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# Chris Guiterman

Forest and fire ecology | Vegetation type conversion | Forest vulnerabilities to climate change | Use-inspired research | Applications in dendrochronology

# Education

- 2016 Ph.D. University of Arizona, School of Natural Resources and the Environment, Tucson, AZ
- 2009 M.S. University of Maine, Orono, School of Forest Resources, Orono, ME
- 2005 B.A. Bates College, Geology, Lewiston, ME

# Work experience

- 2017 Research Scientist. Laboratory of Tree-Ring Research, University of Arizona, Tucson, AZ
- 2010–2016 Graduate Research Associate; Course Instructor; Teaching Assistant. University of Arizona, Tucson, AZ
- 2007–2009 Graduate Research Assistant; Teaching Assistant. University of Maine, Orono, ME
- 2005–2007 Forest Inventory Technician. Camp II Forest Management, Joseph, OR

# Grants & Fellowships

Total research funding: \$1,003,666

Note: I served as the project lead and/or PI unless otherwise noted.

- Submitted burnrData: The North American tree-ring fire history database in R, USGS Community for Data Integration, \$49,964.
  - o with Ellis Margolis
- In-prep (2nd Feedbacks and scale at an ancient wildland-urban interface, NSF Dyround) namics of Integrated Socio-Environmental Systems, \$1,599,949.
  - o with Chris Roos (PI). UofA (Guiterman co-PI) share \$362,117.
  - 2021–2023 Resilience in a longleaf savanna: Historical tree recruitment in response to frequent disturbance and climate variability, Wade Research Foundation, \$75,000.
    - o with Monica Rother

- 2019–2021 Integrated watershed hazard assessment for wildfire, floods, and debris flows on the Navajo Nation, BIA Tribal Resilience Program, \$150,000.

  o with Ann Youberg
- 2020–2021 Designing Climate Adaptation Plans for the forests of the Navajo Nation, Southwest Climate Adaptation Science Center, \$225,328.

  o with Margaret Evans (PI) and Justin DeRose
- 2020–2021 A grove of stories: Dendrochronology of the Wheatfields Lake peeltree grove on the Navajo Nation, University of Arizona Foundation Small Grants Program, \$20,000.
  - o with William Tsosie (Navajo Historic and Heritage Preservation Department)
- 2017–2018 Dendrochronology study for Wupakti Residence 1 viga preservation,
  National Park Service, Wupakti National Monument, \$14,377.

  o with Ron Towner (PI)
- 2017–2018 Sourcing construction timbers at Aztec Ruins National Monument, Western National Parks Association. Grant #17-01, \$7,400.

  o with Ron Towner (PI)
- 2017–2018 Ancient Trees and global change: A vulnerability assessment of oldgrowth forests on the Navajo Nation, BIA Tribal Climate Resilience Program, \$216,694.

  o with Ellis Margolis, Craig Allen, and Alex Becenti
- 2015–2017 Climate drivers of tree growth across Navajo Forestlands: Incorporating dendrochronology into Continuous Forest Inventory to improve management strategies for a future climate, BIA Bureau of Forest Resource Planning and the Navajo Nation, \$99,632.

  o with Ellis Margolis and Thomas Swetnam
- 2014–2016 Fire regimes, demography, and climatic sensitivities of Navajo forest-lands: Insights from the past to inform tribal forest management,  $EPA\ STAR\ Fellowship\ \#\ F13F51318,\ \$84,000.$
- 2013–2015 Forest-to-shrub type conversions: climate-disturbance interactions in the southwestern U.S., USGS Cooperative agreement G13AC00247, \$53,000.

  o with Ellis Margolis (PI) and Craig Allen
- 2014–2015 Climatic sensitivities of Navajo forestlands: Use-inspired research to guide tribal forest management, Climate Assessment of the Southwest (CLIMAS) Fellowship, University of Arizona, \$5,000.
- 2012–2014 Dendrochronological Sourcing of Timbers from the Great Houses of Chaco Canyon, New Mexico, Bandelier National Monument, Desert Southwest CESU. #UAZDS-381, \$10,735.
  - o with Thomas Swetnam, Jeffrey Dean, and Craig Allen

- 2013–2014 Dendroecological analyses of fire-origin shrublands in former conifer forests of the Jemez Mountains, New Mexico, Bandelier National Monument, Desert Southwest CESU #UAZDS-402, \$35,000.
  - o with Ellis Margolis, Thomas Swetnam, and Craig Allen
- 2012–2013 Dendrochronological Sourcing of Timbers from the Great Houses of Chaco Canyon, New Mexico, Western National Parks Association. Grant #13-02, \$7,500.
  - o with Thomas Swetnam, Jeffrey Dean, and Pearce Paul Creasman
  - 2012 Conference travel grant, University of Arizona Graduate and Professional Student Council, \$500.

## Awards and Honors

- 2018 Young Forester of the Year. Southwestern Section of the Society of American Foresters
- 2016 College of Science Scholarship. University of Arizona
- 2016 William G. McGinnies Graduate Scholarship in Arid Land Studies. School of Natural Resources & the Environment, University of Arizona
- 2015 Galileo Circle Scholar. College of Science, University of Arizona
- 2014 Best presentation, School of Earth and Environmental Sciences (SEES) Earthweek competitive plenary session. University of Arizona
- 2014 Andrew Ellicott Douglass Memorial Scholarship. Laboratory of Tree-Ring Research, University of Arizona
- 2011 Graduate College Fellowship. University of Arizona
- 2009 Phi Kappa Phi Honor Society. University of Maine
- 2009 Best Poster Presentation Award. Northeast Society of American Foresters (SAF) Conference Portland, Maine
- 2008 Golden Key International Honor Society. University of Maine
- 2008 Charles E. Schomaker Memorial Scholarship. School of Forest Resources, University of Maine
- 2004 Sigma Xi Honor Society. Bates College

# Courses Taught

#### Lead or co-instructor

- Sum. 2019 Dendrochronology Intensive Summer Course (DISC). Laboratory of Tree-Ring Research, University of Arizona
- Spr. 2014 GEOG 303: Field Study in Environmental Geography. School of Geography and Development, University of Arizona
- Sum. 2013 GEOG 230: Our Changing Climate (Online). School of Geography and Development, University of Arizona

- Win. 2013 GEOG 230: Our Changing Climate (Online). School of Geography and Development, University of Arizona
- Sum. 2012 North American Dendroecological Fieldweek (NADEF). Intro group, Jemez Mountains, New Mexico
- Sum. 2011 GEOS 497K/597K: Dendroecology Fieldcourse. Laboratory of Tree-Ring Research, University of Arizona
  - Fall 2011 GEOG 397A: Field Course Reading a Landscape. School of Geography and Development, University of Arizona
  - Fall 2011 GEOG 240: Our Dynamic Landscape. School of Geography and Development, University of Arizona

## Teaching assistant

- Fall 2010 NATS 101: Physical Geography. School of Geography and Development, University of Arizona
- Sum. 2009 SFR 300: Forestry Summer Field Experience. School of Forest Resources, University of Maine
- Sum. 2008 SFR 300: Forestry Summer Field Experience. School of Forest Resources, University of Maine
  - Fall 2003 GEO: 230 Structural Geology. Geology Department, Bates College

### **Publications**

## Refereed Journal Papers

- Guiterman, C. H., Baisan, C. H., English, N. B., Quade, J., Dean, J. S., & Swetnam, T. W. (2020). Convergence of Evidence Supports a Chuska Mountains Origin for the Plaza Tree of Pueblo Bonito, Chaco Canyon. *American Antiquity*, 85(2), 331–346. https://doi.org/10.1017/aaq.2020.6
- Guiterman, C. H., Lynch, A. M., & Axelson, J. N. (2020). dfoliatR: An R package for detection and analysis of insect defoliation signals in tree rings. *Dendrochronolo*gia, 63, 125750. https://doi.org/10.1016/j.dendro.2020.125750
- Klesse, S., DeRose, R. J., Babst, F., Black, B. A., Anderegg, L. D. L., Axelson, J., Ettinger, A., Griesbauer, H., Guiterman, C. H., Harley, G., Harvey, J. E., Lo, Y. H., Lynch, A. M., O'Connor, C., Restaino, C., Sauchyn, D., Shaw, J. D., Smith, D. J., Wood, L., Villanueva-Díaz, J., & Evans, M. E. K. (2020). Continental-scale tree-ring-based projection of Douglas-fir growth: Testing the limits of space-for-time substitution. Global Change Biology, 26(9), 5146–5163. https://doi.org/10.1111/gcb.15170
- Rother, M. T., Huffman, J. M., **Guiterman, C. H.**, Robertson, K. M., & Jones, N. (2020). A history of recurrent, low-severity fire without fire exclusion in southeastern pine savannas, USA. *Forest Ecology and Management*, 475, 118406. https://doi.org/10.1016/j.foreco.2020.118406
- Guiterman, C. H., Margolis, E. Q., Baisan, C. H., Falk, D. A., Allen, C. D., &

- Swetnam, T. W. (2019). Spatiotemporal variability of human fire interactions on the Navajo Nation. Ecosphere, 10(11), e02932. https://doi.org/10.1002/ecs2.2932
- Evans, M. E. K., Gugger, P. F., Lynch, A. M., **Guiterman, C.H.**, Fowler, J. C., Klesse, S., & Riordan, E. C. (2018). Dendroecology meets genomics in the common garden: new insights into climate adaptation. *New Phytologist*, 218(2). https://doi.org/10.1111/nph.15094
- Guiterman, C. H., Margolis, E. Q., Allen, C. D., Falk, D. A., & Swetnam, T. W. (2018). Long-Term Persistence and Fire Resilience of Oak Shrubfields in Dry Conifer Forests of Northern New Mexico. *Ecosystems*, 21(5), 943–959. https://doi.org/10.1007/s10021-017-0192-2
- Klesse, S., DeRose, R. J., **Guiterman, C. H.**, Lynch, A. M., O'Connor, C. D., Shaw, J. D., & Evans, M. E. K. (2018). Sampling bias overestimates climate change impacts on forest growth in the southwestern United States. *Nature Communications*, 9(1), 5336. https://doi.org/10.1038/s41467-018-07800-y
- Malevich, S. B., **Guiterman, C. H.**, & Margolis, E. Q. (2018). burnr: Fire history analysis and graphics in R. *Dendrochronologia*, 49(February), 9–15. https://doi.org/10.1016/j.dendro.2018.02.005
- Betancourt, J. L., & Guiterman, C. H. (2016). Revisiting human-environment interactions in Chaco Canyon and the American Southwest. *Past Global Change Magazine*, 24(2), 64–65. https://doi.org/10.22498/pages.24.2.64
- Brewer, P. W., & **Guiterman, C. H.** (2016). A new digital field data collection system for dendrochronology. *Dendrochronologia*, 38, 131–135. https://doi.org/10.1016/j.dendro.2016.04.005
- Guiterman, C. H., Swetnam, T. W., & Dean, J. S. (2016). Eleventh-century shift in timber procurement areas for the great houses of Chaco Canyon. *Proceedings of the National Academy of Sciences*, 113(5), 1186–1190. https://doi.org/10.1073/pnas.1514272112
- Creasman, P. P., Baisan, C. H., & **Guiterman, C. H.** (2015). Dendrochronological Evaluation of Ship Timber from Charlestown Navy Yard (Boston, MA). *Dendrochronologia*, 33, 8–15. https://doi.org/10.1016/j.dendro.2014.10.001
- Guiterman, C. H., Margolis, E. Q., & Swetnam, T. W. (2015). Dendroecological methods for reconstructing high severity fire in pine-oak forests. *Tree-Ring Research*, 71(2), 67–77. https://doi.org/10.3959/1536-1098-71.2.67
- Brice, B., Lorion, K. K., Griffin, D., Macalady, A. K., **Guiterman, C. H.**, Speer, J. H., Benakoun, L. R., Cutter, A., Hart, M. E., Murray, M. P., Nash, S. E., Shepard, R., Stewart, A. K., & Wang, H. (2013). Signal Strength In Sub-Annual Tree-Ring Chronologies from Pinus ponderosa In Northern New Mexico. *Tree-Ring Research*, 69(2), 81–86. https://doi.org/10.3959/1536-1098-69.2.81
- Guiterman, C.H., Seymour, R. S., & Weiskittel, A. R. (2012). Long-Term Thinning

- Effects on the Leaf Area of Pinus strobus L. as Estimated from Litterfall and Individual-Tree Allometric Models. *Forest Science*, 58(1), 85–93. https://doi.org/10.5849/forsci.10-002
- Guiterman, C. H., Weiskittel, A. R., & Seymour, R. S. (2011). Influences of Conventional and Low-Density Thinning on the Lower Bole Taper and Volume Growth of Eastern White Pine. *Northern Journal of Applied Forestry*, 28(3), 123–128. https://doi.org/10.1093/njaf/28.3.123

# Papers in review

- Brice, B., **Guiterman, C. H.**, Woodhouse, C., McClellan, C., & Sheppard, P. R. (in review). Comparing tree-ring based reconstructions of snowpack variability at different scales. *Climate Services*.
- Roos, C. I., & **Guiterman, C. H.** (in review). Dating the origins of persistent oak shrubfields in northern New Mexico using soil charcoal and dendrochronology. *The Holocene*.
- Roos, C. I., Swetnam, T. W., Ferguson, T. J., Liebmann, M. J., Loehman, R. A., Welch, J. R., Margolis, E. Q., **Guiterman, C. H.**, Hockaday, W. C., Aiuvalasit, M. J., Battillo, J., Farella, J., Kiahtipes, C. A., Toya, C., & Tosa, C. (in review). Native American fire management at an ancient wildland-urban interface in the Southwest US. *Proceedings of the National Academies of Sciences*.

#### Other publications and reports

- Guiterman, C. H., & Baisan, C. H. (2019). The origins of great house construction timbers at Chaco Canyon. *Southwest Archaeology Magazine*. Retrieved from https://www.archaeologysouthwest.org/product/asw32-3/
- Guiterman, C. H., & Margolis, E. Q. (2019). Vulnerabilities of Navajo Nation Forests to Climate Change. Retrieved from https://chguiterman.github.io/Nav\_report/
- Eusden, J., Anderson, B., Castro, C., Gardner, P., Guiterman, C., Higgens, S., Kugel, K., C., R., & Tamposi, C. (2017). Bedrock Geology of Mt. Washington, Presidential Range, NH. In B. Johnson & J. Eusden (Eds.), Guidebook for Field Trips in Western Maine and Northern New Hampshire: New England Intercollegiate Geological Conference (pp. 177–196). Bates College.
- Guiterman, C. H. (2015). Climatic sensitivities of Navajo forestlands: use-inspired research to guide tribal forest management. Final report for Climate & Society Fellowship, Climte Assessment of the Southwest.
- Guiterman, C. H., Margolis, E. Q., & Swetnam, T. W. (2015). Dendroecological analyses of fire-origin shrublands in former conifer forests of the Jemez Mountains, New Mexico. Final report to NPS Bandelier National Monument (DS CESU project UAZDS-402). Laboratory of Tree-Ring Research, University of Arizona,

Tucson, AZ.

Guiterman, C. H., Swetnam, T. W., Dean, J. S., & Creasman, P. P. (2014). Dendrochronological sourcing of timbers from the Great Houses of Chaco Canyon, New Mexico (p. 25). Final report to Chaco Culture National Historical Park and Western National Parks Association (WNPA Grant 13-02). Laboratory of Tree-Ring Research, University of Arizona, Tucson, AZ.

#### Software

- 2020 dfoliatR: detection and analysis of insect defoliation signals in tree rings, CH Guiterman, AM Lynch, JN Axelson, https://chguiterman.github.io/dfoliatR/.
- 2016 burnr: Advanced fire history tools in R, SB Malevich, CH Guiterman, EQ Margolis, https://cran.r-project.org/web/packages/burnr/index.html.
- 2019 suRge: An extension of dfoliatR to accommodate insect-induced growth surges in trees, developed for Amy Hessl (West Virginia University), https://github.com/chguiterman/suRge.
- slideRun: An extension of burnr to assess avalanche damage patterns on trees, developed for Erich Peitzsch and Greg Pederson (USGS Montana), https://github.com/chguiterman/slideRun.
- 2017 burnr\_demo: A module-based R project for educating burnr users, CH Guiterman, https://github.com/chguiterman/burnr\_demo.

#### Service

Journal peer reviews: Dendrochronologia, Fire Ecology, Forest Ecology and Management, Forest Science, Global Ecology and Biogeography, Geophysical Research Letters, International Journal of Wildland Fire, Journal of Archaeological Method and Theory, Journal of Biogeography, Journal of Contemporary Water Research and Education, Journal of Hydrology, Journal of Vegetation Science, Tree-Ring Research, Urban Forestry and Urban Greening

- 2019 Conference review committee, 8th International Fire Ecology and Management Conference, Association for Fire Ecologist, Tucson, AZ, November 18-22, 2019.
- 2019 Conference organizer, Healthy Forests-Healthy Watersheds: Enabling a Cultural Shift Toward Understanding the Beneficial Aspects of Forest Fire in a Changing Climate. November 13-15, 2019. Tucson, AZ.

- 2018 Conference organizing committee, Society of American Foresters Southwest Section Meeting, Safford, AZ, April 19-21, 2018.
- 2018 Education Chair, Southwest Section of the Society of American Foresters.
- 2017 Grant proposal reviewer, National Geographic Society.
- 2015 Session Chair (de facto), Resource use, Environments, and Landscapes, Society of American Archaeology Conference, April 15-18, 2015, San Francisco, CA.
- 2015 Contributor, Chaco Research Archive. Chaco great house treering database. 6,421 records, http://www.chacoarchive.org/cra/chaco-resources/tree-ring-database/.
- 2015 Open Data contributor, International Tree-Ring Databank, NM588, Canyon del Potrero (Ponderosa pine) AD 620-2011, NM589, Narbona Pass (Ponderosa pine) AD 842-2010.
- 2015 Invited session co-chair, Collaborative environmental research in the Southwest: Examples from the field, 13th Biennial Conference on Science and Management on the Colorado Plateau and Southwest Region. October 5-8, 2015, Flagstaff, AZ.
- 2014 Fellowship proposal reviewer and selection committee member , CLI-MAS Climate & Society Fellowships, University of Arizona.
- 2014 Search committee member, Laboratory of Tree-Ring Research Director position, University of Arizona.
- 2013 Organizer, Tree-Ring Day, SEES Earthweek.
- 2012 Science advisory committee, Forests, Fire, and Tree Ring displays, Flandrau Science Center museum exhibit on Sky Islands.
- 2012 Representative to University of Arizona School of Earth and Environmental Sciences (SEES) Earthweek, 2012-2013 academic year.
- 2012 Graduate student faculty representative, Laboratory of Tree-Ring Research, 2012-2013 academic year.

2011 **Interim Treasurer**, Southern Arizona Chapter of the Society of American Foresters.

## Presentations

#### Invited seminars

- Sep 2020 **dfoliatR empowers analyses of forest defoliator outbreak chronologies**, Laboratory of Tree-Ring Research seminar series, via Zoom.
- Mar 2020 Unearthing the story of JPB-99, the Plaza Tree of Pueblo Bonito, Laboratory of Tree-Ring Research seminar series, via Zoom.
- Feb 2018 Shifting timber sources signal socioecological change at the descendant Chacoan cultural center, Aztec Ruins, New Mexico, Laboratory of Tree-Ring Research seminar series, Tucson, AZ.
- Nov 2017 On the vulnerabilities of Navajo forests to climate change, Navajo Nation Department of Natural Resources Annual Summit, Twin Arrows Casino, AZ.
- Nov 2017 **Timber procurement patterns of the Aztec great houses**, Aztec Ruins National Monument, New Mexico, NA.
- Mar 2017 Ancient origins for construction timbers of the Chacoan world (850-1240 CE), US Geological Survey seminar series, Tucson, AZ.
- May 2016 Landscape-scale variability in forest response to climate, Navajo Nation, US Southwest, William G. McGinnies Graduate Scholarship in Arid Land Studies annual lecture, Tucson, AZ.
- Mar 2016 **Persistence** and fire regimes of oak shrubfields sugdominance gest increasing with climate change, South-Fire Science Consortium Webinar, (Available west at: https://www.youtube.com/watch?v=WeIuEKwV68M&feature=youtu.be).
- Mar 2015 **Distant and shifting sources of Chaco timbers**, Tucson Festival of Books, Tucson, AZ.
- Oct 2014 An integrated field data collection system for dendrochronology, Laboratory of Tree-Ring Research seminar series, Tucson, AZ.

- Apr 2014 Dendrochronological sourcing of timbers from the Great Houses of Chaco Canyon, New Mexico, Laboratory of Tree-Ring Research seminar series, Tucson, AZ.
- Mar 2014 The Beams of Chaco Culture: Unraveling an ancient environment in the Southwest, Tucson Festival of Books, Tucson, AZ.
- Sep 2013 Dendrochronological sourcing of timbers from the Great Houses of Chaco Canyon, Visitors Center, Chaco Culture National Historical Park, NA.
- Mar 2013 Tree-ring research and chronology building in the Chuska Mountains of the Navajo Nation, Navajo Forestry Department, Ft Defiance, AZ.
- Apr 2012 Three seasons of FIA adventures in the Pacific Northwest, Southern Arizona Chapter of the Society of American Foresters, Tucson, AZ.
  - Conference presentations (last five years)
- Aug 2020 Modern area burned in a historical context in the Jemez Mountains, New Mexico, Margolis, E., C. Farris, C. D. Allen, L. Johnson, D. Falk, T. Swetnam, and C. Guiterman, ESA Virtual Meeting, Online.
- Nov 2019 Modern area burned in a historical context in the Jemez Mountains, New Mexico, Margolis, E., C. Farris, C. D. Allen, L. Johnson, D. Falk, T. Swetnam, and C. Guiterman, 8th International Fire Ecology and Management Congress, Tucson, AZ.
- Nov 2019 Variable trajectories of Southwest ponderosa pine forests following high-severity fire, *Iniguez, J., C. Guiterman, E. Margolis, C. Haffey, D. Carril,* 8th International Fire Ecology and Management Congress, Tucson, AZ.
- Nov 2019 A synthesis of fire regimes in the southwestern United States, Guiterman, C., S. Malevich, E. Margolis, C. Baisan, E. Bigio, P. Brown, D. Falk, P. Fulé, and T. Swetnam, 8th International Fire Ecology and Management Congress, Tucson, AZ.
- Jun 2019 Beyond the tipping point in dry conifer forests of the US Southwest: Post-fire Gambel oak shrubfields as alternative stable states, Guiterman, C., E. Margolis, T. Assal, and C. Allen, The North American Forest Ecology Workshop, Flagstaff, AZ.
  - o Invited special session

- Apr 2019 A Case Study for Using Digital Field Data Collection, Brice, R., P. Brewer, C. Guiterman, American Association of Geographers, Washington, D.C..
- Apr 2019 No evidence of fire exclusion in the fire-scar record for the Red Hills Region of the US Southeast, Rother, M., J. Huffman, K. Robertson, C. Guiterman, American Association of Geographers, Washington, D.C..
- Aug 2018 The fingerprint of transhumance and climate on fire regimes of the Navajo Nation, Guiterman, C.H., E.Q. Margolis, D.A. Falk, and T.W. Swetnam, Ecological Society of America, New Orleans, LA.

   Invited special session
- Jul 2018 Disasters, natural variability, and resilience: How tree-ring data address today's challenges in forest ecosystems, Guiterman, C.H., Earth Science Information Partners (ESIP) Conference, Tucson, AZ.

  o Plenary presentation
- May 2018 Persistent fire-induced vegetation state switches in southwestern ponderosa pine forests, Guiterman, C.H., The Fire Continuum Conference, Missoula, MT.
  - o Invited special session
- Apr 2018 Persistent fire-induced vegetation state switches in southwestern ponderosa pine forests, *Guiterman*, *C.H.*, Society of American Foresters Southwest Section Meeting, Safford, AZ.
- Nov 2017 Variability in tree-growth response to climate across dry conifer forests of the Navajo Nation, Guiterman, C.H., E.Q. Margolis, C.A. Woodhouse, A.P. Williams, D.A. Falk, and T.W. Swetnam, Society of American Foresters, Albuquerque, NM.
- Aug 2017 Targeted sampling designs influence tree-ring climate sensitivity: Implications for forest vulnerability assessments, Klesse, S., J. DeRose, C. O'Connor, D. Frank, C. Guiterman, J. Shaw, and M. Evans, Ecological Society of America, Portland, OR.
- Apr 2017 **The origins of Chaco timbers by tree-ring based sourcing**, *Guiterman*, *C.H.*, Society of American Archaeologists, Vancouver, BC, Canada.

   Invited oral presentation
- Dec 2016 Persistence and fire regimes of oak shrubfields suggest increased dominance with climate change, Guiterman, C.H., E.Q. Margolis, T.W. Swetnam, D.A. Falk, and C.D. Allen, 3rd Southwest Fire Ecology Conference, Tucson, AZ.

  o Invited special session oral presentation

- Dec 2016 Navajo settlement, pastoralism, and the interruption of frequent fires in northeastern Arizona, Guiterman, C.H., E.Q. Margolis, C.H. Baisan, D.A. Falk, R.H. Towner, and T.W. Swetnam, 3rd Southwest Fire Ecology Conference, Tucson, AZ.
- Oct 2015 Climate Sensitivity of Navajo Forests: Use-inspired research to guide tribal forest management, Guiterman, C.H., A.C. Becenti, E.Q. Margolis, and T.W. Swetnam, 13th Biennial Conference of Science and Management on the Colorado Plateau and Southwest Region, Flagstaff, AZ.
  - o Invited special session; A.C. Becenti, Head Forester, Navajo Forestry Department
- Apr 2015 Tree-Ring Sourcing of Great House Timbers and the Plaza Tree of Pueblo Bonito, Chaco Canyon, New Mexico, Guiterman, C.H., T.W. Swetnam, J.S. Dean, C.H. Baisan, and N.B. English, Society of American Archaeology, San Francisco, CA.

# Professional Society Memberships

- o Tree-Ring Society
- o Forest Stewards Guild
- Society of American Foresters
- Association for Fire Ecology
- Association of American Geographers
- Society of American Archaeology