

K. Dana Chadwick, PhD

Water & Ecosystems Group (329F)
Jet Propulsion Laboratory

email: dana.chadwick@jpl.nasa.gov
web: <https://science.jpl.nasa.gov/people/kchadwic/>

POSITIONS

2021 – Scientist | Water & Ecosystems Group, NASA Jet Propulsion Laboratory
Mission Applications Lead, EAGLE-VSWIR Mission (2026- present)
Deputy Lead, PANGAEA Science Definition Team (2026- present)
EMIT DART Integrator (2026 - present)
Mission Applications Lead, [EMIT Mission](#) (2022- present)
Lead, [SBG High Frequency Timeseries Campaign](#) (2022- present)
VSWIR Terrestrial Vegetation Lead, [SBG Mission](#) (2024-2026)
Stakeholder Engagement Co-Lead, [US Greenhouse Gas Center](#) (2024-2026)
Co-I, Mission Applications Lead, [Carbon-I](#) ESE Proposal (2024-2026)

2026 – Visiting Associate Project Scientist | UCLA
Joint Institute for Regional Earth System Science and Engineering

2021 Research Associate | Integrative Biology & Geological Sciences, UT Austin

2020 Postdoctoral Researcher | Dept. Earth System Science, Stanford University

2018 – 2019 NSF Postdoctoral Fellow | Stanford & Lawrence Berkeley National Lab

2017 Postdoctoral Researcher | Dept. of Global Ecology, Carnegie Institution

2011 – 2016 Graduate Researcher | Dept. of Global Ecology, Carnegie Institution

2008 – 2011 Project Manager; Analyst | 3Degrees Group, Inc.

EDUCATION

2017 Ph.D., Earth System Science, Stanford University
Dissertation: Geomorphically driven biogeochemical gradients & their influence on tropical forest canopies

2008 B.S., Environmental Economics and Policy, University of California, Berkeley
Honors Thesis: Imperfect information and market failures in Lao livestock markets

2008 B.A., Molecular & Cell Biology, University of California, Berkeley
Genetics & Development track. Distinction: College of Letters & Sciences

AWARDS, FELLOWSHIPS

EAGLE Team Award, Jet Propulsion Laboratory (2026)

FY26 Earth Science Senior Review Proposal Team Award, Jet Propulsion Laboratory (2026)

NASA Administrator's Visit to JPL Team Award, Jet Propulsion Laboratory (2026)

Carbon-I Concept Study Report Submission Team Award, Jet Propulsion Laboratory (2025)

Voyager Award, US GHG Center Stakeholder Forum Leadership, Jet Propulsion Laboratory (2025)

EMIT Instrument Operations System Team, Group Achievement Award, NASA Honor Awards (2024)

U.S. GHG Center Strategic Mission Capabilities Team, Group Achievement Award, NASA Honor Awards (2024)

Team Award, SBG Technical Interchange Meeting Organizers, Jet Propulsion Laboratory (2024)

EMIT Science Team, Group Achievement Award, NASA Honor Awards (2023)

Charles Elachi Award for Outstanding Early-Career Achievement, Jet Propulsion Laboratory (2023)

Team Award, EMIT Greenhouse Gas Team Award, Jet Propulsion Laboratory (2023)

Voyager Award, SHIFT Campaign, Jet Propulsion Laboratory (2022)

NSF Earth Sciences Postdoctoral Fellowship (2018-2019)

NASA Earth and Space Science Graduate Fellowship (2014-2016)

AWARDED GRANTS & DIRECTED FUNDING

NASA Biosphere Directed Funding: PANGEA Science Definition Team, Role: Deputy Lead

NASA Earth Action Directed Funding: EMIT Critical Mineral Product and Applications Development (FY 26-27)

NASA Terrestrial Ecology Directed Funds: VSWIR-PLANTS Development (FY 25-26).

NASA Earth System Explorer Phase 2: Carbon-I Mission (FY 25). PI: C. Frankenberg, Role: Co-I.

NASA Mission Applied Sciences Program Directed Funds (FY22-26): EMIT Mission Applications.

NASA Earth System Science Pathfinder Program Office (FY 24-25): Extended Applications funding awarded for EMIT Acid Mine Drainage applications.

JPL Strategic University Research Partnerships Program (FY 23-25): Detecting toxic metal contamination through imaging spectroscopy. PI: KD Chadwick, Student: Kathleen Grant, USC

JPL Strategic University Research Partnerships Program (FY 23-25): Quantifying functional stability of California ecosystems using imaging spectroscopy after a decade of drought and fire. PI: Fabian Schneider, CO-I: KD Chadwick, Student: Carissa DeRanek, UCLA

JPL Advanced Concepts (FY 23): Critical Zone Science Development. PI: KD Chadwick

JPL Researchers on Campus Program (FY 23): Integrating Imaging Spectroscopy into the Caltech Critical Zone Initiative. PI: KD Chadwick

NSF Research Coordination Networks (2021): Patterns, Places, People: A Network for Scalable Airborne Observation of Socio-Environmental Systems. PI: A. Elmore. Role: Sr. Scientist

DOE Joint Genome Institute Community Science Program (2020). Title: Scaling microbial traits from genomes to watersheds through combined airborne hyperspectral imaging, soil biogeochemistry, and metagenome assembled genomes. PI: E. Brodie. Role: Co-lead investigator.

NSF Signals in the Soils EAGER (2018-2020). Title: Can remotely imaged vegetation characteristics provide a window into soil nutrient cycles? PI: K. Maher, Role: Sr. Scientist

PEER-REVIEWED PUBLICATIONS (* mentee)

- Allen, J., Boving, I., Anderegg, L. D., Brodrick, P. G., **Chadwick, K. D.**, Roberts, D., & Trugman, A. T. Canopy water content is related to variability in leaf water over time but not across space in an oak savanna ecosystem. *Remote Sensing of Environment*, 2026.
<https://doi.org/10.1016/j.rse.2026.115374>
- Ward-Baranyay M, Coleman RW, Wronkiewicz M, Ochoa F, Sousa D, Parker CW, Thompson DR, Elder CD, Okin GS, **Chadwick KD**, Miner K. et al. AVIRIS-3 Rapid Response to January 2025 Los Angeles Wildfires. *Geophysical Research Letters*. 2026. In Press.
- Estrela, R, D.R. Thompson, P.G. Brodrick, **K.D. Chadwick**, et al. Worldwide detection of plastic from space with the EMIT imaging spectrometer. *Geophysical Research Letters* 2025.
<https://doi.org/10.1029/2024GL112416>
- Silva, G.D.*, D.A. Roberts, K.B. Byrd, **K.D. Chadwick**, IJ Walker, J.Y. King. Using imaging spectroscopy and elevation in machine learning to estimate soil salinity in intermittently tidal wetlands. *Ecosphere* 2025. <https://doi.org/10.1002/ecs2.70356>.
- Boving, I., J. Allen, P.G. Brodrick, **K.D. Chadwick**, A.T. Trugman, L. Anderegg. The unstable relationship between drought stress and leaf water content complicates the remote sensing of tree drought stress. *Global Change Biology*. 2025. <https://doi.org/10.1111/gcb.70188>
- Chadwick, K.D.** et al. Unlocking Ecological Insights from Subseasonal Visible-to-Shortwave Infrared Imaging Spectroscopy: The SHIFT Campaign. *Ecosphere*. 2025.
<https://doi.org/10.1002/ecs2.70194>
- Cawse-Nicholson, K., **K.D. Chadwick**, P.G. Brodrick, M. Kiper, D.R. Thompson, D. Schimel, et al. (2025). Intrinsic dimensionality as a metric for temporal plant diversity evaluation: Case study from the SHIFT campaign. *Ecosphere*, 16(4), e70213. <https://doi.org/10.1002/ecs2.70213>
- Braghiere, R.K., Y. Wang, K. Liu, **K.D. Chadwick**, et al. Shifting from Plant Functional Types to Traits: Enhancing Biodiversity Representation in Earth System Models. *ESS Open Archive*. August 12, 2024. <https://doi.org/10.22541/essoar.172345637.73449984/v1>
- Angel, Y., A. Raiho, D. Kathuria, **K.D. Chadwick**, P.G. Brodrick, E. Lang, F. Ochoa, A.N. Shiklomanov. Deciphering the Spectra of Flowers to Map Landscape-scale Blooming Dynamics. *Ecosphere*. 2025. <https://doi.org/10.1002/ecs2.70127>
- Thompson, D.R., Green, R.O., Bradley, C., Brodrick, P.G., Mahowald, N., Dor, E.B., Bennett, M., Bernas, M., Carmon, N., **Chadwick, K.D.**, et al.. On-orbit calibration and performance of the EMIT imaging spectrometer. *Remote Sensing of Environment* 2024.
<https://doi.org/10.1016/j.rse.2023.113986>
- Thorpe, A.K., R.O. Green, D.R. Thompson, P.G. Brodrick, J.W. Chapman, C.D. Elder, I. Irakulis-Loitxate, D.H. Cusworth, A.K. Ayasse, R.M. Duren, C. Frankenberg, L. Guanter, J.R. Worden, P.E. Dennison, D.A. Roberts, **K.D. Chadwick**, M.L. Eastwood, J.E. Fahlen, C.E. Miller. Attribution of individual methane and carbon dioxide emission sources using EMIT observations from space. *Science Advances*, 2023. <https://doi.org/10.1126/sciadv.adh2391>
- Blonder, B., R. P.G. Brodrick, **K.D. Chadwick**, E. Carroll*, R Cruz-de Hoyos, M. Exposito Alonso, S. Hateley, M. Moon, C. Ray, H. Trang, J.A. Walton. Climate lags and genetics determine phenology in quaking aspen (*Populus tremuloides*). *New Phytologist*, 2023.
<https://doi.org/10.1111/nph.18850>

- Rempe, D., E.L. McCormick*, W.J. Hahm, G. Persad, C. Cummins, D.A. Lapides, **K.D. Chadwick**, D.N. Dralle. Mechanisms underlying the vulnerability of seasonally dry ecosystems to drought. *In review, preprint*. <https://doi.org/10.31223/X5XW7D>
- Blonder, B., R. P.G. Brodrick, J.A. Walton, **K.D. Chadwick**, I. Breckheimer, S. Marchetti, C. Ray, K. Mock. Remote sensing of cytotype and its consequences for canopy damage in quaking aspen. *Global Change Biology*, 2022. <https://doi.org/10.1111/gcb.16064>
- Chadwick O.A., J. Chorover, **K.D. Chadwick**, J. B. Bateman, E.W. Slessarev, M. Kramer, A. Thompson, P.M. Vitousek. Soil Development within the Hawaiian Time-Climate Matrix. in *Biogeochemistry of the Critical Zone*, eds: A. Wymore and J. Chorover. Springer Nature, 2021 https://doi.org/10.1007/978-3-030-95921-0_3
- McCormick*, E., D. Dralle, W.J. Hahm, A. Tune, L. Schmidt, **K.D. Chadwick**, D. Rempe. Evidence for widespread woody plant use of water stored in bedrock. *Nature*, 2021. <https://doi.org/10.1038/s41586-021-03761-3>
- Nagy R.C., et al. (inc. **K.D. Chadwick**). Harnessing the NEON Data Revolution to Advance Open Environmental Science with a Diverse and Data-Capable Community. *Ecosphere*, 2021. <https://doi.org/10.1002/ecs2.3833>
- Blonder, B., C. Ray, K. Mock, M. Castaneda, **K.D. Chadwick**, M. Clyne, P. Gaüzère, L. Iversen, M. Lusk, G.R. Strimbeck, S. Troy, J.A. Walton. Environmental impacts on mortality and recruitment depend on genotype and ploidy level in quaking aspen. *Ecological Applications*, 2021. <https://doi.org/10.1002/eap.2438>
- Thompson, D.R., P.G. Brodrick, K. Cawse-Nicholson, **K.D. Chadwick**, R.O. Green, B. Poulter, S. Serbin, A. Shiklomanov, P. Townsend, K. Turpie. Spectral Fidelity of Earth's Terrestrial and Aquatic Ecosystems. *JGR: Biogeosciences* 2021. <https://doi.org/10.1029/2021JG006273>
- Ordway, E.M, A.J Elmore., S. Kolstoe, J.E. Quinn, R. Swanwick, M. Cattau., D. Taillie., S.M. Guinn, **K.D. Chadwick**, J. Atkins, et al. Leveraging the NEON Airborne Observation Platform for socio-environmental systems research. *Ecosphere*, 2021. <https://doi.org/10.1002/ecs2.3640>
- Dralle, D. N., W.J. Hahm, **K.D. Chadwick**, E. McCormick*, D. Rempe. Technical note: Accounting for snow in the estimation of root-zone water storage capacity from precipitation and evapotranspiration fluxes, *Hydrology and Earth System Sciences*, 2021. <https://doi.org/10.5194/hess-25-2861-2021>
- Damerow J., C. Varadharajan, K. Boye, E. Brodie, M. Burrus, **K.D. Chadwick**, et al. Sample identifiers and metadata to support efficient data management, integration, and reuse in multidisciplinary ecosystem sciences. *Data Science Journal*, 2021. <https://doi.org/10.5334/dsj-2021-011>
- Maavara T, E.R. Sirila-Woodburn, R.M. Maxwell, F. Maina, J. Sample, **K.D. Chadwick**, R. Carroll, M. Newcomer, R.M. Couture, K.H. Williams, C.I. Steefel, N.J. Bouskill. Mechanistic modeling of geogenic and atmospheric nitrogen through the East River Watershed, Colorado Rocky Mountains. *PLOS ONE*, 2021. <https://doi.org/10.1371/journal.pone.0247907>
- Chadwick, K.D.**, P. Brodrick, K. Grant*, T. Goulden, A. Henderson*, N. Falco, H. Wainwright, K.H. Williams, M. Bill, I. Breckheimer, E. Brodie, H Steltzer, C.F.R. Williams, B. Blonder, J. Chen, B. Dafflon, M. Hancher, A. Khurram, J Lamb, C Lawrence, M McCormick*, J Musinsky, S. Pierce, A. Polussa, M. Hastings Porro*, A. Scott*, H. Wu Singh, P. Sorensen, C. Varadharajan, B. Whitney, K. Maher. Integrating airborne remote sensing and field campaigns for ecology and

- Earth system science. *Methods in Ecology and Evolution*, 2020. <https://doi.org/10.1111/2041-210X.13463>
- Chadwick, K.D.**, G.P. Asner. Geomorphic transience moderates topographic controls on tropical canopy foliar traits. *Ecology Letters*, 2020. <https://doi.org/10.1111/ele.13531>
- Wainwright, H., C. Steefel; S. Trutner, A. Henderson*, E. Nikolopoulos, C. Wilmer, **K.D. Chadwick**, N. Falco, K. Schaettle, J. Brown, H. Steltzer, K. Williams, S. Hubbard, B. Enquist. Satellite-derived foresummer drought sensitivity of plant productivity in Rocky Mountain headwater catchments: spatial heterogeneity and geological-geomorphological control. *Environmental Research Letters*, 2020. <https://iopscience.iop.org/article/10.1088/1748-9326/ab8fd0>
- Chadwick, K.D.**, G.P. Asner. Landscape evolution and nutrient rejuvenation reflected in Amazon forest canopy chemistry. *Ecology Letters*, 2018. <https://doi.org/10.1111/ele.12963>
- Martin, R.E., **K.D. Chadwick**, P.G. Brodrick, L. Carranza-Jimenez, N.R. Vaughn, G.P. Asner. An approach for foliar trait retrieval from airborne imaging spectroscopy of tropical forests. *Remote Sensing*, 2018. <https://doi.org/10.3390/rs10020199>
- Johnstone, S.A., **K.D. Chadwick**, M. Frias, G. Tagliaro, and G.E. Hilley. Soil development over mud-rich rocks produces landscape-scale erosional instabilities in the northern Gabilan Mesa, California. *Geological Society of America Bulletin*, 2017. <https://doi.org/10.1130/B31546.1>
- Chadwick, K.D.**, G.P. Asner. Organismic-scale remote sensing of canopy foliar traits in lowland tropical forests. *Remote Sensing*, 2016. <https://doi.org/10.3390/rs8020087>
- Chadwick, K.D.**, G.P. Asner. Tropical soil nutrient distributions determined by biotic and hillslope processes. *Biogeochemistry*, 2016. <https://doi.org/10.1007/s10533-015-0179-z>
- Cleveland, C.C., P. Taylor, **K.D. Chadwick**, K. Dahlin, C.E. Doughty, Y. Malhi, W.K. Smith, B.W. Sullivan, W.R. Wieder, and A.R. Townsend. A comparison of plot-based, satellite and Earth system model estimates of tropical forest net primary production. *Global Biogeochemical Cycles*, 2015. <https://doi.org/10.1002/2014GB005022>
- Asner, G.P., D.E. Knapp, R.E. Martin, R. Tupayachi, C. B. Anderson, J. Mascaro, F. Sinca, R. Vaudry, **K.D. Chadwick**, M. Higgins, W. Farfan, W. Llactayo, and M.R. Silman. Targeted carbon conservation at national scales with high-resolution monitoring. *Proceedings of the National Academy of Sciences*, 2014. <https://doi.org/10.1073/pnas.1419550111>.
- Mascaro, J., G.P. Asner, D.E. Knapp, T. Kennedy-Bowdoin, R.E. Martin, C.B. Anderson, M. Higgins, **K.D. Chadwick**. A tale of two “forests”: random forest machine learning aids tropical forest carbon mapping. *PLOS ONE*, 2014. <https://doi.org/10.1371/journal.pone.0085993>
- Asner, G.P., J.K. Clark, J. Mascaro, R. Vaudry, **K.D. Chadwick**, G. Vieilledent, M. Rasamoelina, A. Balaji, T. Kennedy-Bowdoin, L. Maatoug, M.S. Colgan, and D.E. Knapp. Human and environmental controls over aboveground carbon storage in Madagascar. *Carbon Balance and Management*, 2012. <https://doi.org/10.1186/1750-0680-7-2>
- Asner, G.P., J.K. Clark, J. Mascaro, G.A. Galindo García, **K.D. Chadwick**, D.A. Navarrete Encinales, G. Paez-Acosta, E. Cabrera Montenegro, T. Kennedy-Bowdoin, A. Duque, A. Balaji, P. von Hildebrand, L. Maatoug, J.F. Phillips Bernal, D.E. Knapp, M.C. García Dávila, J. Jacobson, M.F. Ordóñez. High-resolution mapping of forest carbon stocks in the Colombian Amazon. *Biogeosciences*, 2012. <https://doi.org/10.5194/bg-9-2683-2012>

PUBLISHED DATASETS (* mentee)

- Breckheimer, I., Carroll, E., **Chadwick, K. D.**, Falco, N., Henderson, A., Lovegreen, P., ... & Xu, H. (2026). CHESS 2025: Field-collected vegetation attributes and site photos. Watershed Function SFA.
- Kathleen K., E Carroll, **K.D. Chadwick**, R Eckert, & I Breckheimer. (2025). Site and endmember spectra of terrestrial vegetation and soils for the Colorado Headwaters Ecological Spectroscopy Study, June-July 2025. ESS-DIVE. [doi:10.15485/2997555](https://doi.org/10.15485/2997555), version: ess-dive-c938a042bca2b42-20251015T134002080.
- Zheng, T., N. Queally*, C. Ade*, P.G. Brodrick, **K.D. Chadwick**, P. Townsend. 2025. SHIFT: AVIRIS-NG Derived Plant Functional Trait Mosaics. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/2453>
- Eckert, R., D.R. Thompson, D.J. Jensen, F.D. Schneider, P.G. Brodrick, K. Grant, K.D. Chadwick, R.O. Green. 2025. SHIFT: Pseudo Invariant Targets, ASD Field Spectrometer Measurements, 2022. ORNL DAAC, Oak Ridge Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/2446>
- Grant* K ; **Chadwick K D** ; Henderson* A ; Scott* A ; McCormick* M ; Pierce S ; Hastings Porro* M ; Maher K. 2025. Foliar element determination from field survey in association with the National Ecological Observatory Network Airborne Observation Platform survey, East River, Colorado 2018. ESS-DIVE repository. Dataset. [doi:10.15485/2574425](https://doi.org/10.15485/2574425)
- Karaoz U ; Sorensen P ; **Chadwick KD** ; Bill M ; Bouskill N ; Falco N ; Polussa A ; Maher K ; Wang S ; Wainwright H ; Williams K ; Brodie E. 2025. Metagenome-assembled genomes from topsoils collected during NEON campaign in East River, CO (06/14/2018-06/28/2018). ESS-DIVE repository. Dataset. [doi:10.15485/2587101](https://doi.org/10.15485/2587101)
- Zheng, T., N. Queally*, **K.D. Chadwick**, J. Cryer, P. Reim, C. Villanueva-Weeks, P. Townsend, M. Berg, Z. Breuer, N. Burkard, A. Hanson, E. Johnson, E. Kanski, D. Lacey, C. Lapinskas, A. Lee, E. Lisenbee, E. Marsh, L. Pfau, I. Shifrin, B. Skalitzy, S. Stroschein, J. Van beek, C. Vanden heuvel, and A. Williams. 2024. SHIFT: Laboratory Foliar Chemical Analysis Results for Field Samples, CA, 2022. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/2337>
- Queally, N*, F.W. Davis, **K.D. Chadwick**, C. Ade*, L. Anderegg, Y. Angel, B. Baker, I. Boving, R.K. Braghiere, P. Brodrick, P. Campbell, J. Cryer, K.C. Cushman, P.D. Dao, A. Dibartolo, R. Eckert, K. Grant*, B. Heberlein, M. Johnson*, J. Joutras, K. Kerr, C. Kibler, M. Klope, K. Kovach, A. Kreisberg, P. Lovegreen, A.J. Maguire, C. McMahon, K. Miner, C. Nickles, F. Ochoa*, J.P. Ocon*, A. Ongjoco, E. Ordway, M. Park, R. Pavlick, A.M. Raiho, D.A. Roberts, C.M. Saiki, F.D. Schneider, K. Thompson, P. Townsend, E. Vermeer, C. Villanueva-Weeks, N. Vinod, T. Zheng, K. Zumdahl, and D.S. Schimel. 2024. SHIFT: Vegetation Plot Characterization, Santa Barbara County, CA, 2022. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/2295>
- Goulden, T, M.H. Worsham, B. Hass, E. Brodie, **K.D. Chadwick**, N. Falco, K. Maher, H. Wainwright, K. Williams, and L. Kueppers. *NEON AOP Survey of Upper East River CO Watersheds: Waveform LiDAR Binary Data*. United States: N. p., 2024. Web. doi:10.15485/2403350.
- Chadwick, K.D.**, Queally, N*, Zheng, T., Cryer, J., Vanden Heuvel, C., Villanueva-Weeks, C., Ade, C.*, Anderegg, L., Angel, Y., Baker, B., Boving, I., Braghiere, R.K., Brodrick, P., Campbell, P.,

- Cushman, K.C., Davis, F., Dao, P.D., Dibartolo, A., Eckert, R., Grant, K.*, Heberlein, B., Johnson, M*, Joutras, J., Kibler, C., Klope, M., Kovach, K., Kreisberg, A., Lovegreen, P.*, Maguire, A.J., McMahon, C., Miner, K., Nickles, C., Ochoa, F*, Ocón, J.P*, Ongjoco, A., Ordway, E., Park, M., Pavlick, R., Raiho, A.M., Roberts, D.A., Schimel, D.S., Schneider, F.D., Thompson, K., Townsend, P., Vermeer, E., Vinod, N., Zumdahl, K., 2023. SHIFT Photosynthetic and Leaf Traits, Santa Barbara County, 2022. <https://doi.org/10.3334/ORNLDAAC/2233>
- Brodrick, P., Pavlick, R., Bernas, M., Chapman, J.W., Eckert, R., Helmlinger, M., Hess-Flores, M., Rios, L.M., Schneider, F.D., Smyth, M.M., Eastwood, M., Green, R.O., Thompson, D.R., **Chadwick, K.D.**, Schimel, D.S., 2023. SHIFT: AVIRIS-NG L2A Unrectified Reflectance. <https://doi.org/10.3334/ORNLDAAC/2183>
- Brodrick, P.G., Pavlick, R., Bernas, M., Chapman, J.W., Eckert, R., Helmlinger, M., Hess-Flores, M., Rios, L.M., Schneider, F.D., Smyth, M.M., Eastwood, M., Green, R.O., Thompson, D.R., **Chadwick, K.D.**, Schimel, D.S., 2023. SHIFT: AVIRIS-NG L1A Unrectified Radiance. <https://doi.org/10.3334/ORNLDAAC/2184>
- Zheng, T., Queally, N*, **Chadwick, K.D.**, Cryer, J., Reim, P., Townsend, P., Marsh, E., Berg, M., Breuer, Z., Burkard, N., Hanson, A., Johnson, E., Lacey, D., Lee, A., Pfau, L., Shifrin, I., Skalitzy, B., Stroschein, S., Van beek, J., Vanden heuvel, C., Williams, A., 2023. SHIFT: Reflectance Measurements for Dried and Ground Leaf Materials. <https://doi.org/10.3334/ORNLDAAC/2244>
- Brodrick P G; **K.D. Chadwick**; Blonder B. 2021. Aspen ploidy level and cover maps from NEON Airborne Observation Platform, 2018, Crested Butte, Colorado. EAGER SitS: Can remotely imaged vegetation characteristics provide a window into soil nutrient cycles?, ESS-DIVE repository. Dataset. [doi:10.15485/1779716](https://doi.org/10.15485/1779716)
- Chadwick K.D.**, P.G. Brodrick, K. Grant*, A. Henderson*, M. Bill, I. Breckheimer, C.F.R. Williams, T. Goulden, N. Falco, M. McCormick*, J. Musinsky, S. Pierce, M. Hastings Porro*, A. Scott*, E.L. Brodie, M. Hancher, H. Steltzer, H. Wainwright, K. Maher (2020): NEON AOP foliar trait maps, maps of model uncertainty estimates, and conifer map. A Multiscale Approach to Modeling Carbon and Nitrogen Cycling within a High Elevation Watershed. doi: 10.15485/1618133
- Chadwick K.D.**, K. Grant*, A. Henderson*, I. Breckheimer. C.F.R. Williams, N. Falco, J. Chen, H. Henry, A. Khurram, J. Lamb, M. McCormick*, H. McOmber, S. Pierce, A. Polussa, M Hastings Porro*, A. Scott*, H. Wu Singh, B. Whitney, E. Brodie, R. Carroll, C. Dewey, L. Kueppers, T. Maavara, H. Steltzer, K. Williams, K. Maher (2020): Locations, metadata, and species cover from field sampling survey associated with NEON AOP survey, East River, CO 2018. *Watershed Function SFA*. doi: 10.15485/1618130
- Chadwick K.D.**, K. Grant*, A. Henderson*, A. Scott*, M. McCormick*, S. Pierce, M. Hastings Porro*, K. Maher (2020): Leaf mass per area and leaf water content measurements from field survey in association with NEON AOP survey, East River, CO 2018. *A Multiscale Approach to Modeling Carbon and Nitrogen Cycling within a High Elevation Watershed*. doi: 10.15485/1618132
- Chadwick, K.D.**, K. Grant*, M. Bill, A. Henderson*, A. Scott*, K. Maher (2020). Site-level Foliar C, N, delta13C data from samples collected during field survey associated with NEON AOP survey, East River, CO 2018. *A Multiscale Approach to Modeling Carbon and Nitrogen Cycling within a High Elevation Watershed*. doi:10.15485/1631278

- Chadwick K.D.**, S. Pierce, M. Sirles, C. Lawrence, J. Cullen, K. Grant*, N. Falco, K. Maher, B. Dafflon (2020). Soil bulk density and texture data collected during field survey associated with NEON AOP survey, East River, CO 2018. *A Multiscale Approach to Modeling Carbon and Nitrogen Cycling within a High Elevation Watershed*. doi:10.15485/1671826
- Brodrick P.G., T. Goulden, **K.D. Chadwick** (2020): Custom NEON AOP reflectance mosaics and maps of shade masks, canopy water content. *Watershed Function SFA*. doi: 10.15485/1618131
- Goulden T., B. Hass, E.L. Brodie, **K.D. Chadwick**, N. Falco, K. Maher, H. Wainwright, K. Williams (2020): NEON AOP Survey of upper East River CO watersheds: LAZ files, LiDAR surface elevation, terrain elevation, and canopy height rasters. *Watershed Function SFA*. doi: 10.15485/1617203
- Goulden T, D. Hulslander, B. Hass, E.L. Brodie, **K.D. Chadwick**, N. Falco, K. Maher, H. Wainwright, K. Williams (2020): NEON AOP imaging spectroscopy survey of Upper East River Colorado watersheds: Raw-space radiance and observational variable dataset. *Watershed Function SFA*. doi: 10.15485/1617204

OTHER PUBLICATIONS

- Eckert, R., C. Ade, D.R. Thompson, K. Cawse-Nicholson, U.N. Bohn, P.G. Brodrick, A. Cardoso, **K.D. Chadwick**, C. Elder, A. Flores-Anderson, L. Guild, C.M. Lee, K.M. Luis, A.M. Portier, S.S. Uz, N. Stavros, K. Turpie, Y. Angel, M.M. Gierach, G.H. Halverson, B.E. Hubbard, D. Kathuria, S. Kabir, R.F. Kokaly, C.E. Miller, N. Pahlevan, M.A. Pascolini-Campbell, M.S. Ramsey, S.P. Serbin, A. Shiklomanov, P.A. Townsend, T. Zheng, A. Sen, R.R. Basilio, D.S. Schimel, S.J. Hook, and R.O. Green. 2025. SBG 2024 TIM Meeting Summary: Current Progress and Future Goals of the SBG Mission. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAAC/2433>
- Ordway, E.M., M.M. Keller, M. Longo, R. Negron-juarez, Y. Feng, H. Stouter, I.N. Rivera, A. Alencar, A. Bey, R.K. Braghiere, A. Cardoso, **K.D. Chadwick**, J.D Fuentes, R. Eckert, L. Fatoyinbo, A. Ferraz, L. Guild, M.S. Johnson, E. Kane, L.S. Koutika, Y. Li, J. Liu, I.B. Mccubbin, F. Meunier, C.E. Miller, H.C. Muller-landau, T. Nkuintchua, M. Nunes, L.B.S. Takougoum, M.J. Santos, F.D. Schneider, M. Simard, B. Sonke, C. Terrer, M. Von essen, M.Y. Wong, S.R. Worden, X. Xiao, V. Zaunbrecher, et al. 2025. The PANGAEA Scoping Study Final Report. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAAC/2398>
- Global Green Growth Institute and United Nations Office for Sustainable Development. (2025). *Bridging Gaps, Empowering Change: Tackling Plastic Pollution*. Seoul, South Korea
- Asner, G.P., S.L. Ustin, P.A. Townsend, R.E. Martin, **K.D. Chadwick**. Forest biophysical and biochemical properties from hyperspectral and LiDAR remote sensing. *Land Resources Modeling, Monitoring, and Mapping with Remote Sensing*, 2015. ISBN: 978-1-4822-1795-7.
- Asner, G.P., D.E. Knapp, R.E. Martin, R. Tupayachi, C.B. Anderson, J. Mascaro, F. Sinca, **K.D. Chadwick**, S. Sousan, M. Higgins, W. Farfan, M.R. Silman, W.A.L. León, A.F.N. Palomino. The High-Resolution Carbon Geography of Perú, 2014. ISBN: 978-0-9913870-7-6.

AIRBORNE & FIELD SAMPLING CAMPAIGNS

- AVIRIS for Acres, Cornell Extension Experimental Farms, Finger Lakes Region, New York (July-August 2025). Co-lead with K. Gold of Cornell AgriTech.

Colorado Headwaters Ecological Spectroscopy Study (CHESS), Rocky Mountain Biological Laboratory, Gothic, Colorado (June-July 2025). Planning Committee member, Lead of JPL team augmenting vegetation trait collection, ISOFTT processing, model development for 2018 & 2025 data unification.

SBG High Frequency Timeseries (SHIFT), Dangermond Preserve & Sedgwick Reserve, Santa Barbara County, CA (February – May, 2022, September 2022). Led terrestrial field team for sampling of vegetation traits and diversity surveys over 14-week campaign, coaligned with AVIRIS-ng airborne collections.

Rocky Mountain Biological Laboratory, Gothic, Colorado (July 2019). Completed crown delineation ground-truth work for collaboration with B. Blonder on aspen ploidy mapping using NEON AOP surveys from 2018.

Rocky Mountain Biological Laboratory, Gothic, Colorado (June-October 2018). Led field ground-truth sampling campaign and coordination with flight team for first task-able National Ecological Observatory Network Airborne Observation Platform aerial surveys.

Rocky Mountain Biological Laboratory, Gothic, Colorado (July 2017). Foliar collection, vegetation surveys, biomass surveys, and soil sample collection.

Kosñipata Valley, Peru (January-February 2017). Soil sampling, GPS data collection along an elevation gradient from the Amazon basin to Andean treeline to complement Carnegie Airborne Observatory (CAO) imaging spectroscopy and LiDAR data.

Danum Valley, Danau Girang Field Centre, Sepilok; Sabah, Malaysia (May, July 2016). Tree crown geolocation, and foliar sampling in support of CAO airborne assessment of state-wide foliar characteristics.

Mt. Kinabalu Park; Sabah, Malaysia (March-April 2016). Soil and foliar sampling and tree crown geolocation in support of landscape study on distributions of biogeochemical properties along substrate-elevation matrix utilizing imaging spectroscopy data from CAO.

Gabilan Mesa, California (brief, 2015). Assisted soil sampling and geomorphic assessment.

Los Amigos Biological Station, Madre de Dios, Peru (July-August 2013, July-August 2014). Soil sampling, foliar sampling, GPS data collection in support of airborne assessment of landscape scale biogeochemical properties.

Tarapoto, Peru (August-September 2012). Assisted in on-board data collection, progress tracking, and data post-processing for Carnegie Airborne Observatory northern Peru campaign.

Vientiane, Laos (June-August 2007). Market and household surveys in support of honors thesis.

SELECTED INVITED PRESENTATIONS, SEMINARS, AND PANALS

Seminar Speaker. 2025. Biogeochemical landscapes across scales: The role of imaging spectroscopy in Earth system and critical zone science. *Cary Institute Seminar Series*.

Seminar Speaker. 2025. Insights from VSWIR imaging spectroscopy for federal lands: from forest management to mining remediation. *Applied Earth Observations Innovation Partnership Webinar Series, Virtual*.

Seminar Speaker. 2025. Biogeochemical landscapes across scales: The role of imaging spectroscopy in Earth system and critical zone science. *Biogeochemistry seminar series, Cornell University*.

Panelist, 2024, Shaping the Future of Critical Zone Science: Advancing Transdisciplinary and Interagency Collaboration for a Resilient Planet. *American Geophysical Union, Washington DC.*

Panelist, 2024, PAN tropical investigation of bioGeochemistry and Ecological Adaptation (PANGEA) Townhall. *American Geophysical Union, Washington DC.*

Presenter. 2024. Identification of acid mine drainage indicator minerals and precursors by EMIT-hyperspectral sensor on board of the International Space Station. *Workshop on Strengthening capacities to use spectral signatures of remote sensing applied in environmental control processes for the identification of environmental impacts in the mining sector.* Asia-Pacific Economic Cooperation, Lima, Peru.

Panelist, 2024, Partnerships for Addressing the Waste Crisis and Accelerating Circularity: A New Policy Support Initiative for Data and Action. *High-Level Political Forum for Sustainable Development.* United Nations Office for Sustainable Development. New York City, NY.

Presenter, 2024 From Global to Local: How field campaigns make NASA missions relevant to place based science. *Point Conception Institute Symposium.*

Presenter and Panelist, 2024 Harnessing the rainbow to reveal the composition of Earth's surface and atmosphere. *American Association for the Advancement of Science, Denver, CO.*

Presenter, 2023. Temporal dimensions of spectral diversity. *Ecological Society of America Meeting, Portland, Oregon.*

Presenter, 2023. SBG High Frequency Time Series (SHIFT) Overview. *International Geoscience and Remote Sensing Symposium, Pasadena, CA.*

Presenter and Workshop Participant, 2022. NASA Missions and Programs Relevant for Edifice Instability. *USGS Volcano Edifice Instability Workshop, Cascades Volcano Observatory, Vancouver, WA.*

Presenter, 2022. Imaging Earth's surface with the EMIT mission and beyond. *NASA Solid Earth Team Meeting Plenary, Scripps Institute, La Jolla, CA.*

Presenter, SHIFT Team. 2022. *SHIFT-ing to an imaging spectroscopy future: An overview of the SBG High Frequency Timeseries campaign.* *NASA Surface Biology and Geology Mission Community Workshop, Washington DC.*

Presenter and Panelist, 2022. SHIFTing into the time domain: exploring ecosystem phenology with imaging spectroscopy data. *Ecological Society of America Meeting, Montreal.*

Presenter, 2020. Filling in the gaps: Utilizing high-resolution remote sensing to understand ecosystem development. *Ecological Society of America Meeting, Virtual.*

Presenter and Workshop Participant, 2020. Utilizing imaging spectroscopy for characterizing environmental properties and the potential for synthesis. *People, Land, & Ecosystems: Leveraging NEON for Socio-Environmental Synthesis Workshop, SESYNC, University of Maryland.*

Seminar Speaker, 2019. Landscape evolution as a driver of ecosystem organization. *Water, Climate, and Environment seminar series, University of Texas at Austin.*

Presenter, 2019. Utilizing hyperspectral characterization of vegetation to estimate soil properties across landscapes. *Soil Science Society of America Meeting, San Antonio, TX.*

Plenary Speaker and Workshop Participant, 2019. Landscape-Scale biogeochemistry with the NEON AOP: ground truthing, collaboration, and accessibility. *NEON Science Summit Plenary, Earth Lab, CU Boulder.*

Seminar Speaker 2019. Landscape evolution as a driver of ecosystem organization. *Institute of Ecology and Evolution seminar series, University of Oregon.*

Presenter 2019. Predicting soil carbon organization & drivers across landscapes. *Soil Science Society of America Meeting, San Diego, CA.*

Seminar Speaker 2018. Utilizing remotely sensed foliar characteristics to understand landscape-scale critical zone processes. *Biogeosciences seminar series, University of California, Santa Barbara.*

Presenter and Workshop Participant 2018. Getting to basin scale: building surface-subsurface predictive relationships. *DOE Watershed Function Special Focus Area 2018 Retreat, Crested Butte, CO.*

Presenter 2018. Understanding foliar trait distributions across a tropical substrate-elevation matrix using integrated imaging spectrometer and LiDAR datasets. *Ecological Society of America Meeting, New Orleans, LA.*

Seminar Speaker 2017. Geomorphically driven biogeochemical gradients and their influence on tropical canopies. *Department of Biology seminar series, Sonoma State University.*

Presenter 2016. Using imaging spectroscopy to assess geomorphically driven gradients in canopy traits within a tropical terrace landscape. *Ecological Society of America Meeting, Fort Lauderdale, FL.*

Presenter 2014. Exploring patterns of rock derived nutrient availability and soil chemistry along hillslopes in the Peruvian Amazon. *Goldschmidt2014 Sacramento, CA.*

Presenter 2013. Linking terrace geomorphology and nutrient availability using high-resolution airborne remote sensing. *American Geophysical Union Fall Meeting, San Francisco, CA.*

OUTREACH, TEACHING AND MENTORSHIP ACTIVITIES

Guest Instructor, SpecSchool run by Dr. Kyla Dahlin and MSU, 2025.

Guest Instructor, *Methane Observations for Large Emission Event Detection and Monitoring*, NASA Applied Remote Sensing Training Program, 2024

Member, Organizing Committee for SBG Technical Interchange Meeting, 2024, 2025.

Organizer, EMIT Webinar Tutorial Series, 2023-2025.

Led American Geophysical Union Fall Meeting 2023 Learning Workshop: *Space Station Synergies: Applying ECOSTRESS and EMIT ecological problems for Scientific Insight.*

Ecological Society of America 2023 Workshop: *An Introduction to Working with NASA Remote Sensing Data in the Cloud Using Open Source Software.* Led by ORNL and LP DAAC

Led imaging spectroscopy intern summer group, supporting 12 students at weekly, cross-center meetings in collaboration with Technologist and two postdoctoral researchers, 2023.

Mentor for JPL Maximizing Student Potential in STEM program and Caltech SURF program, 5 students supported in summer 2023.

Coordinated EMIT data radiance and reflectance tutorial workshops with Land Processes DAAC and EMIT Science Team, 2023, <https://earth.jpl.nasa.gov/emit/events/4/emit-data-tutorial-series/>.

Serving as graduate committee member for students at University of Southern California and University of Wisconsin, Madison, 2022-present

Led SBG cross-center summer postdoc & intern meetings, 2022

Stanford Earth Summer Undergraduate Research Program Mentor. Stanford University, 2020

Stanford Earth Summer Undergraduate Research Program Mentor. Stanford University, 2018

Co-Instructor, EARTHSYS 111: Biology and Global Change. Instructor for half of the course focused on terrestrial ecosystems. Stanford University, 2018

Mentor to six undergraduate students. Department of Biology, Sonoma State University, 2017

Stanford Earth Summer Undergraduate Research Program Mentor. Stanford University, 2015

Head Teaching Assistant, EARTHSYS 306: An Earth System Perspective to Global Challenges. Stanford University, 2014

Teaching Assistant, EARTHSYS 155: Science of Soils. Stanford University, 2014

Stanford Earth Systems Undergraduate Internship Mentor. Stanford University, 2014-2015

SERVICE, LEADERSHIP, AND DEVELOPMENT

Advisory Review Board Member, Spatial Applied Conservation and Earth Science (SPACES) Institute, Cal Poly Pomona. (2026-present)

Board Member, NASA Earth Science Division Representative, Center to Advance the Science of Exploration to Reclamation in Mining, NSF Industry–University Cooperative Research Center. (2026-present)

Chair, Chair-Elect, Member, Distributed Active Archive Center User Working Group, Oak Ridge National Laboratory (2023-present)

Member, Airborne Sampling Design Technical Working Group, National Ecological Observatory Network (2018-present)

Serves on NASA Proposal Review Panels for Research Opportunities in Space and Earth Science (ROSES) funding calls (2023-present).

Co-Lead, Terrestrial vegetation Algorithm & Applications Interchange Network (TerrAAIN) (2025-present)

Member, Science Advisory Group, Hyperspectral Biodiversity Scout (HiBiDiS) European Space Agency Mission (2025)

Member, Foliar Sampling Technical Working Group, National Ecological Observatory Network (2017-2025)

Organized United States Greenhouse Gas Center Annual Stakeholder Forum, 2024.

Member, Applied Earth Observations Innovation Partnership, NASA Applied Sciences (2023)

Member, Earth Sciences Section DEIA committee (2023)

Participant, NCAR-NEON Workshop: Predicting Life in the Earth System – linking the geosciences and ecology, Boulder, CO (2019)

Member, Biogeochemistry Technical Working Group, National Ecological Observatory Network (2017-2018)

UNDERGRADUATE, GRADUATE, & POSTGRADUATE MENTEES

Postdoctoral Researchers

Natalie Queally, JPL⁹
Mandy Lopez, JPL
Christiana Ade, JPL

Graduate Students & Post-bac

Anna Ongjoco, UCLA¹
Kate Thompson, U. Wisconsin³
Kathleen Kanaley, Cornell University⁶
Erin Carroll, UC Berkeley⁶
Fernando Romero Galvin, Cornell University⁶
Natalie Queally, U. Wisconsin^{1,3}
Piper Lovegreen, UCSB³
Carissa DeRanek, UCLA^{2,3}
Germán Silva, UCSB⁴
Corisa Wong, Stanford University⁴
Yakshi Ortiz, University of Puerto Rico^{3,7}
Dain Kim, Boston University⁶
Marie Johnson, University of Montana⁶
Jocelyn Reahl, Caltech¹
Alison Tune, UT Austin
Erica McCormick, UT Austin
Amanda Henderson, RMBL
Kathleen Grant, USC^{2,3}
Chelsea Wilmer, CSU
Dellena Bloom, LBNL

Undergraduates

Gabriela Jaimes, CSU Fullerton⁴
Kushnerniva Laurent, Scripps⁴
Ardra Charath, Caltech⁵
Vivian Shay, Stanford University⁴
Shawnell McFarlane, JPL⁴
Scott Roycroft, Stanford University⁸
Lucas Del Toro, Stanford University⁸
Heather Herman, Stanford University⁸
Anthony Chui, Sonoma State University
Dino Sbardellati, Sonoma State University
Maceo Hastings Porro, Stanford University⁸
Maeve McCormick, Stanford University
Douglas Owick, Sonoma State University
Makenzie Crews, Sonoma State University
Bailey Crocker, Sonoma State University
Emily Humphree, Sonoma State University
Andea Scott, Stanford University⁸
Mitchell Zimmerman, Stanford University⁸

¹ NASA FINESST Student Mentee

² JPL Strategic University Research Partnership Advisee

³ Committee member

⁴ JPL Maximizing Student Potential in STEM intern

⁵ Caltech Summer Undergraduate Research Fellow

⁶ JPL Year Round Internship Program Intern

⁷ NASA Puerto Rico Space Grant Fellow

⁸ Stanford Sustainability, Engineering and Science - Undergraduate Research (SESUR) Program

⁹ NASA Postdoctoral Program