

## CHRISTOPHER H. GUITERMAN

Laboratory of Tree-Ring Research  
1215 E Lowell St., University of Arizona, Tucson, AZ 85721  
(520) 230-2341  
chguiterman@email.arizona.edu

### EDUCATION

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- 2016 Ph.D., School of Natural Resources and the Environment, University of Arizona.  
Major in Natural Resource Studies; minor in Geography.  
Dissertation: *Climate and human drivers of forest vulnerabilities in the US Southwest: Perspectives from dendroecology*  
Committee: Thomas Swetnam (co-chair), Donald Falk (co-chair), Ellis Margolis, Connie Woodhouse, Jeffrey Dean
- 2009 M.S., School of Forest Resources, University of Maine  
Thesis: *The influences of conventional and low density thinning on leaf area, growth, and growing space relationships of eastern white pine (Pinus strobus L.)*  
Committee: Robert Seymour (chair), Aaron Weiskittel, Robert Lilieholm
- 2005 B.A., Geology, Bates College  
Thesis (Honors): *Strain variations of a hinge-parallel lineation, Chandler Ridge, Mount Washington, New Hampshire*  
Advisor: J. Dykstra Eusden Jr.

#### *Other education*

- 2014 Graduate Certificate in College Teaching, Office of Instruction and Assessment, University of Arizona.
- 2014 Graduate Certificate in Dendrochronology, Laboratory of Tree-Ring Research, University of Arizona.
- 2009 North American Dendroecological Fieldweek, Stand dynamics group. Harvard Forest, Petersham, MA.
- 2004 Nepali Language & Culture Immersion Program in Kalimpong, India. Pitzer College, study abroad.
- 2002 National Outdoor Leadership School (NOLS), Semester in the Rockies, Lander, Wyoming.

### EMPLOYMENT

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- 2017 – Laboratory of Tree-Ring Research, University of Arizona  
Research Associate/Assistant Research Scientist
- 2015 – 2016 Laboratory of Tree-Ring Research, University of Arizona  
Senior Research Specialist
- 2010 – 2015 Laboratory of Tree-Ring Research, University of Arizona  
Graduate Research Associate
- 2014 – 2015 Climate Assessment of the Southwest (CLIMAS), University of Arizona  
Graduate Research Associate

- 2010 – 2014 School of Geography and Development, University of Arizona  
Course Instructor; Teaching Assistant
- 2007 – 2009 School of Forest Resources, University of Maine  
Graduate Research Assistant, Teaching Assistant
- 2005 – 2007 Camp II Forest Management, Joseph, OR  
Forest Technician (Installation of FIA Plots, remeasurement of CVS plots,  
timber cruising)

## TEACHING

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### *Instructor*

- 2019 Dendrochronology Intensive Summer Course (DISC). Laboratory of Tree-ring Research, University of Arizona
- 2014 GEOG 303: Field Study in Environmental Geography. University of Arizona.
- 2013 GEOG 230: Our Changing Climate. Online course. Winter session, University of Arizona.
- 2013 GEOG 230: Our Changing Climate. Online course. Summer session, University of Arizona.
- 2012 North American Dendroecological Fieldweek (NADEF), Intro Group, Jemez Mountains, New Mexico. May 28 – June 4, 2012. (co-instructor)
- 2011 GEOG 240: Our Dynamic Landscape. University of Arizona. (co-instructor)
- 2011 GEOG 397A: Field Course – Reading a Landscape. University of Arizona. (co-instructor)
- 2011 GEOS 497K/597K: Dendroecology Fieldcourse, Laboratory of Tree-Ring Research, University of Arizona. May 16 – 27, 2011. (co-instructor)

### *Teaching Assistant*

- 2011 NATS 101: Physical Geography. University of Arizona
- 2009 SFR 300: Forestry Summer Field Experience. University of Maine
- 2008 SFR 300: Forestry Summer Field Experience. University of Maine
- 2003 GEO 230: Structural Geology. Bates College

## PUBLICATIONS

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Klesse, S., R.J. DeRose, F. Babst, B. Black, L. Anderegg, J. Axelson, A. Ettinger, H. Griesbauer, **C. Guiterman**, G. Harley, J. Harvey, Yueh-Hsin Lo, A. Lynch, C. O'Connor, C. Restaino, D. Sauchyn, J. Shaw, D. Smith, J. Villanueva-Díaz, L. Wood, M. Evans. Continental-scale tree-ring based projection of Douglas-fir growth – Testing the limits of space-for-time substitution. In review at *Global Change Biology*.

**Guiterman, C.H.**, C.H. Baisan, N.B. English, J. Quade, J.S. Dean, and T.W. Swetnam. (2020). Convergence of Evidence Supports a Chuska Mountains Origin for the Plaza Tree of Pueblo Bonito, Chaco Canyon. *American Antiquity*. DOI: 10.1017/aaq.2020.6

- Guiterman, C.H.**, E.Q. Margolis, C.H. Baisan, D.A. Falk, C.D. Allen, and T.W. Swetnam. (2019). Spatiotemporal variability in human-fire interactions on the Navajo Nation. *Ecosphere* 10(11):e02932. DOI: 10.1002/ecs2.2932
- Klesse, S., R.J. DeRose, **C.H. Guiterman**, A.M. Lynch, C. O'Connor, J.D. Shaw, and M.E.K. Evans. (2018). Sampling bias overestimates climate change impacts on forest growth in the southwestern United States. *Nature Communications* 9: 5336
- Malevich, S.B., **C.H. Guiterman**, and E.Q. Margolis. (2018) burnr: Fire history analysis and graphics in R. *Dendrochronologia* 49: 9-15.
- Evans, M.E.K., P.F. Gruger, A.M. Lynch, **C.H. Guiterman**, J.C. Fowler, S. Klesse, E.C. Riordan. (2018) Commentary: Dendroecology meets genomics in the common garden: new insights into climate adaptation. *New Phytologist* 218: 401-403.
- Guiterman, C.H.**, E.Q. Margolis, C.D. Allen, D.A. Falk, and T.W. Swetnam. (2018) Long-term persistence and fire resilience of oak shrubfields in dry conifer forests of northern New Mexico. *Ecosystems* 21(5): 943-959.
- Betancourt, J.L. and **C.H. Guiterman**. (2016) Revisiting human-environmental interactions in Chaco Canyon and the American Southwest. *Past Global Changes Magazine* (PAGES) 24(2): 64-65.
- Brewer, P. and **C.H. Guiterman**. (2016) A new digital field data collection system for dendrochronology. *Dendrochronologia* 38:131-135.
- Guiterman, C.H.**, T.W. Swetnam, and J.S. Dean. (2016). Eleventh-century shift in timber procurement areas for the Great Houses of Chaco Canyon. *Proceedings of the National Academy of Sciences* 113(5):1186-1170.  
\*Cover art: <http://www.pnas.org/content/113/5.cover-expansion>  
\*Featured in commentaries by Jared Diamond (2016, *Nature*) and Adam Watson (2016, *PNAS*).
- Guiterman, C.H.**, E.Q. Margolis, and T.W. Swetnam. (2015). Dendroecological methods for reconstructing high-severity fire in pine-oak forests. *Tree-Ring Research* 71(2): 67-77.
- Creasman, P.P., C.H. Baisan, and **C.H. Guiterman**. (2015) Dendrochronological evaluation of ship timber from Charlestown Navy Yard (Boston, MA). *Dendrochronologia* 33: 8-15.
- Brice, R.\*, K. Lorion\*, D. Griffin, A. Macalady, **C. Guiterman**, J. Speer, L. Benakoun, A. Cutter, M. Hart\*\*, M. Murray, S. Nash, R. Shepard\*\*, A. Stewart, and H. Wang, (2013). Signal strength in sub-annual chronologies from *Pinus ponderosa* in northern New Mexico. *Tree-Ring Research* 69(2): 81-86. \*Mentored lead authors; \*\*Undergraduate students.
- Guiterman, C.H.**, R.S. Seymour, and A.R. Weiskittel. (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.
- Guiterman, C.H.**, A.R. Weiskittel, and R.S. Seymour. (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.

## PAPERS IN PREPARATION

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- Guiterman, C.H.**, E.Q. Margolis, C.A. Woodhouse, A.P. Williams, D.A. Falk, and T.W. Swetnam. Recent synchronized tree growth response to climate across a large semiarid forest in the southwestern US. In preparation for *Global Change Biology*.
- Guiterman, C.H.**, R. Towner, L. Stevens, C.H. Baisan, and J.S. Dean. Timber procurement dynamics at the descendent Chacoan cultural center of Aztec Pueblo, New Mexico. I preparation for *Proceedings of the National Academy of Sciences*.
- Guiterman, C.H.**, T.L. Swetnam, C.H. Baisan, T.W. Swetnam, and V. Trouet. Polar Jet and summer temperatures drive historical fire activity in eastern Siberia. In preparation for *Geophysical Research Letters*
- Brice, R.L., **C.H. Guiterman**, C. McClellan, and C. Woodhouse. Drying surface water resources in the Chuska Mountains, Navajo Nation. In preparation for *Water*.

## OTHER PUBLICATIONS & REPORTS

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- Guiterman, C.H.** and E.Q. Margolis. 2019. Vulnerabilities of Navajo Nation forests to climate change. Report on file with Bureau of Indian Affairs. Accessible from [https://chguiterman.github.io/Nav\\_report/](https://chguiterman.github.io/Nav_report/)
- Guiterman, C.H.**, and C.H. Baisan. 2018. The origins of great house construction timbers at Chaco Canyon. *Archaeology Southwest Magazine* (invited feature in special issue on recent advances in Chaco Canyon research).
- Eusden, J.D., B. Anderson, C. Castro, P. Gardner, **C. Guiterman**, S. Higgins, K. Kugel, A. Reid, C. Rodda, and C. Tamposi. 2017. Bedrock Geology of Mt. Washington, Presidential Range, NH. in Johnson, B. and Eusden, J.D., ed., Guidebook for field trips in Western Maine and Northern New Hampshire: New England Intercollegiate Geological Conference, Bates College, p. 177-196.
- Guiterman, C.H.**, E.Q. Margolis, and T.W. Swetnam. 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. 40 p.
- Guiterman, C.H.**, T.W. Swetnam, J.S. Dean, and P.P. Creasman. 2014. Dendrochronological sourcing of timbers from the Great Houses of Chaco Canyon, New Mexico. Final report to Chaco Culture National Historical Park & Western National Parks Association (WNPA Grant 13-02). Laboratory of Tree-Ring Research, University of Arizona, Tucson, AZ. 25 p.
- Guiterman, C. H.** 2015. Climatic sensitivities of Navajo forestlands: use-inspired research to guide tribal forest management. Final report for the Climate & Society Fellowship, Climate Assessment of the Southwest. Available at

<https://www.climas.arizona.edu/sites/default/files/pdfclimas-fellow-finalreport2014guiterman.pdf>

**Guiterman, C.H.**, T.W. Swetnam, J.S. Dean, and C.D. Allen. 2014. Dendrochronological sourcing of timbers from the Great Houses of Chaco Canyon, New Mexico: Building a millennium-length ponderosa pine tree-ring chronology from the greater Bandelier-Jemez Landscape. Final report to NPS Bandelier National Monument & Chaco Culture National Historical Park (DS CESU project UAZDS-381). Laboratory of Tree-Ring Research, University of Arizona, Tucson, AZ. 25 p.

## GRANTS & FELLOWSHIPS

total funding: \$929,166

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| 2019 – 2020 | Guiterman, C.H., and W. Tsosie*. A grove of stories: Dendrochronology of the Wheatfields Lake peel-tree grove on the Navajo Nation. University of Arizona Foundation Small Grants Program \$20,000. *Navajo Historic Preservation Office Forest Archaeologist  |
| 2020 – 2021 | Evans, M.E.K., R.J. DeRose, <b>C.H. Guiterman</b> . Designing Climate Adaptation Plans for the forests of the Navajo Nation. Southwest Climate Adaptation Science Center. \$225,328.   |
| 2019 – 2021 | <b>Guiterman, C.H.</b> , and A.M. Youberg. Integrated watershed hazard assessment for wildfire, floods, and debris flows on the Navajo Nation. BIA Tribal Resilience Program. \$150,000.   |
| 2017 – 2018 | <b>Guiterman, C.H.</b> , E.Q. Margolis, C.D. Allen, and A.C. Becenti*. Ancient Trees and global change: A vulnerability assessment of old-growth forests on the Navajo Nation. BIA Tribal Climate Resilience Program. \$216,694.<br>*Head forester, Navajo Forestry Department                                     |
| 2017 – 2018 | Towner, R.H., <b>C.H. Guiterman</b> , and J.S. Dean. Sourcing construction timbers at Aztec Ruins National Monument. Western National Parks Association. Grant #17-01. \$7,400.  |
| 2017 – 2018 | Towner, R.H., and <b>C.H. Guiterman</b> . Dendrochronology study for Wupakti Residence 1 viga preservation. National Park Service, Wupakti National Monument. \$14,377.  |
| 2015 – 2017 | <b>Guiterman, C.H.</b> , E.Q. Margolis, and T.W. Swetnam. 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. |

- 2014 – 2016 **Guiterman, C.H.** Fire regimes, demography, and climatic sensitivities of Navajo forestlands: Insights from the past to inform tribal forest management. EPA STAR Fellowship # F13F51318. \$84,000.
- 2014 – 2015 **Guiterman, C.H.** Climatic sensitivities of Navajo forestlands: Use-inspired research to guide tribal forest management. Climate & Society Fellowship. CLIMAS, University of Arizona. \$5,000.
- 2013 – 2015 Margolis, E.Q., **C.H. Guiterman**, and C.D. Allen. Forest-to-shrub type conversions: climate-disturbance interactions in the southwestern U.S. USGS Cooperative agreement G13AC00247. \$53,000.
- 2013 – 2014 **Guiterman, C.H.**, E.Q. Margolis, T.W. Swetnam, and C.D. Allen. 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.
- 2012 – 2013 **Guiterman, C.H.**, T.W. Swetnam, J.S. Dean, and P.P. Creasman. Dendrochronological Sourcing of Timbers from the Great Houses of Chaco Canyon, New Mexico. Western National Parks Association. Grant #13-02. \$7,500.
- 2012 – 2014 **Guiterman, C.H.**, T.W. Swetnam, J.S. Dean, and C.D. Allen. Dendrochronological Sourcing of Timbers from the Great Houses of Chaco Canyon, New Mexico. Bandelier National Monument, Desert Southwest CESU #UAZDS-381. \$10,735.
- 2012 **Guiterman, C.H.** Travel grant, Graduate and Professional Student Council, University of Arizona. For presenting Unearthing the story of JPB-99, the Plaza Tree of Pueblo Bonito, Chaco Canyon, New Mexico at the Association of American Geographers (AAG) annual meeting, February 27, 2012. New York, NY. \$500

## MEDIA

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- 2017 [\*Burro Fire one of many regular Southern Arizona blazes\*](#), Arizona Daily Wildcat.
- 2016 [\*People Lugged Logs for Leagues\*](#), Quirks and Quarks, CBC Radio – Canada.
- 2015 [\*Chaco Timbers\*](#), by Alan Stahler, KVMR, National Public Radio.
- 2015 [\*Wood sources identified in the ancient Southwest\*](#), Archaeology Magazine.
- 2015 [\*Arizona Researcher: Shift In Sourcing Material Allowed Ancient People To Build Massive Structures\*](#), by Andrew Bernier, KJZZ, National Public Radio.
- 2015 [\*New Wood Source Found for Chaco Canyon\*](#), by Tom Beal, Arizona Daily Star.

- 2015 [\*Unexpected Wood Source for Chaco Canyon Great Houses\*](#), by Mari Jenson, UA News (widely syndicated press release, [one](#) with over 3,800 shares on social media).
- 2015 [\*Tree Rings Do Tell Tales\*](#), article and video by Western National Parks Association about our timber sourcing project.
- 2014 [\*Chris Guiterman: 2014 Climate and Society Fellow\*](#), by Emily Huddleston, CLIMAS.
- 2014 [\*UA Graduate Student Gets EPA Award\*](#), by Zac Ziegler, Arizona Public Media.
- 2014 [\*Notes from the field: Dendrochronology, wildfire, and Iron Maiden\*](#), by Dan Ferguson, CLIMAS.
- 2012 [\*Drought and Tree Rings: New UA Tree Ring Lab\*](#), video by Arizona Public Media's *Arizona Illustrated*. I was interviewed with Tom Swetnam about the new Bryant Bannister Tree-Ring Building.

## CONFERENCE PRESENTATIONS

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- 2019 **Guiterman, C.**, S. Malevich, E. Margolis, C. Baisan, E. Bigio, P. Brown, D. Falk, P. Fulé, and T. Swetnam. A synthesis of fire regimes in the southwestern United States. 8th International Fire Ecology and Management Congress, Tucson, AZ. November 18-22, 2019
- 2019 Iniguez, J., **C. Guiterman**, E. Margolis, C. Haffey, D. Carril. Variable trajectories of Southwest ponderosa pine forests following high-severity fire. 8th International Fire Ecology and Management Congress, Tucson, AZ. November 18-22, 2019
- 2019 Margolis, E., C. Farris, C. D. Allen, L. Johnson, D. Falk, T. Swetnam, and **C. Guiterman**. Modern area burned in a historical context in the Jemez Mountains, New Mexico. 8th International Fire Ecology and Management Congress, Tucson, AZ. November 18-22, 2019
- 2019 **Guiterman, C.**, E. Margolis, T. Assal, and C. Allen. Beyond the tipping point in dry conifer forests of the US Southwest: Post-fire Gambel oak shrubfields as alternative stable states. [Invited special session] The North American Forest Ecology Workshop, Flagstaff, AZ, June 23-27, 2019.
- 2019 Rother, M., J. Huffman, K. Robertson, **C. Guiterman**. No evidence of fire exclusion in the fire-scar record for the Red Hills Region of the US Southeast. American Association of Geographers annual meeting, Washington, D.C.
- 2019 Brice, R., P. Brewer, **C. Guiterman**. A Case Study for Using Digital Field Data Collection. American Association of Geographers annual meeting, Washington, D.C.
- 2018 **Guiterman, C.H.**, E.Q. Margolis, D.A. Falk, and T.W. Swetnam. The fingerprint of transhumance and climate on fire regimes of the Navajo Nation. [Invited special session].



- Annual meeting of the Ecological Society of America, New Orleans, LA. August 5-10, 2018.
- 2018 **Guiterman, C.H.** Disasters, natural variability, and resilience: How tree-ring data address today's challenges in forest ecosystems. [Invited plenary] ESIP - Earth Science Information Partners conference, Tucson, AZ, July 18, 2018.
- 2018 **Guiterman, C.H.** Persistent fire-induced vegetation state switches in southwestern ponderosa pine forests. [Invited special session]. The Fire Continuum Conference, Missoula, MT. May 21-24, 2018.
- 2018 **Guiterman, C.H.** Persistent fire-induced vegetation state switches in southwestern ponderosa pine forests. Society of American Foresters Southwest Section Meeting. Safford, AZ. April 20, 2018.
- 2018 Brice, R.L., **C.H. Guiterman**, C. McLellen\*, C. Woodhouse. Drying surface water resources in the Chuska Mountains, Navajo Nation. Poster presentation, American Association of Geographers annual meeting, New Orleans, LA, April 11, 2018. \*Navajo Water Management Branch
- 2017 **Guiterman, C.H.**, E.Q. Margolis, C.A. Woodhouse, A.P. Williams, D.A. Falk, and T.W. Swetnam. Variability in tree-growth response to climate across dry conifer forests of the Navajo Nation. Annual meeting of the Society of American Foresters, Albuquerque, NM, November 15-18, 2017.
- 2017 Klesse, S., J. DeRose, C. O'Connor, D. Frank, **C. Guiterman**, J. Shaw, and M. Evans. Targeted sampling designs influence tree-ring climate sensitivity: Implications for forest vulnerability assessments. Annual meeting of the Ecological Society of America, August 11, 2017, Portland, Oregon.
- 2017 **Guiterman, C.H.** The origins of Chaco timbers by tree-ring based sourcing. Invited oral presentation, 82<sup>nd</sup> Annual Meeting of the Society of American Archaeologists, March 29-April 2, 2017, Vancouver, Canada.
- 2016 **Guiterman, C.H.**, E.Q. Margolis, C.H. Baisan, D.A. Falk, R.H. Towner, and T.W. Swetnam. Navajo settlement, pastoralism, and the interruption of frequent fires in northeastern Arizona. 3<sup>rd</sup> Southwest Fire Ecology Conference, November 28-December 2, 2016, Tucson, AZ.
- 2016 **Guiterman, C.H.**, E.Q. Margolis, T.W. Swetnam, D.A. Falk, and C.D. Allen. Persistence and fire regimes of oak shrubfields suggest increased dominance with climate change. Invited special session oral presentation, 3<sup>rd</sup> Southwest Fire Ecology Conference, November 28-December 2, 2016, Tucson, AZ.
- 2016 Schwan, M.R.\*, **C.H. Guiterman**, and K.J. Anchukaitis. Climate Controls on Tree Growth Across Species and Sites in Northeastern Arizona. 2016 American Geophysical Union, Fall Meeting, December 12-16, 2016. \*Poster presentation by MRS, an undergraduate honors student under my mentorship.
- 2016 Brice, R., **C. Guiterman**, C. McClellan\*, and C. Woodhouse. Paleoclimatic Indicators of Surface Water Resources in the Chuska Mountains, Navajo Nation. Poster presented at: Mountains Without Snow: What are the Consequences? Mountain Climate Conference.



- 2016 October 17-21; Leavenworth, Washington. \*Navajo Department of Water Resources
- 2016 **Guiterman, C.H.**, T.W. Swetnam, and J.S. Dean. An 11<sup>th</sup> century shift in timber procurement areas for the great houses of Chaco Canyon. Poster presentation, American Quaternary Association (AMQUA) 24<sup>th</sup> Biennial Meeting, June 28-July 2, 2016, Santa Fe, NM.
- 2015 **Guiterman, C.H.**, A.C. Becenti, E.Q. Margolis, and T.W. Swetnam. Climate Sensitivity of Navajo Forests: Use-inspired research to guide tribal forest management. Invited oral presentation, 13<sup>th</sup> Biennial Conference of Science & Management on the Colorado Plateau & Southwest Region, October 5-8, 2015, Flagstaff, AZ.
- 2015 **Guiterman, C.H.**, T.W. Swetnam, J.S. Dean, C.H. Baisan, and N.B. English. Tree-Ring Sourcing of Great House Timbers and the Plaza Tree of Pueblo Bonito, Chaco Canyon, New Mexico. Oral presentation, Society of American Archaeology Conference, April 15-18, 2015, San Francisco, CA.
- 2014 **Guiterman, C.H.** Paleoforestry: Using ancient wood from old growth forests to reconstruct the timber procurement for Chacoan Great Houses. Invited oral presentation at The Southwest's Old-Growth Forests – A conference. Durango, CO. August 4-5, 2014
- 2014 **Guiterman, C.H.** Continental-scale drivers of wildfire activity in eastern Siberia. Oral presentation, Competitive Plenary Session, SEES Earthweek, April 11, 2014. Tucson, AZ. *Tied for winner of best presentation.*
- 2013 **Guiterman, C.H.**, T.W. Swetnam, & C.H. Baisan. Fire History of Boreal Forests in the Sakha Republic of eastern Siberia. Oral presentation, Second North American Dendrochronology Conference, May 13 – 17, 2013. Tucson, AZ.
- 2013 **Guiterman, C.H.**, T.W. Swetnam, C.H. Baisan, & J.S. Dean. Sourcing the Plaza Tree of Pueblo Bonito Using New Documentary and Tree-Ring Evidence. Poster presentation, Second North American Dendrochronology Conference, May 13 – 17, 2013. Tucson, AZ.
- 2013 Brice, B., K. Lorion, D. Griffin, A. Macalady, **C. Guiterman**, J. Speer, L. Benakoun, A. Cutter, M. Hart, M. Murray, S. Nash, R. Shepard, A. Stewart, & H. Wang. Education of dendrochronology through applied research: A case study & chronology creation in New Mexico. Poster presentation, Second North American Dendrochronology Conference, May 13 – 17, 2013. Tucson, AZ.
- 2013 Brice, B., K. Lorion, R.D. Griffin, **C. Guiterman**, Macalady, A., and J. Speer. Chronologies of earlywood and latewood from and old-growth ponderosa pine stand in the Jemez Mountains of northern New Mexico. Oral presentation by B. Brice, Association of American Geographers (AAG) annual meeting, April 13, 2013. Los Angeles, CA.
- 2012 **Guiterman, C.H.**, T.W. Swetnam, C.H. Baisan, and J.S. Dean. Unearthing the story of JPB-99, the Plaza Tree of Pueblo Bonito, Chaco Canyon, New Mexico. Oral presentation, Association of American Geographers (AAG) annual meeting, February 27, 2012. New York, NY.
- 2011 Sahara, A., C. Gentry, S. van de Gevel, S. Birch, S. Cousins, J. Dech, **C. Guiterman**, G. Harley, B. Hook, E. Martinson, R. Morrissey, M. Reinikainen, S. Ryu, J. Waldron. Forest

- Stand Dynamics and Disturbance History in a Mixed Hardwood Forest, Simes Tract, Harvard Forest, Massachusetts. Oral presentation by A. Sahara. Association of American Geographers (AAG) annual meeting, April 13, 2011. Seattle, WA.
- 2009 **Guiterman, C.H.**, R.S. Seymour, and A.R. Weiskittel. The Influence of stand density and thinning on the growth of eastern white pine logs. Poster Symposium, Northeast Society of American Foresters (SAF) Conference, March 18-19, 2009. Portland, Maine. *Winner for best presentation in the poster symposium.*
- 2008 **Guiterman, C.H.**, R.S. Seymour, and A. Weiskittel. Influence of low density and conventional B-line thinning on the growth of 60-year-old eastern white pine (*Pinus strobus* L.). Poster presentation, Eastern CANUSA Forest Science Conference, October 17-18, 2008. University of Maine, Orono, Maine.
- 2008 Seymour, R.S., **C.H. Guiterman**, and N. Mercier. Crop-tree silviculture of eastern white pine. Oral presentation by R.S. Seymour, Eastern CANUSA Forest Science Conference, October 17-18, 2008. University of Maine, Orono, Maine.
- 2004 **Guiterman, C.H.** and J.D. Eusden Jr. Strain variations of a hinge-parallel lineation, Presidential Range, New Hampshire. Poster presentation, Geological Society of America Northeast and Southeast sections joint meeting, March 25-27, 2004. *Reference:* Geological Society of America Abstracts with Programs 36: 102.

#### INVITED SEMINARS

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- 2018 Shifting timber sources signal socioecological change at the descendant Chacoan cultural center, Aztec Ruins, New Mexico. Laboratory of Tree-Ring Research, University of Arizona. February 7, 2018.
- 2017 On the vulnerabilities of Navajo forests to climate change. Navajo Nation Department of Natural Resources Annual Summit. Twin Arrows Casino, AZ. November 16, 2017.
- 2017 Timber procurement patterns of the Aztec great houses. Aztec Ruins National Monument, New Mexico. November 11, 2017.
- 2017 Ancient origins for construction timbers of the Chacoan world (850 – 1240 CE). US Geological Survey seminar series, Tucson, AZ. March 9, 2017.
- 2016 Landscape-scale variability in forest response to climate, Navajo Nation, US Southwest. William G. McGinnies Graduate Scholarship in Arid Land Studies annual lecture. May 4, 2016.
- 2016 Persistence and fire regimes of oak shrubfields suggest increasing dominance with climate change. Webinar for the Southwest Fire Science Consortium. March 16, 2016. (Available at: <https://www.youtube.com/watch?v=WelUEKwV68M&feature=youtu.be>)
- 2015 Distant and shifting sources of Chaco timbers. Public lecture for the Tucson Festival of Books. March 14, 2015.
- 2014 An integrated field data collection system for dendrochronology. (with Peter Brewer) Laboratory of Tree-Ring Research seminar series. October 8, 2014.

- 2014 Dendrochronological sourcing of timbers from the Great Houses of Chaco Canyon, New Mexico. Laboratory of Tree-Ring Research seminar series. April 9, 2014.
- 2014 The Beams of Chaco Culture: Unraveling an ancient environment in the Southwest. Public lecture for the Tucson Festival of Books. March 15, 2014.
- 2013 Dendrochronological sourcing of timbers from the Great Houses of Chaco Canyon. Chaco Culture National Historical Park. Sept 30, 2013.
- 2013 Tree-ring research and chronology building in the Chuska Mountains of the Navajo Nation. Navajo Forestry Department. March 14-15, 2013. Ft. Defiance, AZ.
- 2012 Three seasons of FIA adventures in the Pacific Northwest. Southern Arizona Chapter of the Society of American Foresters. April 12, 2012. Tucson, AZ.

## SERVICE

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

Education Chair, Southwest Section of the Society of American Foresters. 2017 – present

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.

Conference organizing committee, Society of American Foresters Southwest Section Meeting, Safford, AZ, April 19-21, 2018.

Conference review committee, 8<sup>th</sup> International Fire Ecology and Management Conference, Association for Fire Ecologist, Tucson, AZ, November 18-22, 2019.

2017 Grant proposal reviewer, National Geographic Society.

2016 [burnr: Advanced Fire History Analysis in R](#). R package available on CRAN.  
Developers: Malevich, S., **C. Guiterman**, E. Margolis.

2015 Invited session co-chair, *Collaborative environmental research in the Southwest: Examples from the field*. 13<sup>th</sup> Biennial Conference on Science and Management on the Colorado Plateau and Southwest Region. October 5-8, 2015, Flagstaff, AZ.

2015 Contributor, [International Tree-Ring Databank](#) (ITRDB).  
NM588, Canyon del Potrero (Ponderosa pine) AD 620-2011.  
NM589, Narbona Pass (Ponderosa pine) AD 842-2010.

- 2015 Contributor, Chaco Research Archive. Chaco great house tree-ring database. 6,421 records. <http://www.chacoarchive.org/cra/chaco-resources/tree-ring-database/>
- 2015 Session Chair (de facto), *Resource use, Environments, and Landscapes*. Society of American Archaeology Conference, April 15-18, 2015, San Francisco, CA.
- 2014 Search committee for LTRR Director (invited member), Laboratory of Tree-Ring Research
- 2014 Fellowship proposal reviewer and selection committee member (Invited), CLIMAS Climate & Society Fellowships
- 2013 Organizer, Tree-Ring Day; SEES Earthweek. April 9, 2013.
- 2012 LTRR graduate student faculty representative. 2012 – 2013 academic year.
- 2012 LTRR representative to UA School of Earth and Environmental Sciences (SEES) Earthweek. 2012 – 2013 academic year.
- 2012 Forests, Fire, and Tree Ring displays, Flandrau Science Center museum exhibit on Sky Islands.
- 2011 Interim Treasurer, Southern Arizona Chapter of the Society of American Foresters.

## OUTREACH

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### Guest Lectures

- “Fire history on the Navajo Nation” FOR 517-Dendroecology: Applied tree-ring analyses. Northern Arizona University. October 5, 2015.
- “Pyro-dendro-ecology” RNR 539-Introduction to Dendrochronology. September 15, 2015.
- “Tree-ring dating and applications in dendrochronology”, Geog 303-Field Study in Environmental Geography. April 10, 2012.
- “Tree-ring dating and applications in dendrochronology”, Geog 430-Climate System. April 5, 2012.
- “What are tree-rings?” NATS 101-Physical Geography. October 20, 2010.

### Tours of the Laboratory of Tree-Ring Research

- Numerous short talks and informal discussions on fire history, forest sensitivity to climate, and dendroarchaeology during docent-led tours of the Bryant Bannister Tree-Ring Lab. (2013-present)
- Amphitheater High School students, Tucson, AZ. April 12, 2013.
- Dedication and Open House, Bryant Bannister Tree-Ring Building. March 1 & 2, 2013.

- UA College of Science Operation Military Kids – Career Pathfinders Camp, July 12, 2012.
- Arizona Archaeological and Historical Society, May 5, 2012. [Photo blog online.](#)
- Forest Health Conference group, April 16, 2012.

#### Off-Campus Outreach Events

- J.B. Wright Elementary School, Tucson, AZ. September 24, 2012
- BioBlitz 2011, Saguaro National Park West. October 22, 2011.
- Second Saturday Downtown Tucson. March 12, 2011.
- Math & Science FunFest, Tucson Convention Center, November 5, 2010.

## HONORS AND AWARDS

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- 2018 Young forester of the year, Southwestern Section of the Society of American Foresters.
- 2016 William G. McGinnies Graduate Scholarship in Arid Land Studies, School of Natural Resources and the Environment, University of Arizona. \$2,500
- 2016 College of Science Scholarship, University of Arizona. \$100.
- 2015 Galileo Circle Scholar, College of Science, University of Arizona. \$1,000.
- 2014 Andrew Ellicott Douglass Memorial Scholarship, Laboratory of Tree-Ring Research & College of Science, University of Arizona. Awarded for “outstanding academic achievement and high expectations of future contributions to dendrochronology.” \$2,700.
- 2014 Best presentation at the School of Earth and Environmental Sciences (SEES) Earthweek competitive plenary session. For *Continental drivers of fire activity in eastern Siberia*. (Tied for first) \$475.
- 2011 Graduate College Fellowship, University of Arizona, 2011-2012 academic year. \$600.
- 2011 Tuition and Registration Scholarship, School of Natural Resources and the Environment, University of Arizona, 2011-2012 academic year. \$3,000 (declined)
- 2009 Best Poster Presentation Award, Northeast Society of American Foresters (SAF) Conference, March 18-19, 2009. Portland, Maine.
- 2009 Phi Kappa Phi Honor Society inductee
- 2008 Charles E. Schomaker Memorial Scholarship, School of Forest Resources, University of Maine
- 2008 Golden Key International Honor Society inductee
- 2004 Sigma Xi Honor Society inductee

## PROFESSIONAL SOCIETY MEMBERSHIPS

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

## SKILLS

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<i>Software</i>	R, ArcGIS, QGIS, MS Access, Google Earth, Corel Draw, Open Data Kit (ODK), PDFmaps, Tellervo, FHAES, FHX2, Dendro program library
<i>Fieldwork</i>	Tree-ring sampling methods (increment borer, chainsaw), Variable and fixed-radius forest plot sampling, E-data collection on field computers and Android tablets, camping, backpacking, wilderness medicine (formerly WFA & WFR certified)

## REFERENCES

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Dr. Thomas Swetnam	Regents' Professor Emeritus of Dendrochronology, Laboratory of Tree-Ring Research, University of Arizona, Tucson, AZ. <a href="mailto:tswetnam@ltrr.arizona.edu">tswetnam@ltrr.arizona.edu</a> 575-829-4649
Dr. Connie Woodhouse	Professor, School of Geography and Regional Development, and Laboratory of Tree-Ring Research, University of Arizona, Tucson, AZ. <a href="mailto:conniew1@email.arizona.edu">conniew1@email.arizona.edu</a> 520-626-0235
Dr. Craig Allen	Research Ecologist and Station Lead, US Geological Survey, New Mexico Landscapes Field Station, Santa Fe, NM. <a href="mailto:craig_allen@usgs.gov">craig_allen@usgs.gov</a> 505-672-3861 x720
Dr. Donald Falk	Professor, School of Natural Resources and the Environment, University of Arizona, Tucson, AZ. <a href="mailto:dafalk@email.arizona.edu">dafalk@email.arizona.edu</a> 520-626-7201
Dr. Ellis Margolis	Research Ecologist, US Geological Survey, New Mexico Landscapes Field Station, Santa Fe, NM. <a href="mailto:emargolis@usgs.gov">emargolis@usgs.gov</a> 505-954-2251

Dr. Ann Lynch

Research Entomologist, Rocky Mountain Research Station, United States Forest Service, Tucson, AZ.

[lyncha@email.arizona.edu](mailto:lyncha@email.arizona.edu)

520-626-9582

Dr. Robert Seymour

Curtis Hutchins Professor of Silviculture, Emeritus, School of Forest Resources, University of Maine, Orono, ME.

[rseymour@maine.edu](mailto:rseymour@maine.edu)

207-944-9534