VERONIKA LEITOLD

Curriculum Vitae

CONTACT

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Washington, DC 20016

EDUCATION

BRAZILIAN NATIONAL SPACE RESEARCH INSTITUTE (INPE)
São José dos Campos, SP
M.S. Remote Sensing, Apr 2014

<u>Thesis topic</u>: *Airborne lidar-based estimates of tropical forest structure and ground topography in a mountainous area of the Brazilian Atlantic Forest*

HARVARD UNIVERSITY
Cambridge, MA
B.A. Earth Sciences, May 2009

<u>Thesis topic</u>: *Canopy structure and function in the Tapajós National Forest in Equatorial Amazonia, Brazil* (cum laude in field)

COMPETENCIES

Languages: fluent in Portuguese
intermediate in Spanish
bilingual in English/ Hungarian

Computer: ArcGIS, QGIS, ENVI, programming in R, Python, GitHub, Google Earth Engine, LASTools, ImageJ, MS Office

Technical: image processing
geospatial analysis
data visualization
database management
scientific writing
& presentation

Fieldwork: forest inventory
plant monitoring
sample & data collection
navigation & mapping
experiment setup & maintenance
terrestrial laser scanning

REFERENCES

Available upon request

CAREER OBJECTIVE

Purpose-driven research scientist with nearly ten years of experience using high-resolution laser scanning data, satellite imagery, and field-based measurements to study tropical forest ecosystem structure and function. Aiming to leverage my geographical, analytical and remote sensing skill set to advance the scientific understanding and to help find sustainable solutions to real-world problems.

PROFESSIONAL EXPERIENCE

FACULTY RESEARCH SPECIALIST   *2020/Jun - Present*
University of Maryland, Geographical Sciences, College Park, MD
- ✦ Use space-based lidar data from the Global Ecosystem Dynamics Investigation (GEDI) to assess the effectiveness of protected areas worldwide at preserving forest biomass and carbon

FOREST INVENTORY & ANALYSIS CONSULTANT   *2020/Mar - 2021/Mar*
US Forest Service International Programs, Puerto Rico
- ✦ Analyze multi-temporal terrestrial and airborne laser scanner data to characterize changes in 3D forest structure, canopy cover, and forest recovery processes following 2017 hurricane disturbance in Puerto Rico

GEOSPATIAL RESEARCH AIDE   *2018/Dec - 2020/Jan*
Michigan State University, East Lansing, MI
- ✦ Used GIS software and R programming to process and analyze airborne lidar data (NEON-AOP) from 20 different eco-climatic regions of the USA; Quantified forest biophysical properties to understand forest function

RESTORATION FIELD ASSISTANT   *2019/Mar - 2019/Aug*
Research Corporation of the University of Hawaii, Hilo, HI
- ✦ Monitored plant growth and survival, seed production, litter fall and phenology, and conducted tree planting & inventories in 20 permanent plots in UH Hilo's Hybrid Ecosystem Forest Restoration Experiment

REMOTE SENSING SCIENTIST   *2014/Dec - 2018/Jan*
NASA Goddard Space Flight Center, Greenbelt, MD
- ✦ Consolidated, managed, processed and analyzed multi-temporal airborne lidar data from 15+ study sites across the Brazilian Amazon forest
- ✦ Mapped and quantified forest disturbance and recovery processes over large areas (1,000ha) to aid ecosystem model predictions
- ✦ Analyzed time series of satellite imagery to evaluate land cover change
- ✦ Led fieldwork in Brazil to validate lidar data and quantify carbon loss

FACULTY RESEARCH ASSISTANT   *2016/Aug - 2018/Jan*
Earth System Science Interdisciplinary Center (ESSIC), College Park, MD
- ✦ Teaching Practicum at the University of Maryland: *Introduction to Human Dimensions of Global Change* (TA, undergraduate course, Spring/2017)
- ✦ Attended graduate-level courses in Geographical Sciences at UMD

ECOLOGY RESEARCH TECHNICIAN   *2009/Aug - 2012/Jan*
The University of Arizona, Tucson, AZ
- ✦ Conducted periodic field campaigns in equatorial Amazonia to survey permanent forest plots with ground-based profiling lidar & implemented field experiments to study vegetation structure and light distribution in the forest canopy; Created workflows for data processing, analysis, and interpretation

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FIELDWORK EXPERIENCE

Puerto Rico
Terrestrial Laser Scanning in forest inventory plots
March 2020

Big Island, HI, USA
Hybrid Ecosystem Forest Restoration Experiment
Spring/Summer 2019

Tapajós Forest, PA, Brazil
Forest survey and tree mortality mapping
July 2016

Kourou, French Guiana
Functional Ecology of Tropical Rainforests thematic school
March 2016

Atlantic Rainforest, SP, Brazil
Topography survey and forest biometry measurements
Summer 2013

Equatorial Amazonia, Brazil
Periodic data collection campaigns at various sites
2009–2012

Tapajós Forest, PA, Brazil
Amazon-PIRE Tropical Ecology field course
Summer 2008

Harvard Forest, MA, USA
Field Research in Ecology and Conservation semester course
Spring 2007

Queensland, Australia
Rainforest to Reef geology summer field course
Summer 2006

Lake Balaton, Hungary
Grape harvest in family vineyards
Annually in Aug/Sep

INTERESTS

Conservation & Sustainable use of natural resources
Restorative agriculture
Ecosystem resilience
Maps & Data visualization
Drawing & Calligraphy
Trail running/hiking
Travel & Foreign cultures

LIST OF PUBLICATIONS

Tracking the rates and mechanisms of canopy damage and recovery following Hurricane Maria using multitemporal lidar data
Leitold V, Morton DC, Martinuzzi S, Paynter I, Uriarte M, Keller M, et al. Ecosystems, https://doi.org/10.1007/s10021-021-00688-8 (2021)

Estimation of coarse dead wood stocks in intact and degraded forests in the Brazilian Amazon using airborne lidar
Scaranello M, Keller M, Longo M, dos-Santos MN, **Leitold V**, Morton DC, Pinagé ER and Espírito-Santo FDB. Biogeosciences, 16, 3457-3474 (2019)

El Niño drought increased canopy turnover in Amazon forests
Leitold V, Morton DC, Longo M, dos-Santos MN, Keller M, Scaranello M. New Phytologist, 219: 959-971 (2018)

Aboveground biomass variability across intact and degraded forests in the Brazilian Amazon
Longo M, Keller M, dos-Santos MN, **Leitold V**, Pinagé ER, Baccini A, Saatchi S, et al. Global Biogeochemical Cycles, 30, 1639-1660 (2016)

Linking canopy leaf area and light environments with tree size distributions to explain Amazon forest demography
Stark SC, Enquist BJ, Saleska SR, **Leitold V**, Schietti J, Longo M, Alves LF, et al. Ecology Letters, doi: 10.1111/ele.12440 (2015)

Airborne lidar-based estimates of tropical forest structure in complex terrain: opportunities and trade-offs for REDD+
Leitold V, Keller M, Morton DC, Cook BD, and Shimabukuro YE. Carbon Balance and Management, 10:3 (2015)

Amazon forest carbon dynamics predicted by profiles of canopy leaf area and light environment
Stark SC, **Leitold V**, Wu J, Hunter MO, Castilho CV, Costa FRC, McMahon SM, Parker GG, et al. Ecology Letters, 15, 1406-1414 (2012)

EVENTS & PRESENTATIONS

XVIII Brazilian Remote Sensing Symposium, Santos, SP, Brazil. May 2017. *Increase in canopy turnover during El Niño drought conditions in Amazon forests from multi-temporal airborne lidar.* (Oral presentation)

II Sustainable Landscapes Brazil Workshop, Bragança Paulista, SP, Brazil. May 2016. *Beyond carbon: Forest composition in logged and burned forests.* (Oral presentation)

2015 AGU Fall Meeting, San Francisco, CA, USA. Dec 2015. *Changes in Amazon Forest Structure and Canopy Illumination from Multi-temporal lidar Data.* (Poster presentation)

XVII Brazilian Remote Sensing Symposium, João Pessoa, PB, Brazil. Apr 2015. *Landscape-scale variation in forest structure and biomass along an elevation gradient in the Atlantic Forest of the Serra do Mar, Brazil* (Oral presentation)

NASA Carbon Cycle & Ecosystems Joint Science Workshop, College Park, MD. Apr 2015. *Amazon forest dynamics from multi-temporal airborne lidar data.* (Poster presentation)

XVI Brazilian Remote Sensing Symposium, Foz do Iguaçu, PR, Brazil. Apr 2013. *Study of the spatial association between burned areas and deforestation in the Eastern Amazon, Pará.* (Poster presentation)