

TYSON LEE SWETNAM, PH.D.

ADDRESS

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APPOINTMENTS

2018 –	The University of Arizona ➤ Research Assistant Professor of Geoinformatics, BIO5 Institute ➤ Joint Appointment, School of Natural Resources and Environment	Tucson, AZ
2016 – 2018	The University of Arizona ➤ Science Analyst II, BIO5 Institute	Tucson, AZ
2015 – 2016	The University of Arizona ➤ Associate Research Scientist, School of Natural Resources and Environment	Tucson, AZ
2015	University of Utah ➤ Research Associate, Department of Geology and Geophysics	Salt Lake City, UT
2014 – 2015	The University of Arizona ➤ Postdoctoral Associate, Department of Geosciences	Tucson, AZ
2012 – 2013	The University of Arizona ➤ Graduate Research Assistant, School of Natural Resources and Environment	Tucson, AZ
2008 – 2012	United States Department of Agriculture, Forest Service ➤ Fire Management Specialist, Coronado National Forest, Supervisor's Office	Tucson, AZ

EDUCATION

2013	School of Natural Resources and Environment, The University of Arizona ➤ Doctor of Philosophy Watershed Management ➤ Remote Sensing & Spatial Analysis Minor ➤ Dissertation title " <i>Cordilleran forest scaling dynamics and disturbance regimes quantified by aerial lidar</i> "	Tucson, AZ
2006	School of Natural Resources and Environment, The University of Arizona ➤ Master of Science Watershed Management ➤ GIS Technical Certificate ➤ Thesis title " <i>Fire Regime Condition Class Accuracy: A comparison to tree-ring fire histories</i> "	Tucson, AZ
2002	Ecology and Evolutionary Biology, The University of Arizona ➤ Bachelor of Science	Tucson, AZ

33. Yang, D., B.D. Morrison, K.J. Davidson, et al. (2022). Remote sensing from unoccupied aerial systems: Opportunities to enhance Arctic plant ecology in a changing climate. *Journal of Ecology*, 00, 1– 24. <https://doi.org/10.1111/1365-2745.13976>
32. Shuman, J.K., J.K. Balch, R.T. Barnes, et al. (2022) Reimagine fire science for the anthropocene, PNAS Nexus, Volume 1, Issue 3, July 2022, pgac115, <https://doi.org/10.1093/pnasnexus/pgac115>
31. Nagy, R.C., J.K. Balch, E.K. Bissell, et al. (2021) Harnessing the NEON data revolution to advance open environmental science with a diverse and data-capable community. *Ecosphere* 12(12):e03833. <https://doi.org/10.1002/ecs2.3833>
30. Rengers, F.K., L.A. McGuire, J.W. Kean, et al. (2021) Movement of sediment through a burned landscape: Sediment volume observations and model comparisons in the San Gabriel Mountains, California, USA - *Journal of Geophysical Research: Earth Surface*, 2021 <https://doi.org/10.1029/2020JF006053>
29. Guo, W., M.E. Carroll, A. Singh, et.al. (2021) UAS-Based Plant Phenotyping for Research and Breeding Applications. *Plant Phenomics*, vol. 2021, Article ID 9840192, 21 pages, 2021. <https://doi.org/10.34133/2021/9840192>
28. Sahneh, F., M.A. Balk, M. Kisley, et al. (2021) Ten simple rules to cultivate transdisciplinary collaboration in data science. *PLoS Comput Biol* 17(5): e1008879. <https://doi.org/10.1371/journal.pcbi.1008879>
27. Swetnam, T.L., S.R. Yool, S. Roy & D.A. Falk (2021) On the Use of Standardized Multi-Temporal Indices for Monitoring Disturbance and Ecosystem Moisture Stress across Multiple Earth Observation Systems in the Google Earth Engine. *Remote Sens.* 2021, 13, 1448. <https://doi.org/10.3390/rs13081448>
26. Gillan, J. K., G.E. Ponce-Campos, T.L. Swetnam, et al. (2021). Innovations to expand drone data collection and analysis for rangeland monitoring. *Ecosphere*, 12(7). <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/ecs2.3649>
25. Martínez-Meyer, E., A. González-Bernal, J.A. Velasco, et al. (2020) Rangewide habitat suitability analysis for the Mexican wolf (*Canis lupus baileyi*) to identify recovery areas in its historical distribution. *Divers Distrib.* 2020; 00: 1– 13. <https://doi.org/10.1111/ddi.13222>
24. Nüst, D., D. Eddelbuettel, D. Bennett, et al. (2020). The RockerVerse: Packages and Applications for Containerization with R. *R Journal* 08-2020. <https://doi.org/10.32614/RJ-2020-007>
23. Ponsero A., R. Bartelme, G. de Oliveira Almeida, et al. (2020) Ten simple rules for organizing a data science workshop. *PLoS Comput Biol* 16(10): e1008226. <https://doi.org/10.1371/journal.pcbi.1008226>
22. Gedir, J.V., J.W. Cain, T.L. Swetnam, P.R. Krausman, & J.R. Mogart (2020) Extreme drought and adaptive resource selection by a desert mammal. *Ecosphere* <https://doi.org/10.1002/ecs2.3175>
21. Mitra, B., S.A. Papuga, M.R. Alexander, T.L. Swetnam, & N. Abramson (2019) Allometric relationships between primary size measures and sapwood area for six common tree species in snow-dependent ecosystems in the Southwest United States. *Journal of Forestry Research* 1-10. <https://doi.org/10.1007/s11676-019-01048-y>
20. Gillan, J., M.P. McClaran, T.L. Swetnam, & P. Heilman (2019) Estimating forage utilization with drone-based photogrammetric point clouds. *Journal of Rangeland Ecology & Management* <https://doi.org/10.1016/j.rama.2019.02.009>
19. Norman, L.M., J.B. Callegary, L. Lacher, et al. (2019) Modeling Riparian Restoration Impacts on the Hydrologic Cycle at the Babacomari Ranch, SE Arizona, USA. *Water* 11, 381. <https://doi.org/10.3390/w11020381>
18. Hancock, D., C. Stewart, M. Vaughn, et al. (2018) Jetstream—Early operations performance, adoption, and impacts. *Concurrency and Computation: Practice and Experience* <https://doi.org/10.1002/cpe.4683>
17. Perdrial, J., P.D. Brooks, T.L. Swetnam, et al. (2018) A net ecosystem carbon budget for snow dominated forested headwater catchments: linking water and carbon fluxes to critical zone carbon storage. *Biogeochemistry* 138: 225. <https://doi.org/10.1007/s10533-018-0440-3>

16. Swetnam, T.L., J.K. Gillan, T.T. Sankey, et al. (2018) Considerations for Achieving Cross-Platform Point Cloud Data Fusion across Different Dryland Ecosystem Structural States. *Front. Plant Sci.* 8:2144. <https://doi.org/10.3389/fpls.2017.02144>
15. Pelletier J.D., G.A. Barron-Gafford, et al. (2018) Which way do you lean? Using slope aspect variations to understand Critical Zone processes and feedbacks. *Earth Surf. Process. Landforms*, <https://doi.org/10.1002/esp.4306>
14. Evans, M.E.K., D.A. Falk, A. Arizpe, et al. (2017) Fusing tree-ring and forest inventory data to infer influences on tree growth. *Ecosphere* 8(7):e01889. doi:10.1002/ecs2.1889
13. Swetnam, T.L., P.D. Brooks, H.R. Barnard, A.A. Harpold & E.L. Gallo (2017) Topographically driven differences in energy and water constrain climatic control on forest carbon sequestration. *Ecosphere* 8(4):e01797. <https://doi.org/10.1002/ecs2.1797>
12. Pelletier, J.D., & T.L. Swetnam (2017) Asymmetry of weathering-limited hillslopes: the importance of diurnal covariation in solar insolation and temperature. *Earth Surf. Process. Landforms*, 42: 1408–1418. <https://doi.org/10.1002/esp.4136>
11. Sankey, T.T., J. McVay, T.L. Swetnam, M.P. McClaran, P. Heilman & M. Nichols (2017) UAV hyperspectral and lidar data and their fusion for arid and semi-arid land vegetation monitoring. *Remote Sens Ecol Conserv.* <https://doi.org/10.1002/rse2.44>
- 10.* Swetnam T.L., C.D. O'Connor & A.M. Lynch (2016) Tree morphologic plasticity explains deviation from metabolic scaling theory in semi-arid conifer forests, southwestern USA. *PLoS One* 11(7):e0157582. <https://doi.org/10.1371/journal.pone.0157582>
- 9.* Swetnam, T.L., A.M. Lynch, D.A. Falk, D.P. Guertin & S.R. Yool (2015) Discriminating disturbance from natural variation with LiDAR in semi-arid forests, Southwestern USA. *Ecosphere* 6(6):97. <http://dx.doi.org/10.1890/ES14-00384.1>
8. Harpold, A.A., J.A. Marshall, S.W. Lyon, et al. (2015) Laser vision: lidar as a transformative tool to advance critical zone science. *Hydrology & Earth System Science* 19, 2881-2897. <https://doi.org/10.5194/hess-19-2881-2015>
7. Rasmussen, C., J.D. Pelletier, P.A. Troch, T.L. Swetnam & J. Chorover (2015) Quantifying topographic, vegetation, and disturbance effects on the transfer of energy and mass to the critical zone. *Vadose Zone* <https://doi.org/10.2136/vzj2014.07.0102>
- 6.* Swetnam, T.L., D.A. Falk, A.M. Lynch & S.R. Yool (2014) Estimating individual tree mid-and understory rank-size distributions from airborne laser scanning in semi-arid forests. *Forest Ecology and Management* 330, 271-282. <https://doi.org/10.1016/j.foreco.2014.07.011>
- 5.* Swetnam, T.L. & D.A. Falk (2014) Allometric scaling rules to limit commission error in aerial LiDAR forest inventories. *Forest Ecology and Management* 323, 158-167. doi: 10.1016/j.foreco.2014.03.016
- 4.* Harpold, A.A., Q. Guo, N. Molotch, et al. (2014) LiDAR-Derived Snowpack Datasets from Mixed Conifer Forests Across the Western US. *Water Resources Research* 50(3), 2749-2755. <https://doi.org/10.1002/2013WR013935>
- 3.* Pelletier, J.D., G.A. Barron-Gafford, D.D. Breshears, et al. (2013) Coevolution of nonlinear trends in vegetation, soils, and topography with elevation and slope aspect: A case study in the sky islands of southern Arizona. *Journal of Geophysical Research: Earth Surface* 1-18. <https://doi.org/10.1002/jgrf.20046>
- 2.* Swetnam, T.L., D.A. Falk, A. Hessel & C. Farris (2011) Reconstructing landscape pattern of historic fires and fire regimes. In *The Landscape Ecology of Fire*, editors D MacKenzie, D.A. Falk, C. Miller. pp. 165-192. Springer Netherlands, 2011. https://doi.org/10.1007/978-94-007-0301-8_7
- 1.* Swetnam, T.L., & P.M. Brown (2010) Comparing Fire Regime Condition Class (FRCC) Vegetation Models to Tree Ring Data. *International Journal of Wildland Fire* 19, 1-13. <http://doi.org/10.1071/WF08001>

*based on work done as a graduate student.

PRE-PRINTS

Bartelme, R.P., et al. (2020) Do Androids Dream of Electric Sorghum?: Predicting Phenotypes from Multi-scale Genomic and Environmental Data Using Neural Networks and Knowledge Graphs. OSF Preprints, 18 Aug. 2020. Web. <https://doi.org/10.31219/osf.io/yyx7t9>

THESES, PROCEEDINGS, WORKING PAPERS, & TECHNICAL REPORTS

- Martínez-Meyer E., A. González-Bernal, J.A. Velasco, et al. (2017) Mexican wolf habitat suitability analysis in historical range in the Southwestern US and Mexico. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico, USA.
https://mexicanwolves.org/uploads/RP04-2017_FWS-MexicanWolfHabitatSuitabilityAnalysis.pdf
- Swetnam, T.L., J.D. Pelletier, C. Rasmussen, et al. (2016) Scaling GIS analysis tasks from the desktop to the cloud utilizing contemporary distributed computing and data management approaches: A case study of project-based learning and cyberinfrastructure concepts. In Proceedings of the XSEDE16 Conference on Diversity, Big Data, and Science at Scale, p. 21. ACM, 2016. <https://doi.org/10.1145/2949550.2949573>
- Swetnam, T.L. & D.A. Falk (2015) Carbon Cycling in Southwestern Forests: Reservoirs, Fluxes, and the Effects of Fire and Management. ERI Working Paper #35. Flagstaff, AZ: Ecological Restoration Institute and Southwest Fire Science Consortium, Northern Arizona University. 15 p.
https://swfireconsortium.org/wp-content/uploads/2015/09/Working_Papers_35_WEB_final2.pdf
- *Swetnam, TL (2013) Cordilleran forest scaling dynamics and disturbance regimes quantified by aerial LiDAR. (Doctoral Dissertation, University of Arizona) 277 p. <https://www.fs.usda.gov/treearch/pubs/48047>
- *Swetnam, T.L., D.P. Guertin, E. Canfield, & A. Kimoto (2013) Riparian vegetation characterization of the Lower Santa Cruz River and Ciénega Creek through remotely sensed multi-sensor data fusion. Addendum to the ‘Historical Conditions of the Effluent-Dependent Santa Cruz River, Pima County.
https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Flood%20Control/Engineering/Planning/Lower%20Santa%20Cruz%20River%20Living%20River%20Project/Riparian_vegetation_characterization_of_the_Lower_Santa_Cruz_Swetnam_et_al_2013.pdf
- *O'Connor C.D., D.A. Falk, A.M. Lynch, C.P. Wilcox, T.W. Swetnam & T.L. Swetnam (2013) Growth and Demography of Pinaleno High Elevation Forests. RJVA 07-JV-11221615317. Rocky Mountain Research Station, Ft. Collins, CO. <https://www.fs.usda.gov/treearch/pubs/41787>
- *Swetnam, T.L., & B. Powell (2010) Example of the use of LiDAR for monitoring vegetation characteristics: An example from the Ciénega Creek Nature Preserve. Supplement to the Pima County Ecological Monitoring Program: Phase II Monitoring Plan Summary.
- *Swetnam, T.L. (2006) Fire Regime Condition Class Accuracy: A comparison to tree-ring fire histories. (M.S. Thesis, University of Arizona. 111 p.)

*based on work done as a graduate student.

CURRENT RESEARCH GRANTS & ROLE(s)

[NSF DBI-2153040](#), \$1,457,000 (total \$19,999,990) 8/1/22 - 7/31/27, “Environmental Data Science Innovation and Inclusion Lab (ESIIL): Accelerating Discovery by Fostering an Open and Diverse Earth Data Revolution” Site Principal Investigator (UArizona Sub-Awardee). Supervisory Lead CyberInfrastructure Team. 15% effort.

[NSF DBI-2152673](#), \$45,844 total, 9/1/22 - 8/31/25, “Collaborative Research: High-Resolution Aerial Forest Mapping Infrastructure and Database to Support Forest and Disturbance Ecology Research” Principal Investigator, Supervisory Lead CyberInfrastructure Team. 2% effort.

[USDA NIFA 2021-67021-35329](#), \$1,300,222 total, 9/1/21 - 8/31/26, “AIIRA: AI Institute for Resilient Agriculture” Senior Personnel, Lead CyberInfrastructure Liaison. 5% effort.

[NSF ITE-2134892](#), \$5,000,000 total, 10/1/21 - 9/30/23, “Track D: Hidden Water and Extreme Events: HydroGEN, A Physically Rigorous Machine Learning Platform for Hydrologic Scenario Generation” Senior Personnel, CyberInfrastructure Liaison. 5% effort.

[NSF AGS-2054516](#), \$143,148 total, 6/1/21 - 5/31/23, “Collaborative Research: OpenDendro - Advanced Open-source Tools for Paleoenvironmental Reconstruction” Co-Principal Investigator, Supervisory Lead Data Science & Software Engineering. 18% effort.

[NSF DBI-1743442](#), \$14,999,752 total, 8/1/18 - 7/31/23, “CyVerse: Cyberinfrastructure for the Life Sciences” Co-Principal Investigator, Supervisory Lead Data Science and Education and Outreach Teams. 50% effort.

[USDA NIFA 2020-68013-30934](#), \$497,481 total, 6/1/20 - 5/31/23, “High Intensity Phenotyping Sites: A Multi-Scale Multi-Modal Sensing and Sense-Making Cyber-Ecosystem for Genomes to Fields” Senior Personnel, CyberInfrastructure Liaison. 5% effort.

[USDA NIFA 2019-67021-29938](#), \$499,927 total, 9/1/19 - 8/31/22, “FACTS: A Scalable Cyber Ecosystem for Acquisition, Curation, and Analysis of MultiSpectral UAV Image Data” Senior Personnel, CyberInfrastructure Liaison. 5% effort.

PRIOR RESEARCH GRANTS & ROLE(s)

[University of Arizona Internal, State of Arizona TRIE](#), \$72,000, 11/1/21 - 8/31/22, “Assessing the Climate Change Mitigation Potential of Diverse Vegetation Types in the Pinaleno Mountains, Arizona” Co-Principal Investigator, CyberInfrastructure Liaison. 2% effort.

[NSF DMS-1839307](#), \$199,859 total, 10/1/18 - 7/31/22, “TRIPODS+X:VIS: Data Science Pathways for a Vibrant TRIPODS Commons at Scale” Senior Personnel, Coordinator and Contributor. 2% effort.

[NSF DBI-1940062](#), \$483,022 total, 10/1/19 - 7/31/22, “Collaborative Research: Converging Genomics, Phenomics, and Environments Using Interpretable Machine Learning Models” Co-Principal Investigator, Supervisor CyberInfrastructure Team” Co-Principal Investigator, Supervisory Lead CyberInfrastructure Team. 18% effort.

[NSF ITE-2040542](#), \$1,000,000 total, 9/15/20 - 5/31/22, “NSF Convergence Accelerator - Track D: Hidden Water and Hydrologic Extremes: A Groundwater Data Platform for Machine Learning and Water Management” Senior Personnel, CyberInfrastructure Liaison. 5% effort.

Nature Conservancy, \$19,500 total, 7/30/19 - 12/31/2020, “Jemez River Corridor Forest Inventory” Principal Investigator, Lead. 5% effort.

[USDA NIFA 2022-13610-012-07S](#), \$449,025 total, 1/1/15 - 12/31/20, “LTAR-NEON Collaboration to Quantify Rangeland Vegetation Production” Senior Personnel, Postdoctoral Researcher. 100-0% effort over time.

[Bureau of Land Management](#), \$250,000 total, 7/7/16 - 3/26/20, “CESU Lower Gila River Vegetation Mapping” Senior Personnel, GIS consultant. 5% effort.

Arizona Game & Fish Department, \$10,000 total, 8/1/16 - 8/31/17, “Remote Sensing Support and Consultation for Evaluation of Wolf Habitat Suitability in Mexico and Southwestern United States” Principal Investigator, Lead. 10% effort.

Pima County Regional Flood Control District, \$17,186 total. 9/1/12 - 8/31/13, “Sediment Transport Analysis and Assessment of Vegetation Characteristics in the Santa Cruz River” Co-Principal Investigator, Graduate Student. 15% effort.

[USDA NIFA ARZT-1392420-M12-183](#), 7/1/08 - 12/31/12, “Multi-scale controls on wildland fire in mountains of Western North America” Senior Personnel, Graduate Student. 100% effort.

Pima County Ecological Monitoring Program, \$2,500 total. 1/1/13 - 9/30/13, “Analysis of aerial lidar in the Santa Cruz River and Cienega Creek” Principal Investigator, Lead. 15% effort.

Bureau of Land Management National Interagency Fuels Team, \$81,000 total. 8/31/04 - 7/30/06, “Reference Conditions for Fire Regime Condition Class” Co-Principal Investigator, Graduate Student. 100% effort.

AWARDS

➤ Technology Research Initiative Fund (TRIF) Research Advancement Award, \$78,000	1/2022
➤ TRIF Water, Environmental, and Energy Solutions (WEES) Equipment Improvement Award, \$53,000	7/2019
➤ Scholarly Achievement Award, School of Natural Resources and Environment	5/2014
➤ Kel M. Fox Award Outstanding Graduate in Watershed Management	9/2012
➤ President’s award UA Grad. & Professional Student Council: Best Graduate Exhibit	12/2009
➤ School of Natural Resources and Environment Graduate Teaching Assistant of the Year	5/2009

CONFERENCE PROCEEDINGS & PRESENTATIONS

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- * invited
- *Swetnam, T.L., C. Lizarraga (2022) “Introduction to Cloud Native & Analysis Ready Data Formats” Arizona Geospatial Information Council Meeting, Prescott AZ Sept 2
- *Swetnam, T.L. (2022) “Arizona Society for Range Management: Cloud Native Science” V-V Ranch, Arizona. August 4
- *Swetnam, T.L., & E. Skidmore (2022) “CyVerse: Cyberinfrastructure for Data Driven Discovery. Open Source Science for ESO Mission Processing Study” Jet Propulsion Laboratory, NASA. Virtual, Mar 4
- *Swetnam, T.L., (2022) “CyVerse: Cyberinfrastructure for Data Driven Discovery” CyberInfrastructure 4 Major Facilities (CI4MFs) 2022, Redondo Beach, CA Mar 1
- Webley, P.W., D.V. Sullivan, D. Durden & T.L. Swetnam (2021) “TH45E: Autonomous Scientific Observations: Building Reproducible Research Today and Into the Future” American Geophysical Union (AGU) Town Hall. Virtual, New Orleans, LA, 8 Dec.
- *Swetnam, T.L., (2021) “The Airborne Environmental Observations Laboratory for Unoccupied Systems (AEOLUS)” Research Insights in Semi-Arid Ecosystems (RISE), Tucson AZ, 17 Oct
- *Swetnam, T.L., (2021) “Developing Foundational Open Science Skills (CyVerse Skills Tutorial)” Northern Arizona University School of Information, Computing, and Cyber Systems. Apr 5. Virtual.
- Webley, P.W., R.P. Dahlgren, T.L. Swetnam & D. Durden (2020) “TH058: Methods and Processes Using Small Unmanned Aircraft Systems: Sharing and Reusing Lessons Learned Across Scientific Disciplines” AGU Fall Meeting 2020.

- Swetnam, T.L., D. LeBauer, C.F. Vardeman & D. Durden (2020) “NH028-0007 Wrestling the four V’s of small unoccupied aerial systems data in the cloud and on national cyberinfrastructure” AGU Fall Meeting 2020.
- *Swetnam, T.L., (2020) NVIDIA GPU Cloud “Panel: Simplifying HPC Workflows with containers” Dec 3. Virtual
- Thessen, A.E., R. Bartelme, M. Behrisch, et al. (2020) “Predicting phenotype from multi-scale genomic and environment data using neural networks and knowledge graphs” ESA Annual Meeting (August 3-6)
- *Swetnam, T.L., (2020) “CyVerse Learning Institute’s foundational open science skills workshop” Bioinformatics Open Source Conference (BOSC). Virtual. July 20.
- Skidmore, E., T.E., R. Walls, T.L. Swetnam, N. Merchant & E. Lyons (2020) “CyVerse: Informatics Cyberinfrastructure for the Earth Sciences” Earth Science Information Partners 2020 Summer meeting, Virtual. Jul 2
- Thessen, A.E., M. Behrisch, E.J. Cain, et al. (2020) “Predicting Phenotype from Multi-Scale Genomic and Environment Data using Neural Networks and Knowledge Graphs: An Introduction to the NSF GenoPhenoEnvo Project” Plant and Animal Genome XXVIII Conference Jan 11-15
- Swetnam, T.L., (2020) “The Airborne Environmental Observations Laboratory for Unoccupied Systems (AEOLUS)” Plant and Animal Genome XXVIII Conference Jan 11-15
- Holifield-Collins C., S.M. Skirvin, G. Armendariz, et al. (2019) “GC23G-1430 Is a Picture Worth a Thousand Measurements? A Comparison of Drone Systems and Data Processing Methods for Rangeland Vegetation Monitoring” AGU Fall Meeting 2019
- Swetnam, T.L., (2019) “All the Things; Capitalizing on Big Data from Devices, Drones, and Cubesats” Arizona Geospatial Information Council Symposia Oct 1 2019, Prescott AZ
- Swetnam, T.L., D.S. LeBauer & N. Merchant (2019) “Looking toward an Institute to support both users and creators of geospatial software” Geospatial Software Institute Workshop 3, 15 Jul
- *Swetnam, T.L., (2019) “The ability and audacity to scale your science with free and open cyberinfrastructure” Santa Fe Institute, Jul 5, Santa Fe NM
- Devisetty U.K., T.L. Swetnam, I. McEwen, J. Wregglesworth & N. Merchant (2019) “Get a Grip on Your Data Science Tools with CyVerse VICE (Visual Interactive Computing Environment)” Plant and Animal Genome XXVII Conference Jan 12-16
- Brooks P.D., H.R. Barnard, J.A. Biederman, et al. (2018) “H21A-06 Multi-disciplinary Insights into the Effects of Vegetation Change on Hydrologic Partitioning” AGU Fall Meeting, Washington DC, Dec 11
- *Swetnam, T.L., (2018) “The problem of pattern and scale in semi-arid ecosystem ecology: Does big data help or hurt?” Research Insights in Semi-Arid Ecosystems (RISE), Tucson AZ, 10 Oct
- Swetnam, T.L., B. Hickson, B. Joyce & R. Walls (2018) “Ensuring best practices for reproducibility of long tail data in intensive geospatial scientific research.” Geospatial Software Institute Workshop 2, 17 July
- *Swetnam, T.L., (2018) “Vertical Scaling of Remote Sensing” Invited Talk Battelle Inc. NEON, Boulder CO, 12 July.
- Swetnam, T.L., (2018) “The Ecosystem Moisture Stress Index” Madrean Conference, Tucson AZ, 17 May.
- Swetnam, T.L., (2018) “Unleashing your inner data scientist: The ability and audacity to scale your science with free and open cyberinfrastructure” TRIPODS-X Workshop, Tucson AZ 26 Feb
- Swetnam T.L., (2018) “Portable, scalable, high throughput geospatial analyses with Singularity containers on cloud and high performance computing” Phenome, Tucson AZ, 15 Feb
- Swetnam, T.L., (2018) “Cyberinfrastructure for scientific reproducibility in data-intensive geospatial research and education”. Geospatial Software Institute Workshop 1, 29 Jan
- Swetnam, T.L., R. Walls & N. Merchant (2017) “CyVerse Data Commons: Lessons learned in cyberinfrastructure management and data hosting from the Life Sciences” AGU Fall Meeting 2017, San Francisco CA
- Walls, R., B. Joyce, Swetnam, T.L. & U.K. Devisetty (2017) “Analyzing and managing ecological data with CyVerse” Ecological Society of America Meeting, Portland OR, 10 Aug.
- Swetnam, T.L., (2017) “A Gentle Introduction to Forestry Science Workflows in the Era of Cloud Computing” Society of American Foresters Southwestern Section Meeting Northern Arizona Chapter April 27-29, 2017 Flagstaff, AZ

- *Swetnam, T.L., (2017) “CyVerse: Transforming science through data driven discovery” Northern Arizona University. School of Forestry. Flagstaff AZ Apr 5
- *Swetnam, T.L., (2017) “Cyber-Cowboys on the Range” Invited seminar, Santa Rita Experimental Range Florida Station, Green Valley AZ, 18 Mar.

MEDIA

2022

<https://cyverse.org/new-abor-grant-will-utilize-cyverse-technology-and-expertise-to-mitigate-wildfire-risk> - “New ABOR Grant Will Use CyVerse's Technology and Expertise to Mitigate Wildfire Risk”

<https://cyverse.org/esiil-center> - “New Center Brings Environmental Data Science Home”

<https://www.ucdavis.edu/climate/blog/monitoring-forest-threats-new-open-forest-observatory> - “Monitoring Forest Threats with New Open Forest Observatory”

<https://news.ucar.edu/132859/wildfire-experts-provide-guidance-new-research-directions> - “Wildfire experts provide guidance for new research directions”

https://cyverse.org/deep_learning_workshop - “A Deep Dive into Deep Learning Techniques: A First-of-its-kind Hands-on Workshop”

2021

<https://cyverse.org/foundational-friendships-lead-to-open-ecological-science> “Foundational Friendships Lead to Open Ecological Science”

<https://cyverse.org/from-landforms-to-landslides-students-investigate-earth-surface-processes-with-cyverse> “From Landforms to Landslides, Students Investigate Earth Surface Processes with CyVerse”

<https://bio5.org/news/study-shows-impacts-deforestation-and-forest-burning-biodiversity-amazon> “Study Shows Impacts of Deforestation And Forest Burning On Biodiversity In The Amazon” BIO5 Institute News

<https://bio5.org/news/hydrogen-project-awarded-5m-model-national-water-resources-using-machine-learning-1> “HydroGEN Project Awarded \$5M To Model National Water Resources Using Machine Learning” BIO5 Institute News

<https://bio5.org/news/cyverse-welcomes-new-project-leader-eric-lyons> “CyVerse Welcomes New Project Leader Eric Lyons” BIO5 Institute News

<https://www.nvidia.cn/on-demand/session/iscdigital2021-iscd2102/> &

<https://www.youtube.com/watch?v=hanqTQui498> “Leveraging AI and NVIDIA GPUs to Advance Research in Crop Production”

<https://resources.nvidia.com/en-us-ngc/ngc-uofa-success-story?lx=699wyX> “NVIDIA University of Arizona Success Story”

<https://resources.nvidia.com/en-us-ngc/ngc-simplifying-and-accelerating-hpc-workflows?lx=699wyX> “NVIDIA GPU Cloud Simplifying and Accelerating HPC Workflows”

2020

<https://cyverse.org/new-cyverse-node-brings-easier-collaboration-to-austrian-scientists> “New CyVerse Node Brings Easier Collaboration to Austrian Scientists”

<https://www.youtube.com/watch?v=da2gKRdMeXY> “This 30-Ton Robot Could Help Scientists Produce the Crops of the Future” Wall Street Journal

2019

<https://www.xsede.org/-/ecss-program-accelerates-xsede-user-s-career-in-geoinformatics> “ECSS Program Accelerates XSEDE User’s Career in Geoinformatics”

2018

<https://cyverse.org/Observing-Ecology-with-CyVerse-Atmosphere> “Observing Ecology with CyVerse Atmosphere”

<https://borderlore.org/the-culture-of-wildfire-perceptions-practices-policies/> “The Culture of Wildfire: Perceptions, Practices, Policies”

<https://cyverse.org/CyVerse-Hosts-2018-Earth-Science-Information-Partners> “CyVerse Hosts 2018 Earth Science Information Partners”

<https://bio5.org/news/summer-interns-work-drone-datasets-rna-analyses-0> - “Summer Interns Work With Drone Datasets, RNA Analyses” BIO5 Institute News

2017

<https://www.azpm.org/s/49986-mountain-forests-capture-carbon-from-atmosphere/> “Carbon Capture from Trees? It’s All Downhill From Here, Study Says” Arizona Public Media

<https://bio5.org/news/how-mountains-hold-carbon-and-do-good-job-it-2> “How Mountains Hold Carbon (And Do A Good Job of It)” BIO5 Institute News

<https://sciencenode.org/feature/riding-the-jetstream-to-the-treetops.php> “Riding the Jetstream to the treetops” Science Node

PROFESSIONAL SERVICE (EXTERNAL)

- Professional Society Memberships: American Geophysical Union (AGU), Ecological Society of America (ESA), Critical Zone Exploration Network (CZEN), Association for Fire Ecology (AFE)
- Journal Reviewer: Canadian Journal of Forest Research, Ecological Applications, Ecosphere, International Journal of Wildland Fire, Journal of Environmental Informatics, PLOS One, Remote Sensing, Remote Sensing of Environment.
- USDA NIFA Panelist
- National Science Foundation (NSF) Panelist: Computer Information and Science Engineering (CISE) 2021, Division of Biological Infrastructure (DBI) 2020
- NASA Transform Open Science (TOPS) subject matter expert 2022
- NSF Cloud Infrastructure Working Group Member, CI-Compass 2021 - Present
- NEON Science Summit Steering Committee (NSF) 10/2019
- NEON Lidar Technical Working Group Member 2018 - Present

- Quantitative Undergraduate Biology Education and Synthesis (QUBES) 2018
- The Carpentries, Instructor and Geospatial Lessons Maintainer 2017 - Present
- Earth Science Information Partners (ESIP) CyVerse Representative 2019 - Present
- NSF EarthCube Standing Committee Member 2017 - 2019

PROFESSIONAL SERVICE (UNIVERSITY)

- Data Science Resource and Training Steering Committee Member 2019 - Present
- Research Bazaar Arizona Steering Committee Member 2018 - Present
- KEYS Summer Internship Program Student Advisor 2019 - Present

TEACHING AND STUDENT MENTORSHIP

Technical Workshops

- NEON Remote Sensing, Research Insights in Semi-Arid Ecosystems (RISE) Conference 2020 - Present
- CyVerse: Foundations of Open Source Science (Virtual, in-person) 2019 - Present
- CyVerse: Container Camp (Virtual, in-person) 2018 - Present
- TRAC-TRAIN AI Workshop, Iowa State University (Virtual) 4/2022
- CyVerse: Overview Technical University of Graz, Austria 11/2019
- NEON Science with CyVerse, Boulder CO 2/2019
- Geospatial Carpentry, The University of Arizona 2018 - Present
- Software Carpentry, The University of Arizona 2017 - Present

University Credit Courses

- Introduction to Wildland Fire (RNR 355/455), fall semester. 8/2006 – 12/2008
- Introductory Biology Lab (ECOL 181/182), fall, spring, and summer semester 8/2005 – 7/2006

Guest Lectures

- Open Source GIS GIST604B, The University of Arizona 11/2018 - Present
- KEYS High School Intern Program, The University of Arizona 7/2018 - Present
- M-580 Fire in Ecosystem Management, National Advanced Fire & Resource Institute 5/2018 - Present
- Ecological Forecasting, GEOG 595E, The University of Arizona 9/2019
- Artificial Intelligence for Health Medicine SIE578, The University of Arizona 2/2019
- NEON Data Institute on Reproducible Workflows, Boulder CO 7/2018
- Resource Mapping RNR422/522, The University of Arizona 8/2015 - 5/2017
- Remote Sensing GEOG330, The University of Arizona 10/2017

Student Supervisor, Committee Member, Postdoctoral Researcher Advising

- Postdoctoral Researchers: R. Bartelme (2020), M. Culshaw-Maurer (2021)
- Graduate supervisor/mentor/advising: L. Carpenter (Masters-GIST, 2012), J. Kennedy (Masters-GIST, 2014), A. Ruff (Masters-GIST, 2017), A. Brischke (MS, School of Natural Resources and Environment, 2015), S. Hendryx (MS, Geography, 2017), J. Gillan (PhD, School of Natural Resources and Environment, 2019), P.L. Narayan (MS, Computer Science, 2018), D. Slovikosky (MS, Computer Science, 2018), B. LaSala (MS, Mining and Geological Engineering, 2020), J. Lindsay (MS, Computer Science, 2021)
- Undergraduate supervisor: J. Mack (NASA Space-Grant intern, 2010), D. Wilcox (NASA Space-Grant intern, 2014), N. Callahan (Computer Science, 2016), K. Pope (NSF UWIN, 2017), C. Prigge (Computer Science, 2021), V. Mehta (Computer Science 2020), J. van der Leeuw (Computer Science Mathematics, 2021), K. Henry (Computer Science, 2021), A. Bande (Data Science, Statistics, 2022), S. Jackson (Computer Science, Mathematics, 2023), I. Ale (Computer Science, 2023), E. Hagyard (Software Engineering, 2023).

- High School: D.S. Lee (BASIS Oro Valley High School, 2018), E. Joshi (BASIS Oro Valley High School, 2020), S. Ramkumar (Hamilton High School, 2021), E. LeRoy (University High, 2022).