Curriculum vitae (Brown University Format)
Updated January 8, 2020
current publications: kellnerlab.org/publications

1. Name, position, academic department:

James R. Kellner
Peggy and Henry D. Sharpe Jr. Assistant Professor of Environmental Studies
Assistant Professor of Ecology and Evolutionary Biology and Environment and Society
Department of Ecology and Evolutionary Biology
Institute at Brown for Environment and Society
Brown University
Box 1951, Providence, RI, 02912 USA

2. Address: available upon request

3. Education:

2000 B.S. School of Tropical Biology: James Cook University (Queensland, Australia).

2005 M.S. Ecology and Evolutionary Biology: Dartmouth College (Hanover, New Hampshire).

2008 Ph.D. Plant Biology: University of Georgia (Athens, Georgia).

4. Professional appointments

2008 – 2010	Postdoctoral Scientist, Carnegie Institution for Science, Stanford, California.
2011 – 2013	Assistant Professor, Department of Geographical Sciences, University of Maryland, College Park.
2013 – present	Assistant Professor of Ecology and Evolutionary Biology and Environment and Society, Brown University.
2016 – present	Peggy and Henry D. Sharpe Jr. Assistant Professor of Environmental Studies. Brown University

5. Completed publications

5.a. Refereed journal articles

2003 **Kellner, J. R.** and R. A. Alford. The ontogeny of fluctuating asymmetry. American Naturalist 161:931-947.

2008 Hubbell, S. P., F. He, R. Condit, L. Borda-de-Agua, **J. Kellner**, and H. ter Steege. 2008. How many tree species are there in the Amazon and how many of them will go extinct? Proceedings of the National Academy of Sciences of the United States of America 105:11498-11504.

2008 Hubbell, S. P., F. He, R. Condit, L. Borda-de-Agua, **J. Kellner**, and H. ter Steege. 2008. Reply to Feeley and Silman: Extinction risk estimates are approximations but are not invalid. Proceedings of the National Academy of Sciences of the United States of America 105:E122-E122.

2009 **Kellner, J. R.**, D. B. Clark, and S. P. Hubbell. Pervasive canopy dynamics produce short-term stability in a tropical rain forest landscape. Ecology Letters 12:155-164.

2009 **Kellner, J. R.** and G. P. Asner. Convergent structural responses of tropical forests to diverse disturbance regimes. Ecology Letters 12:887-897.

2009 **Kellner, J. R.**, D. B. Clark, and M. A. Hofton. Canopy height and ground elevation in a mixed-land-use lowland Neotropcial rain forest landscape. Ecology 90:3274.

2009 **Kellner, J. R.**, D. B. Clark, and M. A. Hofton. Canopy height and ground elevation in a mixed-land-use lowland Neotropical rain forest landscape. Ecological Archives E090-233.

2010 Vitousek, P. M., M. A. Tweiten, **J. Kellner**, S. C. Hotchkiss, O. A. Chadwick, and G. P. Asner. Top-Down Analysis of Forest Structure and Biogeochemistry across Hawaiian Landscapes. Pacific Science 64:359-366.

2011 **Kellner, J. R.**, G. P. Asner, K. M. Kinney, S. R. Loarie, D. E. Knapp, T. Kennedy-Bowdoin, E. J. Questad, S. Cordell, and J. M. Thaxton. Remote analysis of biological invasion and the impact of enemy release. Ecological Applications 21:2094-2104.

2011 **Kellner, J. R.**, G. P. Asner, P. M. Vitousek, M. A. Tweiten, S. Hotchkiss, and O. A. Chadwick. Dependence of forest structure and dynamics on substrate age and ecosystem development. Ecosystems 14:1156-1167.

2012 Clark, D. B. and **J. R. Kellner**. Tropical forest biomass estimation and the fallacy of misplaced concreteness. Journal of Vegetation Science 23 (6) 1191 - 1196

2012 **Kellner, J. R.**, G. P. Asner, J. Thaxton, K. M. Kinney, T. Kennedy-Bowdoin, D. Knapp, E. J. Questad, and S. Ambagis. Historical land-cover classification for conservation and management in Hawaiian subalpine drylands. Pacific Science 66 (4) 457 - 466.

2013 Silva, C. E., **J. R. Kellner**, D. B. Clark, and D. A. Clark. 2013. Response of an old-growth Neotropical rain forest to persistent high temperature and drought. Global Change Biology **19** 3423 - 3434.

2013 Thomas, R. Q., **J. R. Kellner**, D. B. Clark, and D. R. Peart. Low mortality in tall tropical trees. Ecology 94 920 - 929

2013 Asner, G. P., **J. R. Kellner**, T. Kennedy-Bowdoin, D. E. Knapp, C. Anderson and R. E. Martin. Forest canopy gap distributions in the southern Peruvian Amazon. PLOS One.

2014 Cavanaugh, K. C., **J. R. Kellner**, A. J. Forde, D. S. Gruner, J. D. Parker, W. Rodriguez and I. C. Feller. Poleward expansion of mangroves is a threshold response to decreased frequency of extreme cold events. Proceedings of the National Academy of Sciences of the United States of America. 111 (2) 723 - 727.

2014 Levy, O., B. A. Ball, B. Bond-Lamberty, K. S. Cheruvelil, A. O. Finley, N. Lottig, S. Punyasena, J. Xiao, J. Zhou, L. B. Buckley, J. Clark, C. T. Filstrup, T. Keitt, **J. R. Kellner**, A. K. Knapp, A. Richardson, C. Stow, D. Tcheng, M. Toomey, R. Vargas, J. W. Voordeckers, T. Wagner, and J. W. Williams. Approaches to advancing scientific understanding of macrosystems ecology. Frontiers in Ecology and the Environment 12 (1) 15 - 23.

2014 Heffernan, J. B., P. Soranno, M. Angilletta, L. Buckley, W. K. Dodds, D. Gruner, T. Keitt, **J. R. Kellner**, J. Kominoski, A. Rocha, J. Xiao, T. Harms, S. Goring, L. Koenig, B. McDowell, H. Powell, A. Richardson, C. Stow, R. Vargas, and K. Weathers. Macrosystems Ecology:understanding ecological patterns and processes at continental scales. Frontiers in Ecology and the Environment 12 (1) 5 - 14.

2014 **Kellner, J. R.**, and G. P. Asner. Winners and losers in the competition for space in tropical forest canopies. Ecology Letters 17 566 - 565.

2014 Cavanaugh, K. C., **J. R. Kellner**, A. J. Forde, D. S. Gruner, J. D. Parker, W. Rodriguez and I. C. Feller. Reply to Giri and Long: Freeze-mediated expansion of mangroves does not depend on whether expansion is emergence or reemergence. Proceedings of the National Academy of Sciences of the United States of America. 111 (15) E1449.

2014 Questad, E. J., **J. R. Kellner**, K. Kinney, S. Cordell, G. P. Asner, J. Thaxton, Diep, J., Uowolo, A., Brooks, S., Inman-Narahari, N., Evans, S. A. and B. Tucker. Mapping habitat suitability for at-risk plant species and its implications for restoration and reintroduction. Ecological Applications. 24 (2) 385 - 395.

2014 Tweiten, M., S. Hotchkiss, P. M. Vitousek, **J. R. Kellner**, O. Chadwick, and G. P. Asner. Resilience against exotic species invasion in a tropical montane forest. *Journal of Vegetation Science*.

2015 Cavanaugh, K. C., Parker, J. D., Cook-Patton, S. C., Feller, I. C., Williams, A. P. and **J. R. Kellner**. Integrating physiological threshold experiments with climate modeling to project mangrove species' range exmansion. Global Change Biology 21 (5) 1928 - 1938.

2015 Chynoweth, M. W., Lepczyk, C. A., Litton, C. M., Hess, S. C., **Kellner, J. R.** and S. Cordell. Home range use and movement patterns of non-native feral goats in a tropical island montane dry landscape. PLoS One. 10 (3) e0119231.

2015 Kinney, K. M., Asner, G. P., Cordell, S., Chadwick, O. A., Heckman, K., Hotchkiss, S., Jeraj, M., Kennedy-Bowdoin, T., Knapp, D. E., Questad, E. J., Thaxton, J. M., Trusdell, F. and **J. R. Kellner**. Primary succession on a Hawaiian dryland chronosequence. PLoS One 10 (6) e0123995.

2015 Baldeck, C. A., Asner, G. P., Martin, R. E., Anderson, C. B., Knapp, D. E., **Kellner, J. R.** and S. J. Wright. Operational tree species mapping in a diverse tropical forest with airborne imaging spectroscopy. PLoS One 10 (7) e0118403.

2017 **Kellner, J. R.** and S. P. Hubbell. Adult mortality in a low-density tree population using high-resolution remote sensing. Ecology 98(6) 1700 - 1709.

2017 Clark, D. B., Clark, D. A., Oberbauer, S. F. and **J. R. Kellner**. Multidecadal stability in tropical rain forest structure and dynamics across an old-growth landscape. PLoS One 12 (10) e0183819.

2018 Bastin J-F, Rutishauser E, **Kellner J. R.**, et al (2018) Pan-tropical prediction of forest structure from the largest trees. Global Ecology and Biogeography 27:1366–1383.

2018 Becknell, J. M., Porder, S., Hancock, S., Chazdon, R., Hofton, M., Blair, J. B. and **J. R. Kellner** Chronosequence predictions are robust in a Neotropical secondary forest, but plots miss the mark. Global Change Biology 24:933–943.

2018 **Kellner, J. R.** and S. P. Hubbell. Density-dependent adult recruitment in a low-density tropical tree. PNAS 115:11268–11273.

2019 Cushman, K. C., and **J. R. Kellner.** Prediction of forest aboveground net primary production from high-resolution vertical leaf-area profiles. Ecology Letters 22:538–546.

2019 **Kellner, J. R.**, Armston, J. D., Birrer, M., Cushman, K. C., Duncanson, L. I., Eck, C., Falleger, C., Imbach, B., Král, K., Krůček, M., Trochta, J., Vrška, T., and C. Zgraggen. New opportunities for forest remote sensing through ultra-high-density drone lidar. Surveys in Geophysics. 40(4): 959–977.

2019 Hancock, S., Armston, J., Hofton, M., Sun, X., Tang, H., Duncanson, L. I., **Kellner, J. R.**, and R. O. Dubayah. The GEDI simulator: A large-footprint waveform lidar simulator for calibration and validation of spaceborne missions. Earth and Space Science 6(2):294–310.

2019 Duncanson, L., Armston, J., Disney, M., Avitabile, V., Barbier, N., Calders, K., Carter, S., Chave, J., Herold, M., Crowther, T., Falkowski, M., **Kellner, J. R.**, Labriére, N., Lucas, R., MacBean. N., McRoberts, R. E., Meyer, V., Næsset, E., Nickeson, J. E., Paul, K. I., Phillips., O. L., Réjou-Méchain, M., Roman, M., Roxburgh, S., Saatchi, S., Schepashenko, D., Scipal, K., Whitehurst, A., Siqueira, P. R., and M. Williams. The importance of consistent validation of global forest aboveground biomass products. Surveys in Geophysics. 40(4):979–999.

2019 Patterson, P. L., Healey, S. P., Stahl, G., Saarela, S., Holm, S., Andersen, H., Dubayah, R. O., Duncanson, L., Hancock, S., Armston, J., **Kellner, J. R.**, Cohen, W. B., and Z. Yang. Statistical properties of hybrid estimators proposed for GEDI - NASA's Global Ecosystem Dynamics Investigation. Environmental Research Letters 14:0065007.

2019 **Kellner, J. R.** Albert, L. P., Burley, J. T., and K. C. Cushman. The case for remote sensing of individual plants. American Journal of Botany. 106(9):1–4.

2019 Clark, D. B., Ferraz, A., Clark, D. A., **Kellner, J. R.** Letcher, S. G., and S. Saatchi. Diversity, distribution and dynamics of very large trees across and old-growth lowland Neotropical rain forest landscape. PLoS One 14 (11) e0224896.

2020 VanValkenburgh, P., Cushman, K. C., Butters, L. J. C., Vega, C. R., Roberts, C., Kepler, C., and **J. R. Kellner.** Lasers without Lost Cities: Using UAV-mounted LiDAR to capture architectural complexity at Kuelap, Amazonas, Peru. Journal of Field Archaeology. In press.

5.b. Submitted journal articles

2019 Cushman. K. C., and **J. R. Kellner**. Inverted relationship between leaf area index and aboveground net primary productivity. Submitted to Nature Ecology and Evolution on September 20, 2019. Revision requested on December 10, 2019.

2019 Dubayah, R., Blair, J. B., Goetz, S., Fatoyinbo, L., Hansen, S., Healey, S., Hurtt, G., **Kellner, J. R.**, Luthcke, S., Armston, J., Tang, H. Duncanson, L., Hancock, S., Jantz, P., Marselis, S. M., Patterson, P., Qi, W., and C. Silva. The Global Ecosystem Dynamics Investigation: high-resolution laser ranging of the Earth's forests and topography. Submitted to Science of Remote Sensing on September 10, 2019.

2018 Kinney, K. M., Asner, G. P., Cordell, S., Chadwick, O. A., Heckman, K., Holitzi, T., Hotchkiss, S., Jeraj, M., Kennedy-Bowdoin, T., Knapp, D. E., Mead, L., Questad, E. J., Thaxton, J. M., Trusdell, F. and **J. R. Kellner**. Holocene vegetation change and fire history in a sub-alpine Hawaiian dryland. Submitted to Pacific Science on January 30, 2018. Revision requested on April 5, 2018.

2019 **Kellner, J. R.** Kendrick, J. O., and D. F. Sax. High-velocity upward shifts in vegetation fail to keep pace with temperature change. Submitted to Nature Communications on July 12, 2018. Revision requested on August 24, 2018.

2018 Lin, H., Tarnas, J. D., Mustard, J. F., Zhang, X., Wei, Y, Weixing, W., Klein, F., and **J. R. Kellner**. Dynamic aperature factor analysis/target transformation (DAFA/TT) for serpentine and Mg-carbonate mapping on Mars with CRISM near infrared data. Submitted to Journal of Geophysical Research-Planets on November 29, 2018.

2019 Duncanson, L., Neuenschwander, A., Hancock, S., Thomas, N., Fatoyinbo, T., Simard, M., Silva, C. A., Armston, J., Luthcke, S., Hofton, M., **Kellner, J. R.**, and R. Dubayah. Biomass estimation from simulated GEDI, ICESat-2 and NISAR across environmental gradients in Sonoma County, California. Submitted to Remote Sensing of Environment on November 13, 2019.

2019 Marselis, S., Abernethy, K., Alonso, A., Armston, J., Baker, T., Bastin, J. F., Bogaert, J., Boyd, D., Boeckx, P., Burslem, D., Chazdon, R., Clark, D. B., Coomes, D., Duncanson, L., Hancock, S., Hill, R., Hopkinson, C., Kearsley, E., **Kellner, J. R.**, Kenfack, D., Labrière, N., Lewis, S., Minor, D., Memiaghe, H., Monteagudo, A., Nilus, R., O'Brien, M., Phillips, O., Poulsen, J., Tang, H., Verbeeck, H., and R. Dubayah. Evaluating the Potential of Full-waveform Lidar for Mapping Pan-Tropical Tree Species Richness. Submitted to Global Ecology and Biogeography on December 29, 2019.

2019 Krůček, M., Král, K., A, Cushman, KC., Missarov, A., and **J. R. Kellner**. Automated segmentation of high-density drone lidar for large-area mapping of individual trees. Submitted to Remote Sensing on December 31, 2019.

5.c. Draft manuscripts in preparation for which I am the first or senior author

Cushman, K. C., Armston, J. D., Dubayah, R., Duncanson, L., Hancock, S.,Hofton, M. A., Král, K. Tang, H., and **J. R. Kellner**. Sensitivity of simulated GEDI waveforms to forest leaf area and implications for footprint aboveground biomass models.

Silva, C. E., Yang, X., and **J. R. Kellner.** Closing canopy energy budget reveals stress-induced shift in relationship between chlorophyll fluorescence and photosynthesis.

Albert, L. P., K. C. Cushman, Y. Zong, D. W. Allen, L. Alonso, H. Johnson, and **J. R. Kellner**. Reducing systematic error in high-resolution imaging of solar-induced fluorescence.

Kellner, J. R., Duncanson, L. I., Armston, J. A., Dubayah R. O., the GEDI Science Team, and numerous co-authors. Tentative title: Global aboveground biomass density algorithms for GEDI lidar.

5.d. Non-refereed journal articles

2019 Albert, L. P., K. C. Cushman, D. W. Allen, Y. Zong, L. Alonso, and **J. R. Kellner**. Stray light characterization in a high-resolution imaging spectrometer designed for solar-induced fluorescence. Proceedings Volume 10986, Algorithms, Technologies, and Applications for Multispectral and Hyperspectral Imagery XXV; 109860G.

5.e. Invited lectures

2010 **Kellner, J. R.** Remote sensing landscape fuel loads and an annual forb invasion. Western Society of Weed Science Annual Meeting. Waikoloa, HI.

2010 **Kellner, J. R.** and G. P. Asner. Transient canopy dynamics and the future of tropical forests. Ecological Society of America Annual Meeting. Pittsburgh, PA.

2012 **Kellner, J. R.** Remote sensing of tropical forests: new opportunities to characterize relationships between genomes, the environment, and individuals. Smithsonian Institution Center for Tropical Forest Science / Smithsonian Institution Global Earth Observatory Genomics Workshop.

2015 **Kellner. J. R.** High-spatial-resolution high-frequency remote sensing of ecosystems. Marine Biological Laboratory, Woods Hole.

2015 **Kellner, J. R.** A program to quantify the determinants of canopy photosynthesis at leaf, individual and ecosystem scales. Department of Ecology and Evolutionary Biology, University of Arizona.

2015 **Kellner, J. R.** The conceptual and scientific motivation for the Global Ecosystem Dynamics Investigation. American Geophysical Union Fall Meeting, San Francisco, CA.

2015 **Kellner, J. R.** A framework to quantify the determinants of canopy photosynthesis and carbon uptake using time series of chlorophyll fluorescence. American Geophysical Union Fall Meeting, San Francisco, CA.

2016 **Kellner, J. R.** High-resolution remote sensing of tropical forests for next-generation ecosystem science. NGEE-Tropics monthly meeting. September 6, 2016.

2016 **Kellner, J. R.** The Global Ecosystem Dynamics Investigation. NASA-Smithsonian Cal/Val workshop. June 1, 2016.

2017 **Kellner, J. R.** Declined. XVIII Brazilian Symposium on Remote Sensing. Sau Paulo, Brazil.

2017 **Kellner, J. R.** Associations between aboveground forest biomass and waveform lidar metrics: implications for modeling footprint-level biomass using Global Ecosystem Dynamics Investigation data. Jet Propulsion Laboratory, Pasadena, CA. June 7, 2017.

2017 **Kellner, J. R.** Bayesian inversion of SCOPE to quantify seasonal variation in NPQ at Harvard Forest. University of Nebraska, Lincoln. This meeting was hosted by Dr. John Gamon, and Sponsored by the European Space Agency Fluorescence Explorer (FLEX) advisory group. September 27, 2017.

2017 **Kellner, J. R.** GEDI: high-resolution laser ranging of Earth's forests and topography on ISS. Tanguro Ranch, Brasilia, Brazil. Workshop title: Intensification of the World's Largest Agriculture Frontier: Integrating Food Production and Environmental Integrity in a Changing Climate. Delivered by video conference on May 3, 2017.

2017 **Kellner, J. R.** Drone lidar as an alternative to airborne lidar. ISSI workshop on estimation of forest structure parameters from space. Bern, Switzerland. This was a joint meeting of members of the Science Teams of current and forthcoming space missions. It included representatives from NASA GEDI, the NASA-ISRO synthetic aperture radar (NISAR) mission, the European Space Agency P-band radar (BIOMASS) mission, the German Aerospace Center L-band (Tandem-L) radar mission, and the International Scientific Community. November 8, 2017.

2018 **Kellner, J. R.** High-resolution remote sensing and population dynamics in a low-density tree population. Arnold Arboretum at Harvard University. January 27, 2018

2018 **Kellner, J. R.** Integration of ultra-high-density lidar with large field plots for landscape scale demographic analysis. Smithsonian ForestGEO Workshop. Nové Hrady, Czech Republic. July 22, 2018.

5.f. Presentations at scientific meetings

2005 **Kellner, J. R.**, R. Q. Thomas, D. R. Peart, M. L. Clark, and D. B. Clark. Small-footprint LiDAR for individual-based tree demography in a Central American rain forest. SilviScan: LiDAR applications in forest assessment and inventory. Blacksburg, VA.

2006 **Kellner, J. R.** and S. P. Hubbell. Short-term population dynamics for a rain forest canopy tree. Ecological Society of America, Annual Meeting. Memphis, TN.

2007 **Kellner, J. R.** and S. P. Hubbell. 2007. Landscape controls on adult population dynamics for a rain forest canopy tree. Biennial meeting of the International Biogeography Society. Puerto de la Cruz, Spain.

2007 **Kellner, J. R.**, S. P. Hubbell, and D. B. Clark. Remote analysis of forest structure and dynamics using time series small footprint LiDAR in a lowland Neotropical rain forest. International Symposium on Remote Sensing of Environment, San Jose, Costa Rica.

2008 Cordell, S., G. P. Asner and J. M. Thaxton (presented by **J. R. Kellner** and S. Cordell). Annual report to funding agency. Strategic Environmental Research and Development Program, 2008. Washington DC.

2009 **Kellner, J. R.**, G. P. Asner, K. M. Kinney, S. R. Loarie, D. E. Knapp, T. Kennedy-Bowdoin, E. J. Questad, S. Cordell, and J. M. Thaxton. Seasonal phenology and vegetation community type mediate canopy phenology and fire fuel risks in tropical drylands. 2009. Strategic Environmental Research and Development Program Symposium. Washington DC.

2010 Cordell, S. and **J. R. Kellner**. The potential of restoration to break the grass/fire cycle in Dryland Ecosystems in Hawaii. Pacific Islands Region Threatened, Endangered and At-risk Species Workshop. Hosted by the Department of Defense and Strategic Environmental Research and Development Program. Honolulu, HI.

2015 **J. R. Kellner**, Katherine C. Cushman, Joseph Kendrick, Carlos E. Silva, Lucas Toh, Sandra Wiseman, Xi Yang. Brown Platform for Autonomous Remote Sensing: high-spatial-resolution high-frequency observations of the structure and condition of ecosystems. Ecological Society of America Annual Meeting, Baltimore, MD.

2015 **Kellner, J. R.** The conceptual and scientific motivation for the Global Ecosystem Dynamics Investigation. American Geophysical Union Fall Meeting, San Francisco, CA.

2015 **Kellner, J. R.** A framework to quantify the determinants of canopy photosynthesis and carbon uptake using time series of chlorophyll fluorescence. American Geophysical Union Fall Meeting, San Francisco, CA.

2016 **Kellner, J. R.** and the GEDI Science Team. Associations between aboveground forest biomass and waveform LiDAR metrics: implications for modeling footprint-level biomass using Global Ecosystem Dynamics Investigation data. American Geophysical Union Fall Meeting, San Francisco, CA.

2017 **Kellner, J. R.**, and the GEDI Science Team. Algorithm theoretical basis for GEDI level-4A footprint above ground biomass density. American Geophysical Union Fall Meeting, New Orleans, LA. December 12, 2017.

2018 **Kellner, J. R.** and the GEDI Science Team. Cross-validation and transferability performance of GEDI aboveground biomass models. ForestSAT, College Park, MD. October 4, 2018.

2019 **Kellner, J. R.**, Tang, H. and M. A. Hofton. Primary convener for oral and poster session: Active remote sensing of 3-D structure for ecosystem and surface topography studies. American Geophysical Union Fall Meeting, San Francisco, CA

6. Research grants:

6.a. Current grants:

2014 – 2021 Global Ecosystem Dynamics Investigator lidar. National Aeronautics and Space Administration. $212,226. Investigator: **James R. Kellner**. Lead investigator: R. O. Dubayah ($94,000,000 for total collaborative project)

2018 – 2020 RAPID: Quantifying the impact of a large, infrequent disturbance on landscape carbon balance: strengthening conceptual understanding of ecosystem carbon fluxes. National Science Foundation. $49,999. Lead investigator: **James R. Kellner**

2018 – 2020 Quantifying the impact of a large, infrequent disturbance on landscape carbon balance using lidar and imaging spectroscopy. National Aeronautics and Space Administration. $41,580. Lead investigator: **James R. Kellner**

6.b. Completed grants:

2007 Dissertation research: Remote analysis of canopy gap dynamics and limiting similarity in a lowland Neotropical rain forest. National Science Foundation Doctoral Dissertation Improvement Program. $9875. Lead investigator: Stephen P. Hubbell.

2011 – 2013 Causes and consequences of fire regimes through space and time in tropical dryland ecosystems. USDA Forest Service Joint Venture Agreement. $80,000. Lead investigator: **James R. Kellner**

2012 – 2015 Collaborative research: Remote sensing of foliar chemistry to reconstruct the genealogy of canopy trees in a Neotropical rain forest. National Science Foundation. $134,954. Investigator: **James R. Kellner**. Lead investigator: **James R. Kellner** ($399,662 for total collaborative project).

2012 – 2016 Collaborative research: Multi-scale drivers and effects of biotic change in the global mangrove saltmarsh ecotone. National Science Foundation. $61,510. Investigator: **James R. Kellner**. Lead investigator: Ilka Feller ($1,713,162 for total collaborative project).

2012 – 2017 Remote sensing technology for threatened and endangered plant species recovery. Department of Defense SERDP-ESTCP. $328,348. Investigator: **James R. Kellner**. Lead investigator: E. J. Questad ($1,422,766 for total collaborative project).

2014 – 2016 Dissertation Research: Drivers of carbon uptake in tropical forests: implications for the future of the global carbon sink. $21,120. Lead investigator: **James R. Kellner** (this was a National Science Foundation DDIG award that supported the Ph.D. research of my former student, Dr. Carlos Silva).

2014 – 2019 Collaborative research LTREB renewal: Tropical rain forest ecosystem responses to climatic forcings. National Science Foundation. $43,529. Investigator: **James R. Kellner**. Lead investigator: David B. Clark ($93,695 for total collaborative project).

7. Service

7.a. Service to the University

2011 *Graduate committee member* (University of Maryland)

2011 *Diversity committee member* (University of Maryland)

2013 Development of The Diversity of Life, a new foundational course in ecology and evolutionary biology at Brown University

2014 Undergraduate mentorship (BIOL 1950) Katherine Byron

2014 Undergraduate mentorship (UTRA and Mellon Mays Fellow) Aanchal Saraf

2014 Undergraduate thesis Phoebe Hopkins

2015 Undergraduate mentorship (UTRA) Lucas Toh Yuan Kun

2015 Discussion leader for Brown University First Readings program.

2016 Undergraduate thesis (second reader for Alex Swanson)

2016 Undergraduate thesis Aiden Schore

2016 Undergraduate mentorship (IBES fellowship) Lucas Toh Yuan Kun

2016 Member of the IBES committee on diversity and inclusion

2018 IBES cluster hire search committee (Sociology)

2018 EEB search committee (organismal biology)

2019 Undergraduate mentorship (UTRA) Anna Odell

2020 Undergraduate thesis Anna Odell (current)

2020 Undergraduate thesis Alexander Burdo (current)

2020 Undergraduate thesis Milla Shin (current)

7.b. Service to the profession

2011 NASA Airborne Science in Terrestrial Ecology Steering Group

2012 NASA Airborne Science in Terrestrial Ecology Steering Group

2019 Guest editor of special issue in *Remote Sensing*: Drone Remote Sensing

2019 Guest editor of special issue in *Environmental Research Letters*: Focus on the Global Ecosystem Dynamics Investigation: Research Applications and Policy Implications

2019 Primary convener of an organized session at the American Geophysical Union Fall Meeting: Active remote sensing of 3-D structure for ecosystem and surface topography studies.

I have served as a panel reviewer for NASA. I have served as a grant reviewer for the National Science Foundation, NASA, the Department of Energy, the US Department of Defense and the Belgium Federal Science Policy Office. I have provided peer review for numerous journals, including Acta Zoologica Fennica, Ecology, Ecological Applications, Ecosystems, Environmental Monitoring and Assessment, Environmental Research Letters, Functional Ecology, Journal of Ecology, Nature Geosciences, PNAS, Remote Sensing of Environment, and Science.

7.c. Service to the community

2009 Volunteer instructor for *Ka imi ike*, a program administered by the University of Hawaii to promote and retain Native Hawaiian and Pacific Islanders in STEM disciplines.

2010 Volunteer instructor for *Ka imi ike*, a program administered by the University of Hawaii to promote and retain Native Hawaiian and Pacific Islanders in STEM disciplines.

8. Academic honors

1999 Dr. R. Palmerston Rundle Prize for Biological Sciences at James Cook University.

2005 Dartmouth College Filene Teaching Award. “Awarded annually to the graduate teaching assistant who best exemplifies the qualities of a college educator.”

2007 Student Travel Grant. International Biogeography Society and National Science Foundation.

2007 Best student poster at International Biogeography Society biennial meeting, Puerto de la Cruz, Spain (shared with one other student).

2007 GeoEYE Award: Short-term population dynamics for a rain forest canopy tree using time series satellite remote sensing.

2016 Peggy and Henry D. Sharpe Jr. Assistant Professor of Environmental Studies (Brown University)

2016 Comfort and Urry Prize “… to members of the faculty who have provided exceptional guidance and support to students for their plans for life after Brown.” (Brown University)

2019 Dean's Award for Excellence in Undergraduate Teaching, Advising and Mentoring in the Biological Sciences at Brown University.

9. Teaching (since 2016)

2016 Instructor, BIOL1450 (Community Ecology). Brown University. 35 students.

2016 Instructor, BIOL0210 (Diversity of life). Brown University. 108 students.

2017 Instructor, BIOL2430 (Computational analysis of spatial data). Brown University. 9 students.

2017 Instructor, BIOL0210 (Diversity of life). Brown University. 147 students.

2018 Instructor, BIOL1450 (Community ecology). Brown University. 33 students (by application > 50 applicants)

2018 Instructor, BIOL0210 (Diversity of life). Brown University. 269 students.

2019 Instructor, BIOL0210 (Diversity of life). Brown University. 317 students.

I have supervised three completed Ph.D. theses. I am currently supervising two Ph.D. theses. I currently mentor one postdoctoral research associate, and am the primary mentor for two Brown University undergraduates completing senior thesis projects who are members of my lab. I am currently the second reader for two undergraduate theses. I am currently a primary advisor to 7 Brown University undergraduates, and a sophomore advisor to 1 Brown University undergraduate. I have mentored two senior theses and served as a second reader on multiple senior theses.

10. Placement of my students and postdocs

I have advised five Ph.D. students (two current, three completed) and four postdoctoral research scientists (one current, three completed). Of the four postdocs, I have had primary responsibility for two. The other two were co-advised.

1. Former postdoc Dr. Kyle Cavanaugh (primary advisee): tenure-track Assistant Professor in the Department of Geography at UCLA.

2. Current postdoc Dr. Loren Albert (primary advisee): secured five interviews for tenure-track positions during the most recent application season and is receiving requests to interview during the current application season.

3. Former postdoc Dr. Xi Yang (co-advised): tenure-track Assistant Professor in the Department of Environmental Sciences at the University of Virginia.

4. Former postdoc Dr. Justin Becknell (co-advised): a tenure-track Assistant Professor in the Department of Environmental Studies at Colby College.

5. Former Ph.D. student Dr. Kealohanuiopuna (Kealoha) Kinney: currently employed as a Ph.D. Research Ecologist the Institute for Pacific Islands Forestry of the USDA Forest Service Southwest Research Station in Hilo, Hawaii.

6. Former Ph.D. student Dr. Carlos Silva: currently employed as a postdoctoral research scientist at the University of Maryland, College Park, where he works on the Global Ecosystem Dynamics Investigation.

7. Former Ph.D. student Ms. Katherine Cushman: currently employed as a postdoctoral research scientist at the Smithsonian Tropical Research Institute. Ms. Cushman was awarded a Graduate Research Fellowship from the National Science Foundation based on a proposal that she and I wrote together. Ms. Cushman was also awarded a Presidential Fellowship by Brown University.