Adam Chlus

Education

University of Wisconsin, Madison, WI
   Ph.D. Forestry 2020
University of Connecticut, Storrs, CT
   M.S. Natural Resources 2015
   B.S. Environmental Science 2011

Employment History

Technologist, Jet Propulsion Laboratory, Pasadena, CA	2023 – Present
Postdoctoral Fellow, Jet Propulsion Laboratory, Pasadena, CA	2021 – 2023
Graduate Research Assistant, University of Wisconsin, Madison, WI	2015 – 2020
Research Assistant, University of Connecticut, Avery Point, CT	2014 – 2015
Intern, Jet Propulsion Laboratory, Pasadena, CA	2014
DEVELOP Intern, NASA Ames Research Center, Moffett Field, CA	2013
GIS Technician, University of Connecticut, Storrs, CT	2012 - 2014

Publications

- Wang Z., Feret JB., Liu N., Sun Z., Yang L., Geng S., Zhang H., **Chlus A**., Kruger E.L., Townsend P.A. Generality of leaf spectroscopic models for predicting key foliar functional traits across continents: A comparison between physically- and empirically-based approaches. *Remote Sensing of Environment*. (In press)
- Poulter B., Currey B., Calle L., Shiklomanov A.N., Amaral C.H., Brookshire E.J., Campbell P., **Chlus A**., … & Zhang Z. (2022). Simulating global dynamic surface reflectances for imaging spectroscopy spaceborne missions-LPJ-PROSAIL. *Journal of Geophysical Research: Biogeosciences*, 128(1).
- Raiho, A., Cawse-Nicholson, K., **Chlus, A**., Dozier, J., Gierach, M. M., Miner, K., … & Poulter, B. (2022). Exploring mission design for imaging spectroscopy retrievals for land and aquatic ecosystems. *Journal of Geophysical Research: Biogeosciences*, 128(4).
- **Chlus, A**., & Townsend, P. A. (2022). Characterizing seasonal variation in foliar biochemistry with airborne imaging spectroscopy. *Remote Sensing of Environment*, *275*, 113023.
- Greenberg E., Thompson D.R., Jensen D.J., Townsend P.A., Queally N., **Chlus A.**, Fichot C.G., Harringmeyer J., Simard M. (2022). An improved scheme for correcting remote spectral surface reflectance simultaneously for terrestrial BRDF and water-surface sunglint in coastal environments. *Journal of Geophysical Research: Biogeosciences*, 127(1).
- Queally N., Ye Z., Zheng T., **Chlus A.**, Schneider F., Pavlick R.P., & Townsend P.A. (2022). FlexBRDF: A flexible BRDF correction for grouped processing of airborne imaging spectroscopy flightlines. *Journal of Geophysical Research: Biogeosciences*, 127(1).
- **Chlus A**., Kruger E.L., Townsend P.A*.* (2020). Mapping three-dimensional variation in leaf mass per area with imaging spectroscopy and lidar. *Remote Sensing of Environment*. 250 112043*.*
- Meireles J. E., Cavender-Bares J., Townsend P., Ustin S., Gamon J., Schweiger A., Schaepman M., Asner G., Martin R., Singh A., Schrodt F., **Chlus A.,** O'Meara B. Leaf reflectance spectra capture the evolutionary history of seed plants. *New Phytologist*, 228(2), 485-493.

- Wang Z., **Chlus A.,** Geygan R., Ye Z., Zheng T., Singh A., Couture J.J., Cavender-Bares J., Kruger E.L., Townsend P.A. A database foliar functional trait maps across NEON domains in the eastern U.S. *New Phytologist*, 228(2), 494-511.
- Gold K.M., Townsend P.A., **Chlus A.**, Herrmann I., Couture J.J., Larson E.R., Gevens A.J. (2020). Hyperspectral measurements enable pre-symptomatic detection and differentiation of contrasting physiological effects of late blight and early blight in potato. *Remote Sensing*. 12(2).
- Serbin S.P., Wu J., Ely K.S., Kruger E.L., Townsend P.A., Meng R., Wolfe B.T., **Chlus A.**, Wang Z., Rogers A. (2019). From the Arctic to the tropics: multi-biome prediction of leaf mass per area using leaf reflectance. *New Phytologist*. 224(4): 1557-1568.
- Dierssen H.M., Bostrom K.J., **Chlus A.**, Hammerstrom K., Thompson D.R., Lee Z. (2019). Pushing the limits of seagrass remote sensing in the turbid waters of Elkhorn Slough, California. *Remote Sensing.* 11(14).
- Khan, A. L., Dierssen H., Schwarz J.P., Schmitt C., **Chlus A.**, Hermanson M., Painter T. H., McKnight D. M. (2017). Impacts of coal dust from an active mine on the spectral reflectance of Arctic surface snow in Svalbard, Norway. *Journal of Geophysical Research: Atmospheres*. 122:1767-1778.
- Dierssen H., McManus G.B., **Chlus A.**, Qiu D., Bo-Cai G., Lin S. (2015). Space station captures a red tide ciliate bloom at high spectral and spatial resolution. *Proceedings of the National Academy of Sciences*. 112(48): 14783-14787.
- Dierssen H. M., **Chlus A**., Russell B. (2015). Hyperspectral discrimination of floating mats of seagrass wrack and the macroalgae *Sargassum* in coastal waters of Greater Florida Bay using airborne remote sensing. *Remote Sensing of Environment*. 167: 247-258.

Publications in Progress

- **Chlus A.**, et al. Global patterns in plant phenolics revealed with spaceborne imaging spectroscopy.
- **Chlus A**., et al. Development of generalized models to estimate foliar biochemistry from fresh and dry spectra.

Presentations

- **Chlus A.**, Erker T., Brodrick P., Thompson D.R., Townsend P.A., Gierach M. *Global patterns in plant phenolics revealed with spaceborne imaging spectroscopy*. AGU. Chicago, IL. 2022. Oral
- **Chlus A.**, Townsend P.A. *Characterizing seasonal variation in foliar biochemistry with airborne imaging spectroscopy.* AGU. New Orleans, LA. 2021. Poster
- **Chlus A**, Singh A., Kruger E., Townsend P. *Patterns and drivers of interannual variation in canopy biochemistry: An analysis of the 27-year record of imaging spectroscopy data over Blackhawk Island, WI (1992-2019)*. AGU. San Francisco, CA. 2019. Poster
- **Chlus A**., Wang Z., Kruger E., Townsend P*. Integration of NEON imaging spectroscopy and lidar data for 3-dimensional canopy trait mapping.* ForestSAT. College Park, MD. 2018. Oral
- **Chlus A.,** Townsend P., Wang Z., Singh A. *Remote sensing spectroscopy to discriminate plant functional types and physiological function.* IEEE Geoscience and Remote Sensing Society Annual Conference. Fort Worth, TX. 2017. Oral
- **Chlus A.,** Singh A., Townsend P. *Apparent drivers of forest functional trait retrievals in imaging spectroscopy data*. Ecological Society of America Annual Conference. Fort Lauderdale, FL. 2016. Oral
- **Chlus A.,** Dierssen H**.** *Discrimination of floating coastal vegetation using airborne hyperspectral imagery.* NASA Ocean Color Remote Sensing Team Conference. Washington D.C. 2014. Poste

Reviewer for

- ISPRS Journal of Photogrammetry and Remote Sensing
- Journal of Ecology
- Remote Sensing Applications: Society and Environment

Honors and Awards

- Best Forestry Dissertation, UW-Madison   2022
- NASA Data Visualization and Storytelling Competition Runner-up   2019
- Hackaday Prize Semifinalist   2016
- 1ST place UConn CANR Graduate Research Forum   2014
- 1ST place NASA Ames Summer Poster Session   2013

Outreach and Mentoring

- Minorities in Agriculture, Natural Resources and Related Sciences   2017
  Youth Leadership Institute
- Independent study mentor
  Alex Horvath – Biology 152   2017

Technical Skills

- Python, R, C
- Linux/Unix, MacOS, Windows
- GDAL, QGIS, ENVI, Ecognition, ERDAS Imagine, ArcGIS