

Michael Andrew Lefsky

Dept. of Ecosystem Science and Sustainability
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Colorado State University
Fort Collins, CO 80523-1472

EDUCATION AND EMPLOYMENT

Professional Preparation

Bard College	Environmental Science	BA, 1989
University of Virginia	Environmental Science	PhD, 1997

Appointments

2015-2022	Department of Ecosystem Science and Sustainability Full Professor, Colorado State University
2008-2015	Department of Ecosystem Science and Sustainability Associate Professor, Colorado State University
2002-2008	Assistant Professor, Forest, Rangeland, and Watershed Stewardship, Colorado State University
2000-2002	Research Assistant Professor, Forest Science, Oregon State University
1997-2000	Postdoctoral Associate, USFS Pacific Northwest Research Station

PUBLISHED WORKS

Refereed Journal Articles:

- Xuehai Tang, Qingfeng Huang, Michael A. Lefsky, Lulu Huang & Wenyong Wu (2021) Dividing the Topographical Advantage of Forestland by Spatial Analysis and the Analytic Hierarchy Process, *Journal of Sustainable Forestry*, 40:3, 263-280, DOI: 10.1080/10549811.2020.1751207
- Kampf, S. K., Burges, S. J., Hammond, J. C., Bhaskar, A., Covino, T. P., Eurich, A., et al. (2020). The case for an open water balance: Re-envisioning network design and data analysis for a complex, uncertain world. *Water Resources Research*, 56, e2019WR026699. <https://doi.org/10.1029/2019WR026699>
- Almeida, D. R. A., Stark, S. C., Schietti, J., Camargo, J. L. C., Amazonas, N. T., Gorgens, E. B., Rosa, D. M., Smith, M. N., Valbuena, R., Saleska, S., Andrade, A., Mesquita, R., Laurance, S. G., Laurance, W. F., Lovejoy, T. E., Broadbent, E. N., Shimabukuro, Y. E., Parker, G. G., Lefsky, M., Silva, C. A., and Brancalion, P. H. S.. 2019. Persistent effects of fragmentation on tropical rainforest canopy structure after 20 yr of isolation. *Ecological Applications* 29(6):e01952.10.1002/eap.1952
- Filippelli, Steven K., Michael A. Lefsky, and Monique E. Rocca. "Comparison and integration of lidar and photogrammetric point clouds for mapping pre-fire forest structure." *Remote Sensing of Environment* 224 (2019): 154-166.
- Helmer, E., Ruzycki, T., Wilson, B., Sherrill, K., Lefsky, M., Marcano-Vega, H., ... & Rufenacht, B. (2018). Tropical deforestation and recolonization by exotic and native trees: Spatial patterns of tropical forest biomass, functional groups, and species counts and links to stand age, geoclimate, and sustainability goals. *Remote Sensing*, 10(11), 1724.
- Kampf, S. K., Faulconer, J., Shaw, J. R., Lefsky, M., Wagenbrenner, J. W., & Cooper, D. J. (2018). Rainfall thresholds for flow generation in desert ephemeral streams. *Water Resources Research*.
- Lefsky, M. A., Saleska, S. R., & Shimabukuro, Y. E. (2017). LiDAR and DTM Data from Forested Land Near Manaus, Amazonas, Brazil, 2008. ORNL DAAC, Oak Ridge, Tennessee, USA.
- Lefsky, M. A., Saleska, S. R., & Shimabukuro, Y. E. (2017). LiDAR and DTM Data from Tapajos National Forest in Para, Brazil, 2008. ORNL DAAC, Oak Ridge, Tennessee, USA.
- Gwenzi, D., & Lefsky, M. A. (2017). Spatial Modeling of Lidar-Derived Woody Biomass Estimates Collected Along Transects in a Heterogeneous Savanna Landscape. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 10(1), 372-384.
- Gwenzi, D., Helmer, E. H., Zhu, X., Lefsky, M. A., & Marcano-Vega, H. (2017). Predictions of tropical forest biomass and biomass growth based on stand height or canopy area are improved by Landsat-scale phenology across Puerto Rico and the US Virgin Islands. *Remote Sensing*, 9(2), 123. Zhu, X., Helmer, E.

- H., Gao, F., Liu, D., Chen, J., & Lefsky, M. A. (2016). A flexible spatiotemporal method for fusing satellite images with different resolutions. *Remote Sensing of Environment*, 172, 165-177.
- Kampf, S. K., & Lefsky, M. A. (2015). Peak flow transition from snowmelt to rainfall dominance along the Colorado Front Range: Historical patterns, trends, and lessons from the 2013 Colorado Front Range floods. *Water Resources Research*.
- Hunter, M. O., Keller, M., Morton, D., Cook, B., Lefsky, M., Ducey, M., ... & Schiatti, J. (2015). Structural Dynamics of Tropical Moist Forest Gaps. *PloS one*, 10(7), e0132144.
- Park, T., Kennedy, R. E., Choi, S., Wu, J., Lefsky, M. A., Bi, J., ... & Knyazikhin, Y. (2014). Application of Physically-Based Slope Correction for Maximum Forest Canopy Height Estimation Using Waveform Lidar across Different Footprint Sizes and Locations: Tests on LVIS and GLAS. *Remote Sensing*, 6(7), 6566-6586.
- Ni, Xiliang, et al. "Allometric scaling and resource limitations model of tree heights: Part 3. Model optimization and testing over continental China." *Remote Sensing* 6.5 (2014): 3533-3553. Choi, S., Ni, X., Shi, Y., Ganguly, S., Zhang, G., Duong, H.V., Lefsky, M.A., Simard, M., Saatchi, S.S., Lee, S., Ni-Meister, W., Piao, S., Cao, C., Nemani, R.R., Myneni, R.B. (2013) Allometric Scaling and Resource Limitations Model of Tree Heights: Part 2. Site Based Testing of the Model. *Remote Sensing* 5:1 202-223
- Shi, Y., Choi, S., Ni, X., Ganguly, S., Zhang, G., Duong, H.V., Lefsky, M.A., Simard, M., Saatchi, S.S., Lee, S., Ni-Meister, W., Piao, S., Cao, C., Nemani, R.R., Myneni, R.B. (2013) Allometric Scaling and Resource Limitations Model of Tree Heights: Part 1. Model Optimization and Testing over Continental USA. *Remote Sensing* 5:1 284-306
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- Duong, H.V., Lefsky, M.A., Ramond, T., Weimer, C (2012) The Electronically Steerable Flash Lidar: A Full Waveform Scanning System for Topographic and Ecosystem Structure Applications IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING Volume: 50 Issue: 11 Pages: 4809-4820 DOI: 10.1109/TGRS.2012.2193588
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- Lefsky, M., Keller, M., Pang, Y., de Camargo, P., & Hunter, M. (2007). Revised method for forest canopy height estimation from Geoscience Laser Altimeter System waveforms. *Journal of Applied Remote Sensing*, *1*
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- fine-scale environmental heterogeneity on net ecosystem production over a temperate coniferous forest landscape. *Tellus Series B-Chemical and Physical Meteorology*, 55, 657-668
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- Means, J., Acker, S., Harding, D., Blair, J., Lefsky, M., Cohen, W., Harmon, M., & McKee, W. (1999). Use of large-footprint scanning airborne lidar to estimate forest stand characteristics in the Western Cascades of Oregon. *Remote Sensing of Environment*, 67, 298-308

RESEARCH FUNDING

Since 2002: 22 grants (15 as PI) for a total of \$5,500,000 (\$4,300,000 as PI). Major funding sources: NASA (\$3,600,000), NSF (\$1,122,000), USDA Forest Service (\$642,000)

OUTREACH

University committees

Committee on Faculty Governance, College Computer Committee (Chair), Interdisciplinary Graduate Certificate in Geospatial Science (Director)

Professional affiliations and activities

Editorial Board

Associate Editor, Journal of Applied Remote Sensing
Associate Editor, Canadian Journal of Remote Sensing

Meeting Organization

Scientific Advisory Board member, NATSCAN - Laser-Scanners for Forest and Landscape Assessment, Monitoring Science & Technology Symposium, Silvascan Conference

Grant Review Panels

NASA Large Scale Biosphere-Atmosphere Experiment, USDA Managed Ecosystems Program, NASA New Investigators Program, NASA Remote Sensing Science Program, NASA ACCESS Program, NASA Interdisciplinary Science Program, NASA Cryosphere Program, NASA Venture Class Mission Program

Memberships in professional societies

American Geophysical Union, American Society for Photogrammetry and Remote Sensing, Ecological Society of America

OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH

NEON Airborne Observation Platform Advisory Group, 2009-

NASA ICESat Satellite Science Definition Team, 2010-2015

NASA ICESat Satellite Science Definition and Science Team, 2006-2013

Team Member, NASA Advanced Earth Science Mission Concept Study for Vegetation 3D Structure, Biomass and Disturbance, 2006

Working group coordinator, ISPRS Commission VII: Theory and experiments in radar and lidar remote sensing"