

Justin T. Maxwell

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Department of Geography
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Education

2012 The University of North Carolina at Greensboro, Greensboro, NC

Doctor of Philosophy (Ph.D.) in Geography

2008 Appalachian State University, Boone, NC

Master of Arts (M.A.) in Geography

2006 Appalachian State University, Boone, NC

Bachelor of Science (B.S.) in Business Administration (Concentration in
Hospitality and Tourism and a Minor in Geography)

Research Interests

My research bridges climate science and ecology using dendrochronology (the study of tree rings). A large portion of my work analyses tree rings to understand centennial- to millennial-scale variability of climate (i.e., paleoclimate). In so doing, I develop long-term reconstructions of variables such as soil moisture, precipitation, and temperature for periods before instrumental records began. I also use tree rings to understand how climatic extremes impact forest ecosystems to better understand how forests will respond to climate change.

Professional Experience

2023– **Professor**, Department of Geography, Indiana University

2022– **Department Chair**, Department of Geography, Indiana University

2018–2023 **Associate Professor**, Department of Geography, Indiana University

2018–2019 **Charles Bullard Fellow in Forest Research**, Harvard Forest, Harvard University

2012–2018 **Assistant Professor**, Department of Geography, Indiana University

RESEARCH

Peer-reviewed Journal Articles

underline represents student author, * represents advisee led paper

2023

[74] B.R. Lockwood*, Maxwell, J.T., Denham, S.O., Robeson, S.M., LeBlanc, D.C., Pederson, N., Novick, K.A., and Au, T.F. (Accepted). Interspecific difference in drought and pluvial

responses for *Quercus alba* and *Quercus rubra* across the eastern United States. *Agricultural Forest Meteorology* **340**, 109597

- [73] P. Fibich, Black, B.A., Doležal, J., Harley, G.L., **Maxwell, J.T.**, and Altman, J. (2023). Long-term tropical cyclone activity shapes forest structure and reduces tree species diversity of US temperate forests. *Science of the Total Environment* **884**, 163852.
- [72] G.L Harley, Therrell, M.D., **Maxwell, J.T.**, Bhuta, A., Bregy, J.C., Heeter, K.J., Patterson, T., Rochner, M., Rother, M.T., Stambaugh, M., Zampieri, N.E., Collins-Keys, S., Gentry, C., Huffman, J., Johnson, D.J., King, D.J., Larson, E., Leland, C., Nguyen, H., Pederson, N., Puhlick, J., Rao, M., Rodriguez-Caton, M., Sakulich, J., Singh, N., Tucker, C., van de Gevel, S., Kaiser, A., and Sarir, A. (In Press). The Longleaf Tree-Ring Network: Reviewing and expanding the utility of *Pinus palustris* Mill. dendrochronological data across the southeastern United States *Progress in Physical Geography: Earth and Environment* **47** (4), 570–596.

2022

- [71] T.F. Au*, **Maxwell, J.T.**, Robeson, S.M., Li, J., Siani, S.M.O., Novick, K.A., Dannenberg, M.P., Phillips, R.P., Li, T., Chen, Z., Lenoir, J. (2022). Younger trees in the upper canopy layer are more sensitive but also more resilient to drought: age matters. *Nature Climate Change* **12** (12), 1168–1174.
- [70] **J.T. Maxwell**, Harley, G.L., Tucker, C., Galuska, T., Ficklin, D.L., Bregy, J.C., Heeter, K.J., Au, T.F., Lockwood, B.R., Maxwell, R.S., Smith, L., Elliot, E.A., and Therrell, M.D. (2022). 1,100-Year Reconstruction of Baseflow for the Santee River, South Carolina, USA Reveals Connection to the North Atlantic Subtropical High. *Geophysical Research Letters* **49** (22): e2022GL100742.
- [69] C. Dow, Kim, A.Y., D’Orangeville, L.D., Gonzalez-Akre, E.B., Helcoski, R., Herrmann, V., Harley, G.L., **Maxwell, J.T.**, McGregor, I.R., McShea, W.J., McMahon, S., Pederson, N., Tepley, A.J., Anderson-Teixeira, K.J. (2022). Warmer spring temperatures in temperate deciduous forests advance the timing of tree growth but have little effect on annual woody productivity. *Nature* **608**, 552–557.
- [68] J.C. Bregy*, **Maxwell, J.T.**, Robeson, S.M., Harley, G.L., Elliot, E.A. and Heeter, K.J. (2022). Examining controls of US Gulf Coast tropical cyclone precipitation over the last 500 years. *Communications Earth and Environment* **3**, 1-11.
- [67] S.A. Kannenberg and **Maxwell, J.T.** (2022). Disentangling the drivers of non-stationary in tree growth. *Tree Physiology* **42** (6), 1128–1130.
- [66] S.A. Kannenberg, Cabon, A., Babst, F., Belmecheri, S., Delpierre, N., Guerrieri, R., **Maxwell, J.T.**, Meinzer, F.C., Moore, D.J., Pappas, C., Ueyama, P., Ulrich, D.E.M., Voelker, S.L., Woodruff, D., and Anderegg, W.R.L. (2022). Drought-induced decoupling between carbon uptake and tree growth impacts forest carbon turnover time. *Agricultural Forest Meteorology* **322**, 108996.
- [65] A. Cabon, Kannenberg, S.A., Arain, A., Babst, F., Belmecheri, S., Delpierre, N., Guerrieri, R., **Maxwell, J.T.**, McKenzie, S., Meinzer, F.C., Moore, D.J., Pappas, C., Rocha, A.V., Szejner, P., Ueyama, M., Ulrich, D.E.M., Vincke, C., Voelker, S.L., Wei, J., Woodruff, D., and

- Anderegg, W.R.L. (2022). Cross-biome synthesis of source versus sink limits to tree growth. *Science* **376** (6594), 758–761.
- [64] K.A. Novick, Jo, I., D’Orangeville, L., Benson, M., Au, T.F., Barnes, M., Denham, S., Fei, S., Heilman, K., Hwang, T., Keyser, T., **Maxwell, J.T.**, Miniati, C., McLachlan, J., Pederson, N., Wang, L., Wood, J., and Phillips, R.P. (2022). The drought response of Eastern US oaks in the context of their declining abundance. *BioScience* **72** (4), 333–346.
- [63] T.F. Au*, and **Maxwell, J.T.** (2022). Drought sensitivity and resilience of oak-hickory stands in the eastern United States. *Forests* **13** (3), 389.
- [62] K.J. Anderson-Teixeira, Herrmann, V., Rollinson, C.R., Gonzalez, B., Gonzalez-Akre, E.B., Pederson, N., Alexander, M.R., Allen, C.D., Alfaro-Sánchez, R., Awada, T., Baltzer, J.L., Baker, P.J., Birch, J.D., Bunyavejchewin, S., Cherubini, P., Davies, S.J., Dow, C., Helcoski, R., Kašpar, J., Lutz, J.A., Margolis, E.Q., **Maxwell, J.T.**, McMahon, S., Piconiot, C., Russo, S.E., Šamonil, P., Sniderhan, A.E., Tepley, A.J., Vašíčková, I., Vlam, M., and Zuidema, P.A. (2022). Joint effects of climate, tree size, and year on annual tree growth derived from tree-ring records of ten globally distributed forests. *Global Change Biology*, **28** (1), 245–266.

2021

- [61] **J.T. Maxwell**, Bregy, J.C., Robeson, S.M., Knapp, P.A., Soulé, P.T., and Trouet, V. (2021) Recent increase in tropical cyclone precipitation extremes over the US east Coast. *Proceedings of the National Academy of Sciences* **118** (41), e2105636118.
- [60] D.I. King, Harley, G.L., **Maxwell, J.T.**, Heeter, K.J., Vandermyde, B.J., and Cosgriff, R.J. (2021). Floodplain forest structure and the recent decline of *Carya illinoensis* (Wangenh.) K. Koch (northern pecan) at its northern latitudinal range margin, Upper Mississippi River System, USA. *Forest Ecology and Management*. **496**, 119454.
- [59] K.J. Heeter, Harley, G.L., **Maxwell, J.T.**, Wilson, R.J., Abatzoglou, J.T., Rayback, S.A., Rochner, M.L., and Kitchens, K. (2021). Tree-ring blue intensity-based temperature reconstructions for the low-to-mid latitude temperate zones of western North America. *Quaternary Science Reviews* **267**, 107064.
- [58] B.R. Lockwood*, **Maxwell, J.T.**, Robeson, S.M., Au, T.F. (2021) Assessing bias in diameter at breast height estimated from tree rings and its effects on basal area increment and biomass *Dendrochronologia* **67** (3), 125844.
- [57] L. Bishop, **Maxwell, J.T.**, and Rothrock, P.E. (2021). Old forest attributes in a maturing Indiana State Forest: an opportunity for future old growth. *The Journal of the Torrey Botanical Society* **148** (2), 132–153.
- [56] P.T. Soulé, Knapp, P.A., **Maxwell, J.T.**, and Mitchell, T. (2021). A comparison of the climate response of longleaf pine (*Pinus palustris* Mill.) trees among standardized measures of early-, late-, and total wood radial growth. *Trees* **35**, 1065–1074.
- [55] G.L. Harley, Heeter, K.J., **Maxwell, J.T.**, Rayback, S., Maxwell, R.S., Rienemann, T., Taylor, A. (2021). Towards broad-scale, long-term temperature reconstructions for Eastern North America using blue light intensity from tree rings. *International Journal of Climatology*. *International Journal of Climatology* **41** (S1), E3142–E3159.

- [54] P.A. Knapp, Soulé, P.T., **Maxwell, J.T.**, Ortengren, J.T., Mitchell, T.J. (2021). Tropical cyclone precipitation regimes since 1750 and the Great Suppression of 1843–1876 along coastal North Carolina, USA. *International Journal of Climatology* **41** (1), 200–210.

2020

- [53] D.C. LeBlanc, **Maxwell, J.T.**, Pederson, N., Berland, A., and Mandra, T.E. (2020). Radial growth responses of tulip poplar (*Liriodendron tulipifera*) to climate in the eastern United States. *Ecosphere* **11** (10), e03203.
- [52] **J.T. Maxwell**, Harley, G.L., Matheus, T.J., Strange, B.M., Pendergrass, K., Au, T.F., and Bergy, J.C. (2020). Sampling density and date along with species selection influence spatial representation of tree ring reconstructions. *Climate of the Past* **16** (5), 1901–1916.
- [51] M.D. Therrell, Elliott, E.A., Meko, M., Bregy, J.C., Tucker, C.S., Harley, G.L., **Maxwell, J.T.**, and Tootle, G. (2020). Streamflow variability and false ring formation in bald cypress (*Taxodium distichum*). *Forests* **11**, 1100.
- [50] T.F. Au*, **Maxwell, J.T.**, Novick, K.A., Robeson, S.M., Warner, S.M., Lockwood, B.R., Phillips, R.P., Harley, G.L., Telewski, F.W., Therrell, M.D., and Pederson, N. (2020). Demographic shifts in eastern US forests increase the impact of late-season drought on forest growth. *Ecography* **43**, 1475–1486.
- [49] K.J. Heeter, Harley, G.L., **Maxwell, J.T.**, McGee, J.H., and Matheus T.J. (2020). Blue intensity as a temperature proxy from a low-latitude population of Engelmann spruce (*Picea engelmannii* Sarg.) at its southern range extent, northern New Mexico, USA. *Climatic Change* **162**, 965–988.
- [48] E.E. Montpellier, Knapp, P.A., Soulé, P.T., and **Maxwell, J.T.** (2020). Microelevational differences affect long leaf pine (*Pinus palustris* Mill.) sensitivity to tropical cyclone precipitation: a case study using LiDAR. *Tree-Ring Research* **76** (2), 89–93.
- [47] N. Bussbert, **Maxwell, J.T.**, Robeson, S.M., Huang, C. (2020). The effect of end-point adjustments on smoothing splines used for tree-ring standardization. *Dendrochronologia* **60** (2), 125665.
- [46] J.C. Bregy*, **Maxwell, J.T.**, Robeson, S.M., Ortengren, J.T., Soulé, P.T., and Knapp, P.A. (2020). Spatiotemporal variability of tropical cyclone precipitation using a high-resolution, gridded (0.25° x 0.25°) dataset for the eastern United States, 1948–2015. *Journal of Climate* **33** (5), 1803–1819.
- [45] S.M. Robeson, **Maxwell, J.T.**, and Ficklin, D.L. (2020). Bias correction of paleoclimatic reconstructions: A new look at 1200+ years of Upper Colorado River flow. *Geophysical Research Letters* **47** (1): e2019GL086689.

2019

- [44] **J.T. Maxwell**, Harley, G.L., Mandra, T.E., Yi, K., Kannenberg, S.A., Au, T.F., Robeson, S.M., Pederson, N., Sauer, P.E., and Novick, K.A. (2019). Higher CO₂ concentrations and lower acidic deposition have not changed drought response in tree growth but do influence iWUE in hardwood trees in the Midwestern U.S.A. *Journal of Geophysical Research: Biogeosciences* **124** (12), 3798–3813.

- [43] E.E. Montpellier, Soulé, P.T., Knapp, P.A., and **Maxwell, J.T.** (2019). Dendroclimatic Assessment of Ponderosa Pine Radial Growth along Elevational Transects in Western Montana, U.S.A. *Forests* **10**, 1094.
- [42] S.A. Kannenberg, Novick, K.A., Alexander, M.R., **Maxwell, J.T.**, Moore, D.J.P. Phillips, R.P., and Anderegg, W.R.L. (2019). Linking drought legacy effects across scales: from leaves to tree rings to ecosystems. *Global Change Biology* **25** (9), 2978–2992.
- [41] J. Oliver, Harley, G.L., and **Maxwell, J.T.** (2019) Unprecedented 20th–21st century hydroclimate variability compared to the past 2500 years in New Mexico, USA. *Geophysical Research Letters* **46**, 4432–4400.
- [40] B. Strange*, **Maxwell, J.T.**, Robeson, S.M., Harley, G.L., Therrell, M.D., Ficklin, D.L. (2019) Comparing Three Approaches to Reconstructing Streamflow Using Tree Rings in the Midwestern, US. *Journal of Hydrology* **573**, 829–840.
- [39] P.T. Soulé, **Maxwell, J.T.**, and Knapp, P.A. (2019) Climate-growth responses from *Pinus ponderosa* trees using various measures of annual radial growth. *Tree-Ring Research* **75**(1), 23–33.
- [38] S.A. Kannenberg*, **Maxwell, J.T.**, Pederson, N., D’Orangeville, L., Ficklin, D.L., and Phillips, R.P. (2019) Drought legacies are dependent on water table depth, wood anatomy, and drought timing across the eastern U.S. *Ecology Letters* **22** (1), 119–127.
- [37] K. Yi, **Maxwell, J.T.**, Wenzel, M.K., Roman, D.T., Sauer, P.E., Phillips, R.P., and Novick, K.A. (2019) Linking variations in intrinsic water-use efficiency to isohydricity: a comparison at multiple temporal scales. *New Phytologist* **122**(1), 195–208.
- 2018
- [36] **J.T. Maxwell**, Harley, G.L. and Rahman, A.F. (2018) Annual growth rings in two mangrove species from the Sundarbans, Bangladesh demonstrate linkages to sea-level rise and broad-scale ocean-atmosphere variability. *Wetlands* **38**(6): 1159–1170.
- [35] T.J. Matheus* and **Maxwell, J.T.** (2018) The importance of placing modern droughts in historical context using tree-rings in the Ohio Valley. *Physical Geography* **39**, 343–353.
- [34] G.L. Harley, **Maxwell, J.T.**, Oliver, J., Holt, D.H., Bowman, J., Sokolosky-Wixon, M. (2018) Precision dating and cultural history of the La Pointe-Krebs House, Pascagoula, Mississippi, USA. *Journal of Archeological Science: Reports* **20**, 89–96.
- [33] L. D’Orangeville, **Maxwell, J.T.** Kneeshaw, D., Pederson, N., Duchesne, L., Logan, T., Houle, D., Arseneault, D., Beier, C., Bishop, D., Druckenbrod, D., Fraver, S., Girard, F., Halman, J., Hansen, C., Hart, J., Hartmann, H., Kaye, M., Leblanc, D., Manzoni, S., Rayback, S., Rollinson, C., and Phillips, R.P. (2018) Atmospheric water demand and timing regulate temperate forest sensitivity to drought. *Global Change Biology* **24**, 2339–2351.
- [32] G.L. Harley and **Maxwell, J.T.** (2018) Current declines of Pecos River streamflow in a 700-year context. *The Holocene*. **28**(5), 767–777.
- [31] E.M. Wilde* and **Maxwell, J.T.** (2018) Comparing climate-growth responses of urban and non-urban forests using *L. tulipifera* tree-rings in southern Indiana, USA *Urban Forestry & Urban Greening* **31**, 103–108.

2017

- [30] **J.T. Maxwell**, Knapp, P.A., Ortegren, J.T., Ficklin, D.L., and Soulé, P.T. (2017) Changes in the Mechanisms Causing Rapid Drought Cessation in the Southeastern United States of America. *Geophysical Research Letters*. **44** (24): 12,476–12,483.
- [29] J. Smerdon, Luterbacher, J., Phipps, S., Anchukaitis, K., Ault, T., Coats, S., Cobb, K., Cook, B., Colose, C., Felis, T., Gallant, A., Jungclaus, J., Konecky, B., LeGrande, A., Lewis, S., Lopatka, A., Man, W., Mankin, J., **Maxwell, J.T.**, Otto-Bliesner, B., Partin, J., Singh, D., Steiger, N., Stevenson, S., Tierney, J., Zanchettin, D., Zhang, H., Atwood, A., Andreu-Hayles, L., Baek, S., Buckley, B., Cook, E., D'Arrigo, R., Dee, S., Griffiths, M., Kulkarni, C., Kushnir, Y., Lehner, F., Leland, C., Linderholm, H., Okazaki, A., Palmer, J., Piovano, E., Raible, C., Rao, M., Scheff, J., Schmidt, G., Seager, R., Widmann, M., Williams, A.P. and Xoplaki, E. (2017) Comparing proxy and model estimates of hydroclimate variability and change over the Common Era. *Climate of the Past* **13**: 1851–1900.
- [28] T.J. Matheus*, **Maxwell, J.T.**, and Harley G.L. (2017) A method for measuring sub-annual ring widths of *Pinus edulis* and subsequent analysis of the climate-growth response of earlywood and latewood. *Tree-Ring Research* **73** (2): 91–101.
- [27] G.L. Harley, King, J., and **Maxwell, J.T.** (2017) Trans-Atlantic connections between North African dust flux and tree growth in the Florida Keys, U.S.A. *Earth Interactions* **21**: 1–22.
- [26] **J.T. Maxwell** and Harley, G.L. (2017) Increased tree-ring network density reveals more precise estimations of sub-regional hydroclimate variability and climate dynamics in the Midwest, U.S.A. *Climate Dynamics* **49**: 1479–1493.
- [25] R.S. Maxwell, Harley, G.L., **Maxwell, J.T.**, Rayback, S., Pederson, N., Cook, E.R. Barclay, D., and Li, W. (2017) An interbasin comparison of tree-ring reconstructed streamflow in the eastern United States. *Hydrological Processes* **31**: 2381–2394.
- [24] G.L. Harley, **Maxwell, J.T.**, Holt, D.H., and Speagle, C. (2017) Construction History of the Deason House, Jones County, Mississippi. *Dendrochronologia* **43**: 50–58.
- [23] T.J. Matheus*, **Maxwell, J.T.**, Oliver, J., Thornton, M., Hess, M., and Harley G.L. (2017) A dendrochronological evaluation of three historic pioneer cabins at Spring Mill Village, Indiana. *Dendrochronologia* **43**: 12–19.
- [22] G.L. Harley, **Maxwell, J.T.**, Larson, E.R., Grissino-Mayer, H.D., Henderson, J., and Huffman, J. (2017) Suwannee River flow variability 1550–2005 CE reconstructed from a multispecies tree-ring network. *Journal of Hydrology* **544**: 438–451.

2016

- [21] **J.T. Maxwell**, Harley, G.L., and Robeson, S.M. (2016) On the declining relationship between tree growth and climate in the Midwest United States: The fading drought signal. *Climatic Change*. **138**: 127–142.

- [20] P.A. Knapp, **Maxwell, J.T.**, and Soulé, P.T. (2016) Tropical cyclone rainfall variability in coastal North Carolina derived from longleaf pine (*Pinus palustris* Mill.): AD 1771-2014. *Climatic Change* **135** (2): 311–323.
- [19] **J.T. Maxwell**, Ficklin, D.L., Harley, G.L., and Jones, G.V. (2016) Projecting future winegrape yields using a combination of *Vitis vinifera* growth rings and soil moisture simulations, northern California, U.S.A. *Australian Journal of Grape and Wine Research* **22** (1) 73–80.
- [18] P.A. Knapp, **Maxwell, J.T.**, Ortegren, J.T., and Soulé, P.T. (2016) Spatio-temporal changes in comfortable weather duration in the continental U.S. and implications for human wellness. *Annals of the Association of American Geographers* **106** (1): 1–18.
- [17] **J.T. Maxwell** (2016) The benefit of including rarely used species in dendroclimatic reconstructions: a case study using *Juglans nigra* in south-central Indiana, USA. *Tree-Ring Research* **72** (1): 44–52.

2015

- [16] G.L Harley, **Maxwell, J.T.**, and Raber, G.T. (2015) Elevation promotes long-term survival of the foundation species (*Pinus elliottii* var. *densa*) of the endangered pine rockland ecosystem in the Florida Keys. *Endangered Species Research* **29** (2): 117–130.
- [15] D.L Ficklin, Letsinger, S.L., Gholizadeh, H., **Maxwell, J.T.** (2015) Incorporation of the Penman-Monteith potential evapotranspiration method into a Palmer Drought Severity Index tool. *Computers & Geosciences* **85** (Part A): 136–141.
- [14] **J.T. Maxwell**, Harley, G.L. and Matheus, T.I. (2015) Dendroclimatic reconstructions from multiple co-occurring species: a case study from an old-growth deciduous forest in Indiana, USA. *International Journal of Climatology* **35** (6): 860–870.
- [13] D.L Ficklin, **Maxwell, J.T.** Letsinger, S.L., Gholizadeh, H.A. (2015) A Climatic deconstruction of recent drought trends in the United States. *Environmental Research Letters* **10** (4): 04409.

2014

- [12] J.T. Ortegren, and **Maxwell, J.T.** (2014) Characteristics of the interaction between droughts and tropical cyclones in the southeastern U.S. *Geography Compass* **8** (8): 540–559.
- [11] J.T. Ortegren, Weatherall, A., and **Maxwell, J.T.** (2014) Subregionalization of low frequency summer drought variability in the southeastern U.S.A. *Professional Geographer* **66** (2): 323–332.

2013

- [10] M. Smith, Stallins, J.A., **Maxwell, J.T.**, Van Dyke, C. (2013) The complex nature of hydrological shifts and tree growth responses to river modification along the Apalachicola River, Florida. *Physical Geography* **34** (6): 491–511.

- [9] **J.T. Maxwell**, Ortegren, J.T., Knapp, P.A., and Soulé, P.S. (2013) Tropical cyclones and drought amelioration in the Gulf and Southeastern Coastal United States. *Journal of Climate* **26** (21): 8440–8452.
- [8] **J.T. Maxwell**, Knapp, P.A., and Ortegren, J.T. (2013) Influence of the Atlantic Multidecadal Oscillation on Tupelo Honey Production from AD 1800–2010. *Agricultural and Forest Meteorology* **174–175**: 129–134.
- [7] P.A. Knapp, Soulé, P.T. and **Maxwell, J.T.** (2013) Mountain Pine Beetle Selectivity in Old-Growth Ponderosa Pine Forests: A Dendroecological Analysis between Live and Dead Trees in Outbreak Areas. *Ecology and Evolution* **3** (5): 1141–1148.
- [6] H.D. Grissino-Mayer, **Maxwell, J.T.**, Harley, G.L., Garland, N.A., Holt, D.H., Absher, C., Beale, B.J., Boehm, M.S., de Graauw, K.A., Rautio, A., and Dye, A.W. (2013) Dendrochronology reveals the construction history of an early 19th century farm settlement, southwestern Virginia, USA. *Journal of Archaeological Science* **40** (1): 481–489.

2012

- [5] **J.T. Maxwell**, Soulé, P.T., Ortegren, J.T., and Knapp, P.A. (2012) Drought busting tropical cyclones in the southeastern Atlantic United States: 1950–2008. *Annals of the Association of American Geographers* **102** (2): 259–275.
- [4] **J.T. Maxwell** and Knapp, P.A. (2012) Reconstructed tupelo-honey yield in northwest Florida inferred from *Nyssa Ogeche* tree-ring data: 1850–2009. *Agriculture, Ecosystems, & Environment* **149**: 100–108.

2011

- [3] J.T. Ortegren, Knapp, P.A., **Maxwell, J.T.**, Tyminski, W.P., and Soulé, P.T. (2011) Ocean atmosphere influence on low-frequency warm-season drought variability in the Gulf Coast and Southeastern U.S.A. *Journal of Applied Meteorology and Climatology* **50** (6): 1177–1186
- [2] **J.T. Maxwell** and Soulé, P.T. (2011) Drought and other driving forces behind population change in six rural counties in the United States. *Southeastern Geographer* **51** (1): 133–149.

2009

- [1] **J.T. Maxwell** and Soulé, P.T. (2009) United States drought of 2007: historical perspectives. *Climate Research* **38** (2): 95–104.

In Review Manuscripts

J.C. Bregy*, **Maxwell, J.T.**, Robeson, S.R., Harley, G.L., and Trouet, V. Variations in the western flank of the North Atlantic Subtropical High since 1140 CE: extremes, hydroclimate patterns, and volcanic forcing. *Nature Geosciences* (In review Nov. 2023)

Grants, Fellowships, Honors, and Awards

Externally Funded Grants

- 2021–2024 **Reconstructing tropical cyclone precipitation throughout the Southeastern United States.** Lead-Principal Investigator with Co-PI Monica Rother (University of North Carolina, Wilmington), Co-PI Grant Harley (University of Idaho), and Co-PI Arvind Bhuta (United States Forest Service). National Science Foundation 493,003; \$258,774 to IU.
- 2020–2023 **Summer temperature reconstructions for Eastern North America.** Co-Principal Investigator with PI Grant Harley (University of Idaho) and Co-PI Shelly Rayback (University of Vermont). National Science Foundation \$361,076; \$124,787 to IU.
- 2018–2021 **Paleo-perspectives of streamflow variability for Southeastern Interstate Rivers.** Co-Principal Investigator with PI Glen Tootle (University of Alabama) and Co-PIs Matthew Therrell (University of Alabama), Jonghun Kam (University of Alabama), Grant Harley (University of Idaho) and Emily Elliot (University of Alabama). National Science Foundation. \$452,410; \$49,098 to IU.
- 2018–2020 **Using Dendrochronology to Understand Historical Forest Growth, Stand Development, and Gap Dynamics.** Co-Principal Investigator with PI Grant Harley (University of Idaho). United States Geological Survey. \$112,270, \$40,000 to IU.
- 2017–2020 **Drought impacts on species-specific carbon uptake and growth in Eastern U.S. hardwood forests.** Co-Principal Investigator with PI Kimberly Novick (IU-School of Public and Environmental Affairs) and Co-PIs Lixin Wang (Indiana University-Purdue University-Indianapolis, Earth Sciences), Rich Phillips (IU-Biology), and Jeffery Wood (University of Missouri, School of Natural Resources). United States Department of Agriculture. \$469,263; \$98,286 to IU (PI Maxwell portion).
- 2017–2020 **A Paleoclimatic Examination of Tropical Cyclone-Derived Precipitation Variability and Atmospheric-Oceanic Controls Inferred from Longleaf Pine in the Coastal Carolinas, USA.** Co-Principal Investigator with PI Paul Knapp (University of North Carolina at Greensboro) and Co-PI Peter Soule (Appalachian State University). National Science Foundation. \$300,866; \$83,014 to IU.

Internally Funded Grants

- 2019–2021 **Reconstructing temperature using blue light intensity for tree rings at low latitudes in the southern Rockies, USA.** Principal Investigator, Collaborative Research Award: Grant Preparation, The Institute for Advanced Study, Indiana University. \$8,300
- 2016–2017 **Explaining the deteriorating relationship between tree growth and drought across different landscape conditions throughout the Midwestern USA.** Principal Investigator, Indiana University Faculty Research Support Program-Seed Funding, \$16,433

Fellowships

- 2018–2019 *Charles Bullard Fellowship in Forest Research*, Harvard Forest \$38,981
- 2011–2012 *GK-12 Fellowship*, National Science Foundation, \$30,000

2011 *NADEF Research Fellowship, National Science Foundation, \$3,000*

Honors and Awards

2017 *John Russell Mather Paper of the Year Award, Climate Specialty Group, Association of American Geographers*

2011 *Honorable Mention, Graduate Student Honors Paper Competition (Ph.D.) Southeastern Division of the Association of American Geographers*

2008 *Julian Yoder Scholarship, Department of Geography and Planning, Appalachian State University. \$500*

Invited Presentations

Oct. 2022 What can tree growth tell us about the response of eastern North America deciduous forests to climate change? *Yi-Fu Lecture Series, Department of Geography, University of Wisconsin, Madison, WI.*

Feb. 2022 Recent Increase in tropical cyclone precipitation extremes over the US East Coast. *Colloquium Series, Department of Earth and Environmental Sciences, University of West Florida, Pensacola, FL.*

Feb. 2021 Increasing tropical cyclone precipitation amounts over the past 300+ years. *Colloquium Series, Department of Geography and Geosciences, University of Louisville, Louisville, KY.*

Sept. 2019 How do anomalously wet periods influence the drought response of radial tree growth? *Colloquium Series, Department of Geographical and Sustainability Sciences, University of Iowa, Iowa City, IA.*

Mar. 2019 Radial growth from trees in the central hardwood forest are becoming less sensitivity to soil moisture. *Colloquium Series, Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY.*

Mar. 2019 Reconstructing climate using tree rings from a mesic environment. *Colloquium Series, Department of Geography, University of Vermont, Burlington VT.*

Oct. 2018 Documentation of a weakened relationship between tree rings and soil moisture in the central hardwood forest. *Colloquium Series, Harvard Forest, Harvard University, Petersham, MA.*

Apr. 2018 Documentation of a weakening relationship between tree growth and soil moisture in the Ohio River Valley. *Colloquium Series, Department of Earth and Environment Systems, Indiana State University, Terre Haute, IN.*

Apr. 2017 On the declining relationship between tree growth and climate in the Midwest United States: The fading drought signal. *John Russ Mather Paper of the Year Award, Climate Specialty Group, American Association of Geographers, Boston, MA.*

Nov. 2016 The influence of extended wet periods on the ability of tree rings to represent soil moisture in eastern US mesic forests. *Colloquium Series, Department of Biology, Ball State University, Muncie, IN.*

Sep. 2016 Examining the weakening relationship between tree-rings and soil moisture in the Midwest US. *Colloquium Series, Harvard University Herbaria, Cambridge, MA.*

- Sep. 2016 The ability of tree-rings to represent soil moisture in eastern US forests: challenges from changing climatic conditions. *Colloquium Series, George Perkins Marsh Institute, Clark University, Worcester, MA.*
- Nov. 2015 Are tree-rings a temporally stable proxy of soil moisture in the eastern U.S.? *Colloquium Series, Department of Earth Sciences, Indiana University-Purdue University Indianapolis, Indianapolis, IN.*
- Oct. 2014 Drought busting tropical cyclones: Spatiotemporal patterns of drought amelioration in the Gulf and Southeastern Coastal United States. *Colloquium Series, Department of Geography, University of Kentucky, Lexington, KY.*
- Oct. 2011 Tree-Ring Growth and Tupelo Honey Production. *Ninety-First Annual Convention of the Florida State Beekeepers Association, Orlando, FL.*
- Oct. 2011 *Nyssa ogeche* tree-rings, tupelo honey and ARSTAN. *Seminar in Tree-Ring Research, Department of Geography and Planning, Appalachian State University, Boone, NC.*

Presentations at Indiana University

- Sept. 2020 Are tropical cyclones getting wetter? Using tree rings to put tropical cyclone precipitation into a historical context. *Colloquium Series, Department of Earth and Atmospheric Sciences, Indiana University, Bloomington, IN.*
- Mar. 2018 Why are trees becoming less sensitive to soil moisture in the Midwest? *Colloquium Series, Department of Geography, Faculty Spotlight, Indiana University, Bloomington, IN.*
- Nov. 2014 Spatiotemporal patterns of drought-busting tropical cyclones in the Southeastern Coastal United States. *Colloquium Series, School of Public and Environmental Affairs, Indiana University, Bloomington, IN.*
- Nov. 2012 Global Climate Change. *Geography Awareness Week, Department of Geography, Indiana University, Bloomington, IN.*

Presentations at Professional Meetings

underline represents student author

- Dec. 2022 **J.T. Maxwell**, Harley, G.L., Heeter, K.J., Cook, E.R., Rayback, S.A., and Reinig, F. Historical context of recent warming in northeastern North America using blue light intensity from tree rings. *American Geophysical Union Annual Meeting, Chicago, IL.*
- Dec. 2022 J.C. Bregy*, **Maxwell, J.T.**, Robeson, S.M., Harley, G.L., and Trouet, V. Extremes and Volcanically Driven Changes in the Western Flank of the Bermuda High Since the 12th Century. *American Geophysical Union Annual Meeting, Chicago, IL.*
- Dec. 2022 D. Cala, Denham, S.O., Beverly, D.P., **Maxwell, J.T.**, Saunders, M.R., and Novick, K.A. Using flux tower data to inform verification and monitoring approaches for forest carbon accounting *American Geophysical Union Annual Meeting, Chicago, IL.* (Poster).
- Dec. 2022 Harris, V., Eckley, G., **Maxwell, J.T.**, Martin, E., Wise, E., and Dannenberg, M.P. Earlywood and Latewood Records from *Quercus alba* Show the Influence of Shifts in

- Precipitation and Vapor Pressure Deficit Seasonality on Tree Growth *American Geophysical Union Annual Meeting*, Chicago, IL. (Poster).
- Dec. 2021 **J.T. Maxwell**, Galuska, T., Harley, G.L., Ficklin, D.L., Bregy, J.C., Au, T.F., Heeter, K.J., Lockwood, B.R., Elliott, E., and Therrell, M. 1,100-year reconstruction of baseflow, indicates that high baseflow extremes are decreasing for the Santee River, South Carolina, USA. *American Geophysical Union Annual Meeting*, New Orleans, L.A. (eLightning).
- Dec. 2021 J.C. Bregy*, **Maxwell, J.T.**, Robeson, S.M., Harley, G.L., Elliott, E., and Heeter, K.J. Changes in Tropical Cyclone Rainfall Driven by Volcanism over the Last 500 Years. *American Geophysical Union Annual Meeting*, New Orleans, L.A.
- Dec. 2021 K.J. Heeter, Harley, G.L., **Maxwell, J.T.**, Cook, E.R., Coulthard, B., Wilson, R. Introducing the North America Paleo-temperature Atlas, a 1x1° Spatial Field Reconstruction of Summer Air Temperature. *American Geophysical Union Annual Meeting*, New Orleans, L.A.
- Dec. 2021 S.A. Kannenberg, Cabon, A., Babst, F., Belmecheri, S., Delpierre, N., Guerrieri, R., **Maxwell, J.T.**, Meinzer, F.C., Moore, D.J., Pappas, C., Ueyama, P., Ulrich, D.E.M., Voelker, S.L., and Anderegg, W.R.L. Drought-induced decoupling between tree growth and carbon uptake impacts forest carbon turnover time. *American Geophysical Union Annual Meeting*, New Orleans, L.A.
- Dec. 2021 J.C. Bregy*, **Maxwell, J.T.**, Harley, G.L., and Robeson, S.M. Reconstructing and Quantifying Changes in the Western Flank of the North Atlantic Subtropical High Since 1430 CE Using a Multispecies Tree-Ring Network. *American Geophysical Union Annual Meeting*, New Orleans, L.A. (Poster).
- Dec. 2021 M. Therrell., Tootle, G., Corbin, J., Tucker, C., Harley, G.L., and **Maxwell, J.T.** Tree-Ring Reconstructions of the Apalachicola-Chattahoochee-Flint (ACF) River System. *American Geophysical Union Annual Meeting*, New Orleans, L.A. (Poster).
- Apr. 2021 **J.T. Maxwell**, Bregy, J.C., Robeson, S.M., Knapp, P.A., Soulé, P.T., and Trouet, V. Increasing tropical cyclone precipitation amounts over the past 300+ years. *Annual Meeting of the American Association of Geographers*, Virtual. (Poster).
- Apr. 2021 Coulthard, B.L., Harley, G.L., **Maxwell, J.T.**, Brice, R., Guiterman, C., Heeter, K., and Anchukaitis, K. A two-millennia snowpack reconstruction for the Sangre de Cristo Mountains. *Annual Meeting of the American Association of Geographers*, Virtual.
- Dec. 2020 **J.T. Maxwell**, Pederson, N., Au, T.F., Lockwood, B.R., Harley, G.L., Phillips, R.P., and Novick, K.A. Radial growth responses to drought converge across species with increased drought severity in Eastern US hardwood forests. *American Geophysical Union Annual Meeting*, Virtual.
- Dec. 2020 J.C. Bregy, **Maxwell, J.T.**, Harley, G.L., Elliott, E., Robeson, S.M., and Heeter, K.J. 500 Years of Tropical Cyclone Precipitation Variability Along the Gulf Coast: Multidecadal Patterns, Trends, and Climate Connections. *American Geophysical Union Annual Meeting*, Virtual. (Poster).
- Dec. 2019 **J.T. Maxwell**, Bregy, J.C., Knapp, P.A., and Soulé, P.T. Increasing Tropical Cyclone Precipitation Extremes along the Southeast Atlantic Coast over the Last 350 Years. *American Geophysical Union Annual Meeting*, San Francisco, CA.

- Dec. 2019 T.F. Au, **Maxwell, J.T.**, Novick, K.A., Robeson, S.M., Lockwood, B.R., Warner, S.M., Harley, G.L. Phillips, R.P., Therrell, M.D., Telewski, F., and Pederson, N. Increasing Late-season Drought Impacts on Forest Productivity due to Mesophication in the Eastern US Forests. *American Geophysical Union Annual Meeting*, San Francisco, CA. (Poster).
- Dec. 2019 J.C. Bregy, **Maxwell, J.T.**, Harley, G.L., and Heeter, K. A ~500-Year Reconstruction of Seasonal Tropical Cyclone Precipitation Estimates Along the Gulf Coast, USA. *American Geophysical Union Annual Meeting*, San Francisco, CA. (Poster).
- Dec. 2019 J.C. Bregy, Wallace D.J., and **Maxwell, J.T.**, Cooking Up a Storm: A Recipe for the North Atlantic Hurricane Climate in Only ~100 Ma. *American Geophysical Union Annual Meeting*, San Francisco, CA. (Poster).
- Dec. 2019 S.A. Kannenberg, Novick, K.A., Phillips, R.P., **Maxwell, J.T.**, Pederson, N., D'Orangeville, L. and Anderegg, W. Towards a holistic understanding of tree drought recovery: Leveraging greenhouse experiments, tree-ring records, and ecosystem fluxes to quantify the impacts of water stress on tree physiology and forest carbon cycling. *American Geophysical Union Annual Meeting*, San Francisco, CA.
- Dec. 2019 T. Roberts, Elliot, E.A., Therrell, M.D., Lampman, C.R., **Maxwell, J.T.**, Harley, G.L., and Bregy, J.C. Utilizing Anatomical Anomalies in *Taxodium distichum* to reconstruct Tropical Cyclone Activity along the Northern Gulf of Mexico. *American Geophysical Union Annual Meeting*, San Francisco, CA (Poster).
- Oct. 2019 T.F. Au, **Maxwell, J.T.**, Novick, K.A., Robeson, S.M., Lockwood, B.R., Warner, S.M., Harley, G.L. Phillips, R.P., Therrell, M.D., Telewski, F., and Pederson, N. Forest compositional shift induces higher late-season drought impacts in the eastern United States. *China Dendrochronology Conference*, Xishuangbanna, Yunnan, China.
- Aug. 2019 T.F. Au, **Maxwell, J.T.**, Novick, K.A., Robeson, S.M., Lockwood, B.R., Warner, S.M., Harley, G.L. Phillips, R.P., Therrell, M.D., Telewski, F., and Pederson, N. Species-specific responses of radial growth to moisture variability indicate a greater impact of drought with forest mesophication in the eastern United States. *Ecological Society of America Annual Meeting*, Louisville, KY.
- Aug. 2019 B.R. Lockwood, **Maxwell, J.T.**, LeBlanc D.C., Au, T.F., and Robeson, S.M. Tree thirst and growth: Comparative differences in co-occurring *Quercus* radial growth response to moisture stress *Ecological Society of America Annual Meeting*, Louisville, KY. (Poster).
- Jul. 2019 T.F. Au, **Maxwell, J.T.**, Pederson, N., Harley, G.L., Therrell, M.D., Lockwood, B.R., Warner, S.M., Telewski, F., Robeson, S.M., Phillips, R.P., and Novick K.A., Mesophication from oak to maple: a tree-ring perspective in the forests of eastern United States. *Species on the Move*, Kruger National Park, South Africa.
- Apr. 2019 **J.T. Maxwell**, Pederson, N., Au, T.F., Lockwood, B.R., Harley, G.L., Phillips, R.P., and Novick, K.A. Using a water-use framework to explain species-specific radial growth drought response in Eastern U.S. hardwood forests. *Annual Meeting of the American Association of Geographers*, Washington D.C.

- Apr. 2019 G.L. Harley, **Maxwell, J.T.**, and Oliver, J.S. 2500 years of hydroclimate variability for New Mexico, USA. *Annual Meeting of the American Association of Geographers*, Washington D.C.
- Apr. 2019 T.J. Matheus, **Maxwell, J.T.**, and Harley, G.L. The potential for a millennial length, spatially dense monsoon reconstruction from tree-rings in New Mexico, USA. *Annual Meeting of the American Association of Geographers*, Washington D.C.
- Apr. 2019 P.A. Knapp, Soulé, P.T., **Maxwell, J.T.**, Ortegren, J.T., Bregy, J.C. North Atlantic tropical cyclone precipitation changes post volcanic eruptions: Evidence from North Carolina longleaf pine (*Pinus palustris* Mill.): AD 1770–2000 *Annual Meeting of the American Association of Geographers*, Washington D.C. (Poster).
- Apr. 2019 Soulé, P.T., Knapp, P.A., **Maxwell, J.T.** A comparison of the climate response of North Carolina longleaf pine (*Pinus palustris* Mill.) trees among standardized measures of early-, late-, and totalwood radial growth. *Annual Meeting of the American Association of Geographers*, Washington D.C. (Poster).
- Dec. 2018 **J.T. Maxwell**, Novick, K.A., Mandra, T. Robeson, S.M., and Harley, G.L. Comparing the climate signal of annual radial growth and latewood $\Delta^{13}\text{C}$ across four hardwood species in the Midwestern US *American Geophysical Union Annual Meeting*, Wasington, D.C. (eLightning)
- Dec. 2018 J.C. Bregy, **Maxwell, J.T.**, and Harley, G.L. Latewood Radial Growth as a Proxy for Reconstructing Tropical Cyclone Precipitation Along the Gulf Coast, United States. *American Geophysical Union Annual Meeting*, Washington, D.C. (Poster)
- Dec. 2018 G.L. Harley and **Maxwell, J.T.**, Current declines of Pecos River streamflow in a 700-year context. *American Geophysical Union Annual Meeting*, Washington, D.C. (Poster)
- Nov. 2018 P.A. Knapp, Soulé, P.T., and **Maxwell, J.T.** North Atlantic tropical cyclone precipitation decreases post volcanic eruptions: evidence from North Carolina longleaf pine (*Pinus palustris* Mill.): AD 1790–2017. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Johnson City, TN. (Poster)
- Nov. 2018 P.T. Soulé, **Maxwell, J.T.**, and Knapp, P.A. Climate-growth responses from *Pinus ponderosa* trees using multiple measure of annual radial growth. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Johnson City, TN. (Poster)
- Oct. 2018 B. Lockwood, **Maxwell, J.T.**, LeBlanc, D, Pederson, N. Robeson, S.M., Au, T., Novick, K.A. Tree thirst and growth: comparative differences in white oak and northern red oak. *Society of American Foresters Annual Meeting*, Portland, OR.
- Aug. 2018 T. Au, Pederson, N, Novick, K.A., Lockwood, B., Harley, G.L., Therrell, M., Phillips, R.P., Warner, S.M., Telewski, F.W., and **Maxwell, J.T.** Species-specific tree growth responses to drought of co-occurring sugar maple (*Acer saccharum*) and white oak (*Quercus alba*) in the eastern United States. *Ecological Society of America Annual Meeting*, New Orleans, LA. (Poster).
- Jun. 2018 T. Au, Lockwood, B., Pederson, N., Harley, G.L., Novick, K.A., Phillips, R.P., Therrell, M., **Maxwell, J.T.** Species-specific tree growth responses to drought in the eastern United States. *10th World Dendro Conference*, Thimphu, Bhutan. (Poster).

- Apr. 2018 B. M. Strange, **Maxwell, J.T.**, Robeson, S.M., and Harley, G.L. Evaluation of streamflow variability for the Wabash River in the Midwest, U.S. using tree rings. *Annual Meeting of the American Association of Geographers*, New Orleans, LA.
- Apr. 2018 J.C. Bregy, **Maxwell, J.T.**, and Robeson, S.M. North Atlantic tropical cyclone precipitation and climate interactions in the eastern United States, 1948–2015. *Annual Meeting of the American Association of Geographers*, New Orleans, LA.
- Apr. 2018 J.H. McGee, Harley, G.L., Maxwell, J.T., and Matheus, T.J. Testing the efficacy of Blue Intensity as a temperature proxy in *Picea engelmannii* from its southern range limit, northern New Mexico. *Annual Meeting of the American Association of Geographers*, New Orleans, LA (Poster).
- Apr. 2018 D.H. Holt, Harley, G.L., Maxwell, J.T., and Speagle, C. History of the Deason House, Jones County, Mississippi as told by Proxies. *Annual Meeting of the American Association of Geographers*, New Orleans, LA.
- Apr. 2018 P.T. Soulé, Knapp, P.A., and **Maxwell, J.T.** An update to a multi-century reconstruction of tropical cyclone precipitation in the North Carolina coastal region using the tree-ring record of longleaf pine *Annual Meeting of the American Association of Geographers*, New Orleans, LA (Poster)
- Dec. 2017 **J.T. Maxwell**, Knapp, P.A., Ortegren, J.T., Ficklin, D.L., and Soulé, P.T. Changes in the Mechanisms behind Rapid Drought Cessation in the Southeastern U.S. *American Geophysical Union Annual Meeting*, New Orleans, LA.
- Dec. 2017 J.C. Bregy, **Maxwell, J.T.**, and Robeson, S.M. North Atlantic Tropical Cyclone Precipitation and Climate Interactions Using a High-Resolution Dataset for the Eastern United States, 1948–2015. *American Geophysical Union Annual Meeting*, New Orleans, LA. (Poster)
- Dec. 2017 B.M. Strange, **Maxwell, J.T.**, Robeson, S.M., and Harley, G.L. Examining the Feasibility of Using Tree Rings to Reconstruct Streamflow in the Midwestern, United States: A Case Study for the Wabash River. *American Geophysical Union Annual Meeting*, New Orleans, LA. (Poster)
- Dec. 2017 S. Kannenburg, **Maxwell, J.T.**, Pederson, N., D'Orangeville, L.D., Phillips, R.P. Drought-induced legacy effects in wood growth across the Eastern and Midwestern U.S. are mediated by site climate, tree age, and drought sensitivity. *American Geophysical Union Annual Meeting*, New Orleans, LA. (Poster)
- Nov. 2017 D. Holt, Harley, G.L., **Maxwell, J.T.**, and Speagle, C. History of the Deason House, Jones County, Mississippi as told by proxies. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Jackson, MS.
- Aug. 2017 T. Mandra, Novick, K., **Maxwell, J.T.**, Sauer, P.E., Wenzel, M., Yi, K. Disentangling VPD and CO₂ effects on long-term trends in plant water use efficiency. *Ecological Society of America Annual Meeting*, Portland, OR. (Poster)
- Apr. 2017 T. Mandra, **Maxwell, J.T.**, Sauer, P., Wenzel, M., Yi, K., Novick, K. What tree-rings can tell us about plant responses to climate change. *Integrated Program in the Environment Interdisciplinary Environmental and Sustainability Research Exhibition and Awards*, Bloomington, IN. (Poster)

- Apr. 2017 P.T. Soulé, Knapp, P.A., and **Maxwell, J.T.** Growth Responses of Ponderosa Pine to Warming Climatic Conditions along Elevational Gradients in the Northern Rockies, USA *Annual Meeting of the American Association of Geographers*, Boston, MA. (Poster)
- Mar. 2107 D.C. LeBlanc and **Maxwell, J.T.** Growth-Climate Relationship of tuliptree (*Liriodendron tulipifera*) in Eastern North America *Annual Meeting of Indiana Academy of Sciences*, Indianapolis, IN.
- Dec. 2016 O. Youmi, Yi, K., Novick, K.A., **Maxwell, J.T.**, Guerrieri, R., and Welp, L. Carbon stable isotopes in leaf and tree ring: importance of remobilization and post-photosynthetic processes. *American Geophysical Union Annual Meeting*, San Francisco, California. (Poster)
- Nov. 2016 R.S. Maxwell, Harley, G.L., **Maxwell, J.T.**, Rayback, S., Pederson, N., Cook, E.R. Barclay, D., Li, W., and Rayburn, J.A. Tree-Ring Reconstructions of Streamflow in the Eastern U.S. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Columbia, South Carolina.
- Nov. 2016 J.S. Oliver, Harley, G.L., **Maxwell, J.T.**, Grissino-Mayer, H.D. A Multi-Millennial Perspective of Drought Variability for the American Southwest using Rocky Mountain Juniper (*Juniperus scopulorum* Sarg.) *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Columbia, South Carolina.
- Nov. 2016 M.P. Thornton, Harley, G.L., **Maxwell, J.T.**, A Multi-Centennial Perspective of Snowpack Variability for the Sangre de Cristo Mountains, New Mexico, USA *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Columbia, South Carolina.
- Nov. 2016 Knapp, P.A, **Maxwell, J.T.**, Soulé, P.T. A 235-year Record of Precipitation from Tropical Cyclones in Eastern North Carolina Derived from Longleaf Pine (*Pinus palustris* Mill.) *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Columbia, South Carolina.
- Nov. 2016 T. Mitchell, Foglietti, R. Ortégren, J.T. and **Maxwell, J.T.** Ocean -Atmosphere Influences on U.S. Tornado Variability. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Columbia, South Carolina. (Poster).
- Apr. 2016 **J.T. Maxwell**, Harley, G.L., Robeson, S.M. On the declining relationship between tree growth and climate in the Midwest United States: The fading drought signal. *The Third American Dendrochronological Conference*, Mendoza, Argentina.
- Apr. 2016 G.L. Harley, **Maxwell, J.T.** Suwannee River (Florida, USA) flow variability 1550–2005 CE reconstructed from a multispecies tree-ring network. *The Third American Dendrochronological Conference*, Mendoza, Argentina.
- Apr. 2016 T.J. Matheus, **Maxwell, J.T.** Methods for analyzing late wood ring widths for the climate signal of pinion pine. *Annual Meeting of the Association of American Geographers*, San Francisco, CA.
- Apr. 2016 K.R. Schmidt, **Maxwell, J.T.** A 325-Year reconstruction of St. Joseph River (Michigan) streamflow using tree rings *Annual Meeting of the Association of American Geographers*, San Francisco, CA.
- Apr. 2016 P.T. Soulé, Knapp, P.A. **Maxwell, J.T.** Reconstructing Arctic sea-ice extent and summer surface temperature in the northern Rockies, USA using multi-century

- alpine larch tree-ring records. *Annual Meeting of the Association of American Geographers*, San Francisco, CA. (Poster)
- Apr. 2016 P.A. Knapp, **Maxwell, J.T.**, Soulé, P.T. A bicentennial reconstruction of tropical cyclone rainfall variability derived from longleaf pine (*Pinus palustris* Mill.). *Annual Meeting of the Association of American Geographers*, San Francisco, CA. (Poster)
- Dec. 2015 K. Yi, **Maxwell, J.T.**, Wenzel, M.K., Gray, A., Roman, D., and Novick, K.A. Species-specific intrinsic water use efficiency and its mediation of carbon assimilation during the drought. *American Geophysical Union Annual Meeting*, San Francisco, California.
- Dec. 2015 R.S. Maxwell, Harley, G.L., **Maxwell, J.T.**, Rayback, S., Pederson, N., Cook, E.R. Barclay, D., Li, W., Rayburn, J. Reconstructing streamflow in the eastern United States: validity, drivers, and challenges. *American Geophysical Union Annual Meeting*, San Francisco, California. (Poster)
- Apr. 2015 T.J. Matheus, **Maxwell, J.T.** A Tree-Ring Reconstruction of Droughts and Inter-Regional Comparisons of Teleconnections in the Midwest, USA. *Annual Meeting of the Association of American Geographers*, Chicago, IL.
- Apr. 2015 **J.T. Maxwell**. Preliminary findings for annual growth rings in tropical mangrove species from Bangladesh and Florida, USA. *Annual Meeting of the Association of American Geographers*, Chicago, IL.
- Apr. 2015 K.R. Schmidt, **Maxwell, J.T.** Projecting Future Water Availability in the Great Lakes Megalopolis: Reconstructing Lake Michigan-Huron Lake Level and Regional Hydroclimate Using Tree Rings. *Annual Meeting of the Association of American Geographers*, Chicago, IL. (Poster)
- Apr. 2015 M.K. Wenzel, **Maxwell, J.T.**, Schmidt, K.R. The Legacy of 19th Century Iron Production in Central Pennsylvania: Soil Acidification and Trace-metal Mobilization Evidenced with Tree Rings. *Annual Meeting of the Association of American Geographers*, Chicago, IL. (Poster)
- Apr. 2015 G.L. Harley, King, J., **Maxwell, J.T.** Trans-Atlantic connections between African dust flux and tree growth. *Annual Meeting of the Association of American Geographers*, Chicago, IL.
- Apr. 2015 P.A. Knapp, **Maxwell, J.T.**, Soulé, P.T. Dendroclimatic Reconstructions of Tropical Cyclone Precipitation in North Carolina. *Annual Meeting of the Association of American Geographers*, Chicago, IL. (Poster)
- Apr. 2015 P.T. Soulé, Knapp, P.A. **Maxwell, J.T.** A Comparison of Climate-growth Responses from Old-growth Ponderosa Pine Trees Among Multiple Measures of Annual Radial Growth. *Annual Meeting of the Association of American Geographers*, Chicago, IL. (Poster)
- Dec. 2014 **J.T. Maxwell**, Harley, G.L., Pendergrass, K., Matheus, T.J. Dendroclimatic reconstruction from multiple co-occurring species from old-growth deciduous forests in Indiana, U.S.A. *American Geophysical Union Annual Meeting*, San Francisco, California. (Poster)

- Dec. 2014 D.L. Ficklin, Letsinger, S.L., Gholizadeh, H., **Maxwell, J.T.** A tool to calculate Palmer drought indices using Penman-Monteith potential evapotranspiration. *American Geophysical Union Annual Meeting*, San Francisco, California. (Poster)
- Nov. 2014 K. Pendergrass, Harley G.L., and **Maxwell, J.T.** Climate reconstructions from multiple co-occurring tree species: a case study from an old-growth deciduous forest in Indiana, U.S.A. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Athens, Georgia.
- Nov. 2014 G.L. Harley, **Maxwell, J.T.**, Maxwell, R.S., and Pederson, N.P. Flint River streamflow since 947 AD Reconstructed from tree rings. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Athens, Georgia.
- Apr. 2014 **J.T. Maxwell**, Harley, G.L., and Matheus, T.J. Dendroclimatic reconstructions from multiple co-occurring species: a case study from an old-growth deciduous forest in Indiana, USA. *Annual Meeting of the Association of American Geographers*, Tampa, FL. (Poster)
- Apr. 2014 G.L. Harley, **Maxwell, J.T.**, and Grissino-Mayer, H.D. Forest structure of sub-tropical pine rockland in relation to micro-site elevation on islands in the Florida Keys. *Annual Meeting of the Association of American Geographers*, Tampa, FL.
- Apr. 2014 P.A. Knapp and **Maxwell, J.T.** Spatio-temporal changes in comfortable weather duration in the Continental U.S.: 1950–2011. *Annual Meeting of the Association of American Geographers*, Tampa, FL. (Poster)
- Apr. 2014 H.M. Mason, Ortegren, J.T., and **Maxwell, J.T.** Dendrochronological analysis and growth-climate response of *Chamaecyparis thyoides* and *Chamaecyparis thyoides* var. *henryae* in Northwest Florida. *Annual Meeting of the Association of American Geographers*, Tampa, FL.
- Nov 2013 P.A. Knapp and **Maxwell, J.T.** Changes in Comfortable Weather Duration in the Continental U.S.: 1950–2011. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Roanoke, VA. (Poster)
- May 2013 **J.T. Maxwell**, Knapp, P.A., and Ortegren, J.T. The Influence of the Atlantic Multidecadal Oscillation on Tupelo Honey Production since AD 1800. *The Second American Dendrochronological Conference*, Tucson, AZ.
- Apr. 2013 **J.T. Maxwell**, Ortegren, J.T., Knapp, P.A., and Soulé, P.T. Tropical Cyclones and Drought Amelioration in the Gulf and Southeastern Coastal United States. *Annual Meeting of the Association of American Geographers*, Los Angeles, CA.
- Apr. 2013 P.A. Knapp, Soulé, P.T. and **Maxwell, J.T.** Growth Divergence Between Mountain Pine Beetle-Infested and Healthy Ponderosa Pine in Montana Prior to Outbreak. *Annual Meeting of the Association of American Geographers*, Los Angeles, CA. (Poster)
- Nov. 2012 J.T. Ortegren, Weatherall, A. and **Maxwell, J.T.** Subregionalization of Low Frequency Summer Drought Variability in the Southeastern U.S.A. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Ashville, NC. (Poster)
- Nov. 2012 P.A. Knapp, Soulé, P.T. and **Maxwell, J.T.** Mountain Pine Beetle Selectivity in Old-Growth Ponderosa Pine Forests: A Dendroecological Analysis between Live and

- Dead Trees in Outbreak Areas. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Ashville, NC.
- Sept. 2012 H.D. Grissino-Mayer, **Maxwell, J.T.**, Harley, G.L., Garland, N.A., Holt, D.H., Absher, C., Beale, B.J., Boehm, M.S., de Graauw, K.A., Rautio, A., and Dye, A.W. Dendrochronology Reveals the Construction History of an Early 19th Century Farm Settlement, Southwestern Virginia, U.S.A. *Upland Archaeology in the East – Archaeology and History of the Blue Ridge and Beyond: Symposium XI*, Salem, VA.
- Feb. 2012 **J.T. Maxwell**, Harley, G.L., Holt, D.H., Apsher, C., Garland, N.A., Beale, B.J., Boehm, M.S., Dye, A.W., de Graauw, K.A. Rautio, A., and Grissino-Mayer, H.D. Techniques of dendroarchaeology elucidate the construction history of an early 19th century settlement compound. *Annual Meeting of the Association of American Geographers*, New York, NY.
- Feb. 2012 J.T. Ortengren, Knapp, P.A , **Maxwell, J.T.**, Tyminski, W.P., and Soulé, P.T. Low-frequency ocean-atmospheric drivers of warm-season drought in the Southeastern U.S.A. *Annual Meeting of the Association of American Geographers*, New York, NY.
- Nov. 2011 **J.T. Maxwell**. Examining tupelo honey yield decline using *Nyssa ogeche* tree-rings. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Savannah, GA.
- Nov. 2011 D. H. Holt, **Maxwell, J.T.**, Garland, N.A., Harley, G.L., Apsher, C., Beale, B.J., Boehm, M.S., de Graauw, K.A., Rautio, A., and Grissino-Mayer, H.D. Using trees to date structures on the Anderson-Doosing Farm, Roanoke, Virginia. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Savannah, GA.
- Nov. 2011 S. Walcott, **Maxwell, J.T.**, and Tyminski, W.P. Transition in American agriculture: specialty crops with a conscience. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Savannah, GA.
- Apr. 2011 **J.T. Maxwell** and Knapp, P.A. Reconstructing honey yield from *Nyssa ogeche* tree-rings in Northwest Florida: a preliminary analysis. *Annual Meeting of the Association of American Geographers*, Seattle, WA.
- Nov. 2010 **J.T. Maxwell**. A preliminary analysis of the utility of tree-rings from *Nyssa Ogeche* to reconstruct tupelo honey yield in Northwest Florida. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Birmingham, AL. (Poster)
- Oct. 2010 W.P. Tyminski, Farrell, M.L., and **Maxwell, J.T.** A comparison of untapped and tapped sugar maple tree growth: A dendrochronological approach. *Annual Meeting of the North American Maple Syrup Council*, Stratford, Ontario, Canada. (Poster)
- Apr. 2010 **J.T. Maxwell**. An assesement of the dendrochronological utility of *Nyssa ogeche*. *Annual Meeting of the Association of American Geographers*, Wasington DC.
- Apr. 2010 J.T. Ortengren, Knapp, P.A., **Maxwell, J.T.**, and Soulé, P.T. Homogenous summer drought regions in the contiguous U.S.A., and their relative susceptibility to multi-year sustained drought events: A synoptic “safety net” protecting the Southeast and the eastern Gulf Coast? *Annual Meeting of the Association of American Geographers*, Wasington DC.

- Nov. 2009 **J.T. Maxwell**, Soulé, P.T., Knapp, P.A., Ortengren, J.T. and Sufficool, M. Drought-busting tropical cyclones in the southeastern Atlantic United States: 1950–2008. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Knoxville, TN.
- Nov. 2009 J.T. Ortengren, Knapp, P.A., **Maxwell, J.T.**, and Soulé, P.T. Homogenous summer drought regions in the contiguous U.S.A. and their relative susceptibility to multi-year sustained drought events. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Knoxville, TN.
- Mar. 2009 **J.T. Maxwell** and Soulé, P.T. How does the United States drought of 2007 compare historically? *Annual Meeting of the Association of American Geographers*, Las Vegas, NV. (Poster)
- Nov. 2008 **J.T. Maxwell**. Drought and other driving forces behind population change in rural counties in the United States. *Annual Meeting of the Southeastern Division of the Association of American Geographers*, Greensboro, NC.
- Apr. 2008 **J.T. Maxwell**. Drought in the United States during 2007: historical perspective versus media attention. *Eleventh Annual Celebration of Student Research and Creative Endeavors*, Boone, NC. (Poster)

TEACHING

Courses Taught

Indiana University

Course	# of Times	# of Students
GEOG-G109 – Weather and Climate	12	30-114
GEOG-G237 – Cartography and Geographic Information	2	28-29
‡GEOG-G307 – Biogeography: Distribution of Life	6	23-60
*GEOG-405/505 – Ecological Climatology	3	18-24
*GEOG-G440/540 – Topics in Environmental Geography: Climate and Vegetation	1	12
*GEOG-G452/552 – Tree-Ring Science	6	10-19

Winston-Salem State University

Justice 4342 – Technological Analysis (Introduction and Advanced GIS)

University of North Carolina at Greensboro

GEO 103 – Introduction to Earth Science

Lab section of GEO 106 – Geosystems Science

Lab Section of GEO 111 – Physical Geology

*Course material was developed and added to departmental course catalog.

‡ Course material was substantially revised.

Mentorship

Post-Docs

Macarena Ferriz – 2023-Current, Ph.D. Forest Research Center INIA-CIFOR, Madrid Spain

Joshua Bregy – 2022-2023, Ph.D. Department of Geography, Indiana University

Doctoral Students Committee Chaired

Alihossein Ezzati – Ph.D. *In Progress*

Mahdiyeh Karvarinasab – Ph.D. *In Progress*

Benjamin Lockwood – Ph.D. 2023

Dissertation: *Ecological and Climatological Tree Growth Dynamics in Eastern North American Deciduous Forests*. Department of Geography, Indiana University, 126pp.

Tsun Fung Au – Ph.D. 2022

Dissertation: *Tree growth response in the context of global change*. Department of Geography, Indiana University, 156pp.

Joshua Bregy – Ph.D. 2021

Dissertation: *Reconstructing multidecadal to multicentennial variations in the tropical cyclone hydroclimate and its climatic controls in the southeastern United States*. Department of Geography, Indiana University, 190pp.

Trevis Matheus – Ph.D. 2017

Dissertation: *The importance of including new species and wood anatomy techniques in dendrochronology*. Department of Geography, Indiana University, 98pp.

Master Students Committee Chaired

Linnea Fraser – M.S. *In progress*

Samantha Wiley – M.S. 2023

Thesis: *The climate-growth variability of Quercus alba across the eastern US range*. Department of Geogrpahy, Indiana University, 41pp.

Tsun Fung Au – M.S. 2019

Thesis: *Mesophication of tree species increases impact of drought on tree growth by altering seasonality of climate response in eastern US forests*. Department of Geography, Indiana University, 53pp.

Brandon Strange – M.S. 2018

Thesis: *Comparing three approaches to reconstructing streamflow using tree rings: a case study in the Wabash River Basin in the Midwestern, US*. Department of Geography, Indiana University, 46pp.

Matthew Wenzel – M.S. 2016

Thesis: *The utility of Tsuga canadensis for dendrochemistry: A case study from central Pennsylvania, USA*. Department of Geography, Indiana University, 48pp.

Karly Schmidt – M.S. 2015

Thesis: *A 325-Year reconstruction of St. Joseph River streamflow using tree rings*. Department of Geography, Indiana University, 67pp.

Trevis Matheus M.S. 2014

Thesis: *A 332-year reconstruction of Midwest droughts from tree-rings*. Department of Geography, Indiana University, 91pp.

Undergraduate Student Honors Thesis Advisor

Laruen Sensibaugh – B.S. *In Progress*

Erin Wilde – B.S. 2016

Thesis: *Comparing climate-growth responses of urban and non-urban forests using L. tulipifera tree-rings in southern Indiana, USA*. Department of Geography, Indiana University.

Jessica Ayers – B.S. 2015

Thesis: *Climate sensitivity in annual growth of Indiana eastern hemlock trees*. Department of Geography, Indiana University.

Graduate Student Committee Member – External

Ellen Bergen – M.S. *In progress*, Department of Earth and Spatial Sciences, University of Idaho

John Tracy – Ph.D., *In progress*, Forest Resources and Conservation, University of Florida

Katherine Brings – M.S., 2022, Geography and Geological Sciences, University of Idaho

Karen Heeter – Ph.D., 2022, Geography and Geological Sciences, University of Idaho

Carlos Dobler – Ph.D. 2019, Geography, Clark University

James McGee – M.S. 2018, Geography, University of Idaho

Thomas Patterson – Ph.D. 2017, Geography, University of North Carolina at Greensboro

Thomas Patterson – M.A. 2013, Geography, University of North Carolina at Greensboro

Graduate Student Committee Member – Indiana University

Isioma Nwayor – Ph.D., *In Progress*, Geography

Sander Dunham – Ph.D., 2023, O'Neil School of Public and Environmental Affairs, Indiana University

Isioma Nwayor – M.S., 2023, Geography

Sara Johnson – M.S., 2021, Geography

Monica Morrison – Ph.D. 2021, Philosophy

Leonard Satterlee – M.S. 2019, Geography

Steve Kannenberg – Ph.D. 2018, Biology

SERVICE

Service to the Field/Discipline

Manuscript Reviewer

Agricultural and Forest Meteorology (4)

Journal of Cultural Heritage

AGU Advances

Journal of Ecology

Annals of the Association of American Geographers

Journal of Forestry Research (2)

Anthropocene

Journal of Geophysical Research: Biogeosciences (2)

Applied Economics, Atmosphere

Journal of Hydrology

BioScience	Journal of the Torrey Botanical Society (3)
Canadian Journal of Forest Research (3)	Madera y Bosques
Climatic Change (4)	Natural Areas Journal
Climate Dynamics (3)	Nature Communications (2)
Climate of the Past	npj Climate and Atmospheric Science
Communications Earth and Environment	Oecologia (2)
Dendrochronologia (7)	Paleogeography, Paleoclimatology, Paleoecology
Earth Interactions	Paleoceanography and Paleoclimatology
Ecosystems	Physical Geography (4)
Ecological Indicators	Plant Ecology and Diversity
Environmental Research Communications	PLoS ONE (2)
Environmental Research Letters (6)	Population and Environment
European Journal of Forest Research	PNAS Nexus
Forests (3)	Proceedings of the Royal Society B
Forest Ecology and Management (3)	Progress in Physical Geography
Forestry Research	Scandinavian Journal of Forest Research
Frontiers in Forests and Global Change	Science Advances (2)
Geophysical Research Letters (6)	Science of the Total Environment (4)
Global Change Biology (4)	Scientific Reports
Oxford Bibliographies	Southeastern Geographer (2)
Hydrological Sciences Journal	The Holocene
Hydrology and Earth System Sciences	Trees: Structure and Function
International Journal of Climatology (6)	Tree-Ring Research (4)
Journal of Applied Meteorology and Climatology (4)	Urban Forestry and Urban Greening
Journal of Arid Environments (2)	Urban Ecosystems
Journal of the American Water Resources Association	Water Resources Research (2)
Journal of Climate (3)	Weather and Climate Extremes
Journal of Coastal Research	

Grant Proposal Reviewer

Ad Hoc Reviewer, Czech Science Foundation, 2022

Ad Hoc Reviewer, National Science Foundation– Human-Environment and Geographical Sciences, 2020

Ad Hoc Reviewer, National Science Foundation– Hydrological Sciences, 2020, 2022

Ad Hoc Reviewer, National Science Foundation– Paleoclimate Program, 2019

Ad Hoc Reviewer, National Science Foundation – Arctic System Science Program, 2019

Ad Hoc Reviewer, National Science Foundation– Paleo Perspectives on Climate Change, 2017–2019, 2021

Ad Hoc Reviewer, Swiss National Science Foundation, 2018

Panel Member, National Oceanic and Atmospheric Administration– Climate Monitoring Program, 2018

Ad Hoc Reviewer, National Geographic Society, 2013

Ad Hoc Reviewer, National Science Foundation– Geography and Spatial Sciences Program, 2012

American Association of Geographers

Session Organizer: 2019–2021, Dendroclimatology I and II

Judge: 2017, 2019, Paper of the Year Award, Climate Specialty Group

Judge: 2014, 2017 – Student Paper Competition, Climate Specialty Group

Reviewer: 2014–2015, Student Research Grant Competition, Biogeography Specialty Group

Session Organizer: 2014–2015 – Undergraduate student poster competition session, Climate Specialty Group.

Board Member: 2013–2015, Young Scholars Director, Climate Specialty Group

American Geophysical Union

Convener: 2017, Hydrological Extremes: Drought

Judge: 2017, Outstanding Student Paper Award

Outstanding Student Paper Award Liaison: 2017, Hydrological Extremes: Drought

Southeast Asian Paleo Environments Consortium

Founding member and group leader for the tree-ring aspect of the Consortium, where we instructed students from around the world in how to conduct dendroclimatology research in 2020.

Service to the University

Program Committee Member: Bachelor of Arts in Environmental and Sustainability Studies (BAESS), 2019 –

Program Committee Member: Bachelor of Science in Environmental Science (BSES), 2013–2018

Review Panel: IU Research and Teaching Preserve Student Grant Proposal Competition, 2018

Reviewer: Provost's Award for Undergraduate Research, 2016

Service to the Department

Department Chair, 2022–

Diversity and Equity Committee (Chair), 2020–2022

Director of Undergraduate Studies, 2019–2021

Strategic Planning Committee, 2017

Department Honors, Awards, and Fellowship Committee, 2013

Departmental Hiring Committee, 2012, 2013 (Chair), 2017

Publicity Committee, 2013–2017

Salary Committee, 2013, 2018, 2022

Service to the Public

- Work with conservation groups, such as Indiana Forest Alliance and Kentucky Heartwood to determine the age of forests
- Scientific advisor for Indiana Public Television (WTIU)
- Scientific advisor for numerous interviews for IU Research Communications “Campus Insights”
- Scientific advisor to numerous news organizations, where I communicate findings from my research to the public
- Speaker for numerous local organizations, where I communicate broad information about climate science or ecology to the public
- Demonstrated what tree rings can tell us to elementary students and numerous local schools
- Lead a tree ring exercise at Science Fest at IU several times, this is open to school-aged children and their families and attracts a large crowd from the local area.