

My research focuses on weather hazard climatology, human-environment interactions, and applied dendrochronology for the extension of meteorological records.

Projects I have recently worked on include:

- Evaluating the anatomical features of white oak for evidence of past floods, as well as whitebark pine for evidence of drought, frost, and high-wind events
- Identifying extreme climate trends in Knoxville and comparing these trends to local residents' perceptions of climate change
- Surveying emergency managers about flash flood risk and community risk perception
- Assessing tropical cyclone properties using extreme value analysis and Bayesian methods

EDUCATION

Doctor of Philosophy in Geography, University of Tennessee, Knoxville (expected) **2023**

- Minor in Statistics
- Specialty fields: Climatology; Dendrochronological applications; Hazards, risk & vulnerability

Master of Science in Geography, University of Tennessee, Knoxville **2014**

- Concentration in Dendroclimatology

Bachelor of Science in Geography, Ohio University, Athens **2009**

- Emphasis in Meteorology, Minor in History

CURRENT POSITION

Graduate Teaching Associate, University of Tennessee, Knoxville **2018 – Present**

- ◇ Duties are to construct syllabus and learning objectives; create weekly lectures, in-class activities, quizzes, and exams; teach lectures for a 120+ class; hold office hours; manage graduate teaching assistants and their laboratory/grading duties.

- **Geography 131:** Intro to Weather, Climate, & Climate Change
- **Geography 333:** Climate Change & Human Response

Graduate Teaching Assistant, University of Tennessee, Knoxville **2016 – Present**

- ◇ Duties include laboratory instruction; holding office hours; grading labs and exams; and when needed, giving lectures for professor.

- **Geography 131:** Intro to Weather, Climate, & Climate Change (3 semesters)
- **Geography 132:** Landscapes & Environmental Change
- **Geography 101:** World Geography
- **Geography 331:** Natural Hazards (3 semesters)
- **Geography 333:** Climate Change & Human Response
- **Geography 411:** Introduction to Geographic Information Systems (3 semesters)
- **Geography 434:** Climatology
- **Geography 436:** Water Resources
- **GIS & Remote Sensing Labs** (2 semesters)

PAST POSITIONS

Post-Master's Research Associate, Oak Ridge National Laboratory, Geographic Information Systems & Technology (GIST) Group

2015 – 2017

- ◇ Researcher on the **Population Density Tables (PDT) project**, focused on the construction of reports that can illustrate the normal or episodic movement of persons throughout the world. Duties were to collect demographics using open-source data, such as national censuses and demographic health surveys; organize data by keeping track of newly-released census reports.

Adjunct Instructor, University of Tennessee, Chattanooga **2015 – 2016**

- ◇ Introductory courses with 40–70 students covering physical geography, atmospheric and earth sciences, and climate change. Duties included preparing syllabus and course objectives, creating and grading weekly lectures, homework, quizzes, and exams. Additionally, provided material for proposal to make physical geography course a requirement in university program.
 - **Geography 1010**: Introduction to Physical Geography (*2 semesters*)
 - **Geography 2060**: Atmosphere, Weather & Climate (*2 semesters*)

Tutor, Club Z! In-Home Tutoring **2011 – 2016**

- ◇ Tutored students from 4th grade to 12th grade level attending public and private schools. Met one-on-one with students after school and on weekends to improve on Math, Science, Social Studies, English, writing and reading skills.

Research Intern, Oak Ridge National Laboratory, GIST Group **Summer 2013**

- ◇ 10-week internship assisting with LandScan project by mapping settlements within rural regions; training program models

Undergraduate Teaching Assistant, Ohio University **Winter/Spring 2009**

- ◇ Led labs separate from lecture; helped students with and graded assignments.
 - **Geography 201**: Introduction to Weather
 - **Geography 301**: Meteorology

Weather Anchor, WOUB, Ohio University **2008 – 2009**

- ◇ Presented before a green screen during each newscast; worked on forecasting skills; explained the weather to southeast Ohio region.

FELLOWSHIPS, GRANTS, & AWARDS

2022: **AAG Council Award for Best Graduate Student Paper**, SEDAAG 2021, \$1000

2021: **John Fraser Hart Award**, Best PhD Paper, SEDAAG 2021, \$1000

2021: **Student-Faculty Research Award**, UTK, \$4990

2017–2019: **Chancellor's Fellowship**, UTK Geography Department, \$3000/year

2019: **North American Dendroecological Fieldweek Research Fellowship**, NSF, \$1500

2018: **Outstanding Teaching Assistant Award**, UTK Geography Department

2014, 2016, 2018: **Special Award for Extraordinary Service**, UTK Geography Department

2018: **Stewart K. McCroskey Memorial Grant**, UTK Geography Department, \$500

2018: **Photography/Map Competition** (*1st place*), AAG Landscape Specialty Group, \$250

2016: **Chancellor's Fellowship**, UTK Geography Department, \$5000

2014, 2015: **Student Publication Award**, UTK Geography Department

PEER-REVIEWED PUBLICATIONS

- Kelsey N. Ellis, Daniel Burow, Alyssa M. Cannistraci, **Savannah A. Collins-Key**, Heather Davis, William Goldman, Nicholas S. Grondin, & Dakotah Maguire, 2022. Relating weather trends and residence time to local climate change concerns in Knoxville, Tennessee. *Climatic Change (Under Review)*.
- Savannah A. Collins-Key**, Maegen L. Rochner, Lauren A. Stachowiak, & Elizabeth A. Schneider, 2022. Using dendroecology applications to strengthen the historic integrity of Cumberland Homesteads Tower in Crossville, Tennessee. *Tree-Ring Research (In Press)*.
- Lauren A. Stachowiak, Maegen L. Rochner, Elizabeth A. Schneider, Grant L. Harley, **Savannah A. Collins-Key**, & Hunter A. Bonawitz, 2021. Tree-Ring Based Reconstruction of Historical Fire in an Endangered Ecosystem in the Florida Keys. *Fire* 4 (4): 79.
- Savannah A. Collins-Key** & Jan Altman, 2021. Detecting tropical cyclone disturbances from climate- and oscillation-free tree-ring width chronology of wetland longleaf pine in south-central Georgia. *Global and Planetary Change* 201: 103490.
- Thomas W. Patterson, R. Stockton Maxwell, Grant L. Harley, Joshua S. Oliver, James H. Speer, **Savannah A. Collins**, Madison Downe, Benjamin Gannon, Lan Ma, Chance Raso, Cody Russell, & Aaron Teets, 2016. Climate-growth relationships of *Pinus rigida* (Mill.) at the species' northern range limit, Acadia National Park, Maine. *Northeastern Naturalist* 23 (4): 490–500.
- Lauren A. Stachowiak, Elizabeth A. Schneider, Maegen L. Rochner, & **Savannah A. Collins**, 2016. Dendrochronological dating of two historic log cabins on the Belle Meade Plantation, Davidson County, Tennessee, USA. *Vegetation History and Archaeobotany* 25 (2): 105–115.
- Lauren A. Stachowiak, Elizabeth A. Schneider, Maegen L. Rochner, **Savannah A. Collins**, Chaney P. Swiney, & Thomas G. McKenzie, 2014. Dendrochronological dating of the historic McKenzie Home, Meigs County, Tennessee, USA. *Tree-Ring Research* 70 (1): 31–39.

MANUSCRIPTS IN PREPARATION

- Savannah A. Collins-Key**, Jan Altman, & Nicholas S. Grondin, 2022. Examining intensity trends of tropical cyclones impacting the Louisiana deltaic region: An extreme value analysis approach. Preparing for submission to *Journal of Climate*.
- Savannah A. Collins-Key**, April L. Kaiser, Georg von Arx, Matthew F. Bekker, Sanjaya Bhandari, Cody L. Dems, Sara J. Germain, & William C. Wittenbraker. 2022. A dendro-anatomical approach to evaluate disturbance-induced features and mortality in whitebark pine (*Pinus albicaulis* Engelm.) in the Greater Yellowstone Ecosystem, Wyoming, USA. Preparing for submission to *International Journal of Biometeorology*.

SELECTED PRESENTATIONS & PANELS

*Indicates presenter of paper/poster

- Savannah A. Collins-Key** & Lauren A. Stachowiak, 2022. The usability of Caribbean pine for wildfire and hurricane reconstructions in the Turks & Caicos Islands. *Annual Meeting of the American Association of Geographers (AAG)*, 25 February–1 March 2022, New York, NY. Paper presentation.

Kelsey N. Ellis*, Daniel Burow, Alyssa Cannistraci, **Savannah Collins-Key**, Heather Davis, William Goldman, Nicholas Grondin, Dakotah Maguire, & Lisa Reyes Mason, 2021. Climate change and extreme weather trends: Is what you see what you believe? *UTK Geography Virtual Research Symposium (GeoSym)*, 18–19 March 2021, Knoxville, TN. Paper presentation.

Savannah A. Collins-Key 2020. "What Can We Do to Help You Be Successful?": Offering an Alternate Narrative Related to the Title IX Reporting Experience. *The National Academies of Sciences, Engineering, and Medicine (NASEM) Action Collaborative on Preventing Sexual Harassment 2020 Virtual Summit*, 19–20 October 2020. Poster presentation.

Savannah A. Collins-Key, April L. Kaiser, Georg von Arx, Matthew F. Bekker, Sanjaya Bhandari, Cody L. Dems, Sara J. Germain, & William C. Wittenbraker. 2020. A dendro-anatomical approach to evaluate disturbance-induced features and mortality in whitebark pine (*Pinus albicaulis* Engelm.) in the Greater Yellowstone Ecosystem, Wyoming, USA. *1st Tree-Ring Society (TRS) Virtual Symposium*, 29 May 2020. Paper presentation.

Savannah A. Collins-Key, Kelsey N. Ellis, & Lisa Reyes Mason, 2020. The perception of flash flood risk among emergency managers in the NWS-MRX County Warning Area. *Annual Meeting of the American Meteorological Society (AMS)*, 12–16 January 2020, Boston, MA. Paper presentation.

Savannah A. Collins-Key, 2019. Detecting flood signatures in the tree-ring record: Expanding dendrohydrological techniques and integrating paleofloods into flood risk assessments. *Annual Meeting of the American Association of Geographers (AAG)*, 3–7 April 2019, Washington, DC. Paper presentation.

Savannah A. Collins-Key, 2018. Examining intensity trends of tropical cyclones impacting the Louisiana deltaic region using extreme value theory. *Annual Meeting of the Southeastern Division of the Association of American Geographers (SEDAAG)*, 18–20 November 2018, Johnson City, TN. Paper presentation. (Also presented at the *Southeast Severe Storms Symposium XVII (SESVR)*, 22–24 March 2019, Starkville, MS, as a poster presentation.)

Savannah A. Collins-Key, 2018. Policy alternatives and community preparedness for wildfire management in the southeastern US. *Annual Meeting of the American Association of Geographers (AAG)*, 10–14 April 2018, New Orleans, LA. Paper presentation.

Savannah A. Collins-Key, 2018. Dendrochronological analysis of abrupt and inexplicable mortality in urban hackberry (*Celtis occidentalis* L.), Augusta, Georgia, USA. *UTK Geography Research Symposium (GeoSym)*, 15–16 February 2018, Knoxville, TN. Lightning talk.

Savannah A. Collins-Key, 2017. Industrialized animal agriculture: Communicating the harms of high meat consumption & the modern agricultural system on public health, food security, and the environment. *Annual Meeting of the Southeastern Division of the Association of American Geographers (SEDAAG)*, 19–21 November 2017, Starkville, MS. Poster presentation.

Panelist, 2017. "Graduate Student Health and Wellbeing: A Frank Discussion, Session III." Panel series organized by Matthew T. Kerr, *Annual Meeting of the American Association of Geographers (AAG)*, 5–9 April 2017, Boston, MA. Panel session.

Savannah A. Collins-Key, 2017. A feminist epistemological approach to climate change research. *UTK Pipeline Women in STEM Research Symposium*, 21 March 2017, Knoxville, TN. Paper presentation.

Savannah A. Collins, Marie L. Urban, Amy N. Rose, & David E. Axley, 2016. Systematizing demographics to enhance the accuracy of population density. *Annual Meeting of the American Association of Geographers (AAG)*, 29 March–2 April 2016, San Francisco, CA. Paper presentation.

- Lauren A. Stachowiak, Elizabeth A. Schneider, Maegen L. Rochner, & **Savannah A. Collins**, 2015. Dendrochronological dating of two historic log cabins on the Belle Meade plantation, Davidson County, Tennessee, USA. *Annual Meeting of the Southeastern Division of the Association of American Geographers (SEDAAG)*, 22–24 November 2015, Pensacola, FL. Paper presentation.
- Savannah A. Collins**, 2014. Detecting hurricane signals in the tree-ring growth responses of the longleaf pine in Valdosta, Georgia, USA: Preliminary results. *Annual Meeting of the American Association of Geographers (AAG)*, 8–12 April 2014, Tampa, FL. Paper presentation.
- Savannah A. Collins**, Maegen L. Rochner, Elizabeth A. Schneider, Lauren A. Stachowiak, & Chaney P. Swiney, 2013. Restoration ecology and tree-ring dating at Cumberland Homesteads Tower in Crossville, Tennessee. *Annual Meeting of the Southeastern Division of the Association of American Geographers (SEDAAG)*, 24–26 November 2013, Roanoke, VA. Poster presentation.
- Savannah A. Collins**, 2013. The influence of climate anomalies on the development, sequence and outcome of Hurricane Sandy. *Annual Meeting of the American Association of Geographers (AAG)*, 7–11 April 2013, Los Angeles, CA. Poster presentation.

OTHER ACTIVITIES AT CONFERENCES

- S.A. Collins-Key** & J. Edwards (Organizers and Chairs). Special session: Climate and Disturbance Events in Tree-Ring Records. *Annual Meeting of the American Association of Geographers (AAG)*, 25 February–1 March 2022, New York City, NY.
- S.A. Collins-Key** & A.A. Catherwood (Organizers and Chairs). Special session: Applications in Dendrochronology. *Annual Meeting of the Southeastern Division of the Association of American Geographers (SEDAAG)*, 21–22 November 2021, Florence, AL.
- L.G. Smith, **S.A. Collins-Key**, & C.S. Tucker (Organizers), C.S. Tucker (Chair). Special session: Applications in Dendrochronology. *Annual Meeting of the Southeastern Division of the Association of American Geographers (SEDAAG)*, 24–25 November 2019, Wilmington, NC.

PROFESSIONAL MEMBERSHIPS

- American Association for the Advancement of Science (**AAAS**)
- American Geophysical Union (**AGU**)
- American Meteorological Society (**AMS**)
- Association of American Geographers (**AAG**)
- Association of Fire Ecology (**AFE**)
- Association for Tree-Ring Research (**ATR**)
- Association for Women Geoscientists (**AWG**)
- Gamma Theta Upsilon Geographical Honor Society (**GTU**)
- Geological Society of America (**GSA**)
- Society of American Foresters (**SAF**)
- Southeastern Division of Association of American Geographers (**SEDAAG**)
- Tree-Ring Society (**TRS**)

LABORATORY & FIELD EXPERIENCE

Environmental Change Laboratory (<i>formerly the Laboratory of Tree-Ring Science</i>) University of Tennessee ◇ Assist with lab projects; travel with lab to research sites; process samples; present projects at conferences; write/edit lab reports for publication	2013 – Present Knoxville, TN
Climate Lab University of Tennessee ▪ <i>Tornado Safety Project</i> , September 2018	2018 – 2020 Knoxville, TN
Scalia Laboratory , Senior Weather Forecaster Ohio University	2007 – 2009 Athens, OH

SERVICE TO UNIVERSITY & ACADEMIC COMMUNITY

Geography Graduate Student Association , UTK ◇ Vice President, 2019 – 2020 ◇ Graduate Representative to the Faculty, 2018 – 2019
Graduate Student Senate , UTK ◇ Co-chair, Equity & Diversity Committee, 2018 – 2020 ◇ Council for Diversity & Interculturalism, 2019 – 2020
Steering Committee for Biennial UTK Geography Research Symposium ◇ Former chair (<i>advising capacity</i>), 2018 – Present ◇ Chair (2016 – 2018), Co-chair (2014 – 2016), Physical geography chair (2012 – 2014)
Guest Lecturer for Geography 345: People & Environment, UTK, 2017 – Present ◇ <i>Presentation: What's Wrong with the Red Meat Industry? Communicating the Harms of High Meat Consumption and the Modern Agricultural System</i>
Manuscript Review for the following Journals: ◇ <i>Science of the Total Environment</i> ◇ <i>Urban Ecosystems</i>

RESEARCH AND TECHNICAL SKILLS

R & R Studio ◇ R Markdown, HTML, and CSS Adobe Illustrator, Photoshop, InDesign Microsoft Word, Excel, PowerPoint ArcGIS/ArcMap SPSS Keynote & Infographics Lab ROXAS (anatomical image processing)	Dendrochronology software ◇ COFECHA, WinDendro/WinCell, ARSTAN, Velmex/MeasureJ2X, CooRecorder, CDendro QuestionPro (survey creation/distribution) Mendeley ENVI PuTTY
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REFERENCES

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