISAR, ESA BIOMASS and JAXA’s MOLI and ALOS4. Beyond biomass mapping she also has active grants relating forest structure to biodiversity, forest degradation monitoring, and lidar/SAR fusion applications.

**Experience**

2019 – present Assistant Professor University of Maryland, College Park

2017-2019 Assistant Research Professor University of Maryland, College Park

2015-2017 NASA NPP Fellow NASA Goddard Space Flight Center

2010-2015 PhD University of Maryland, College Park

2007-2009 MSc University of Victoria, Canada

2003-2007 BSc Hons. Queen’s University, Canada

**publications**

**Duncanson**, Neuenschwander et al., Biomass Estimation from Simulated GEDI, ICESat-2 and NISAR Across Environmental Gradients in Sonoma County, California. 2020, Remote Sensing of Environment

Dubayah, R., Blair, J.B., Goetz, S., Fatoyinbo, L., Hansen, M., Healey, S., Hofton, M., Hurtt, G., Kellner, J., Luthcke, S., Armston, J., Tang, H., **Duncanson, L.**, Hancock, S., Jantz, P., Marselis, S., Patterson, P., Qi, W., Silva, C. 2020. The Global Ecosystem Dynamics Investigation: High-resolution laser ranging of the Earth’s forests and topography. Science of Remote Sensing. 1, 100002.

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Hancock, S., Armston, J., Hofton, M., Sun, X., Tang, H., **Duncanson, L.I.**, Kellner, J.R. and Dubayah, R., 2019. The GEDI Simulator: A Large‐Footprint Waveform Lidar Simulator for Calibration and Validation of Spaceborne Missions. *Earth and Space Science*, *6*(2), pp.294-310.

Chave, J., Davies, S.J., Phillips, O.L., Lewis, S.L., Sist, P., Schepaschenko, D., Armston, J., Baker, T.R., Coomes, D., Disney, M. and **Duncanson, L.**, 2019. Ground Data are Essential for Biomass Remote Sensing Missions. Surveys in Geophysics, pp.1-18.

**Duncanson, L.**, and Dubayah, R. Monitoring Individual Tree Change with Airborne Lidar. 2018. Ecology and Evolution, 8, 10, 5079-5089.

**Duncanson, L**., Huang, W., Johnson, K., Swatantran, A., McRoberts, R., Dubayah, R. **2017**. Implications of allometric model selection for county-level biomass mapping. Carbon Balance and Management, *12, 1, 1-11.*

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**Duncanson, L.,**Rourke, O., Dubayah, R.**2015**.Small sample sizes yield biased allometric equations in temperate forests. Scientific Reports. 5, 17153. doi:10.1038/srep17153

**Duncanson, L.**, Dubayah, R., & Enquist, B. 2015. Assessing the general patterns of forest structure: Quantifying tree and forest allometric scaling relationships in the United States. Global Ecology & Biogeography. doi: 10.1111/geb.12371

**Duncanson, L.**, Dubayah, R., Cook, B., Rosette, J., & Parker, G. 2015. The Importance of Spatial Detail: Assessing the Utility of Individual Crown Information and Scaling Approaches for Lidar-based Biomass Density Estimation. Remote Sensing of Environment, 168, 102-112.

**Duncanson, L.**, Cook, B., Hurtt, G., Dubayah, R. 2014.An efficient, multi-layered crown delineation algorithm for mapping individual tree structure across multiple ecosystems.’ Remote Sensing of Environment, 154, 378-386.

**Duncanson, L.I**., Niemann, K.O., & Wulder, M.A. 2010. **I**ntegration of GLAS and Landsat TM data for aboveground biomass estimation. *Canadian Journal of Remote Sensing*, 36, 2, 129-141.

Fatoyinbo, L., Pinto, N., Hofton, M., Simard, M., Blair, B., Saatchi, S., Lou, Y., Dubayah, R., Hensley, S., Armston, J., **Duncanson, L.,**Lavalle, M. 2017. The 2016 NASA AfriSAR campaign: Airborne SAR and Lidar measurements of tropical forest structure and biomass in support of future satellite missions. IEEE Geoscience and Remote Sensing Symposium (IGARSS), 4286-4287.

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