

T. Andrew Joyner

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Education

- Ph.D. Geography (Minor: Disaster Science and Management), Louisiana State University (Baton Rouge, LA), 2013
Dissertation Title: Optimizing peak gust and maximum sustained wind speed estimates from midlatitude-wave cyclones
Advisor/Committee Members: Robert V. Rohli (Advisor), Melanie Gall, Carol Friedland, Barry Keim
- M.S. Geography, University of Florida (Gainesville, FL), 2010
Thesis Title: Spatio-temporal patterns of *Bacillus anthracis* ecology and anthrax outbreak epidemiology in Kazakhstan
Advisor/Committee Members: Jason K. Blackburn (Advisor), Michael Binford, Andy Tatem
- B.S. Geography, Louisiana State University (Baton Rouge, LA), *cum laude*, 2008
Honors Thesis Title: Kernel density estimation and ENSO relationships of hurricane track frequencies in the North Atlantic basin

Areas of Specialization

Geospatial Analysis
Geohazards (Hazard Mitigation)
Climatology
Biogeography & Conservation
Ecological Modeling
Environmental Change

Applied Physical Geography
Medical Geography (Climate/Health)
Spatial Epidemiology
Open Source Mapping/Modeling
Spatial Statistics
Water Quality

Research Experience and Appointments

Assistant/Associate Professor, 2013-present
Geoinformatics and Disaster Science (GADS) Lab Director, 2016-present
GIS Certificate Graduate Coordinator, 2017-present
Department of Geosciences - East Tennessee State University

I am an assistant professor with research and teaching foci in various forms of applied physical geography, climatology/biogeography, and geospatial analysis. I am the Graduate Coordinator for the GIS Certificate program and a member of the geospatial curriculum committee within the Department of Geosciences, which is continuing to build a vibrant and effectual undergraduate and graduate Geospatial program. I teach multiple classes (e.g., Niche Modeling, Spatial Statistics, Cartography & GIS, GIS Projects, Advanced GIS, and Hazard Mapping & Modeling), conduct research on a variety of physical geography and geospatial topics, and advise undergraduate and graduate students on their research. I am also the director for the Geoinformatics & Disaster Science (GADS) Lab working on a variety of hazard mitigation planning projects, and I am leading efforts to establish the Tennessee (state) Climate Office at ETSU.

**Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) Technical Advisor and Project Manager, Summer 2013
FEMA/GOHSEP - Baton Rouge, Louisiana**

Provided project management and coordination in the development of the Louisiana State Hazard Mitigation Plan (SHMP). I led a team consisting of a technical writer, building/site assessor, GIS analyst/map-maker, and multiple reviewers, that developed the Hazard Profiles and Risk Assessment portions of the SHMP. This version of the SHMP overhauled the Hazard Profile and Risk Assessment sections of the previous plan with completely new maps, models, and descriptions as well as new additions including the use of the Keetch-Byram Drought Index (KBDI), global storm surge database (SurgeDat), and climate change implications for various hazards. I was the second author for this 1-year \$200,000 FEMA mitigation plan grant. Weblink: <http://www.getagameplan.org/mitigateplanupdate.htm>

**Graduate Research Assistant, 2010-2013
Disaster Science and Management Center (DSMC) – Louisiana State University**

Identified previous hazards that impacted the Louisiana State University System Campuses and prepared a risk assessment profile to be used for economic loss modeling as part of the LSU Multi-Hazard Mitigation Plan for a Disaster Resistant University. My primary responsibilities were GIS data creation/management, economic loss modeling, and map production. Tasks included map development for all major hazards as they relate to each of the main LSU units, database development and management, economic loss modeling integration (through HAZUS 2.0 and CDMS), and event frequency estimations (recurrence rates for damage-inducing events). I was the third author for this 3-year, \$680,000 FEMA mitigation plan grant.

**Austria Marshall Plan Fellow, Summer 2012
Carinthia University of Applied Sciences, Villach, Austria**

Improved surface wind estimates by modeling multiple European wind storms using a cokriging methodology and novel covariates. Also coordinated with the Austrian Forestry Service to identify areas of high damage-high wind overlap in the Alps regions of Austria associated with wind storm Paula. Presented initial results at a conference in Salzburg, Austria.

**Research Assistant, Summer 2011
ImageCat, Inc., Guy Carpenter Reinsurance, Department of Construction Management and Industrial Engineering – Louisiana State University**

Developed and implemented a methodology for mapping disjunctly sampled wind speed data for 18 major European wind storms (1976-2010). Project resulted in two maps per storm illustrating peak gust and maximum sustained wind speeds (deliverables to Guy Carpenter), associated raster and vector datasets for all storms (deliverables to ImageCat, Inc.), metadata and schema, and technical report (white paper).

**Graduate Research Assistant, 2008 - 2010
Spatial Epidemiology and Ecology Research (SEER) Lab – California State University, Fullerton and University of Florida**

Collaborated on numerous projects in Kazakhstan and other former Soviet states pertaining to multiple diseases and potential disease reservoirs/vectors. Developed training materials and conducted several GIS and ecological niche modeling training seminars in Kazakhstan and Rhode Island. Presented research at two conferences and served as a guest lecturer for a physical geography class on hurricanes. One manuscript was published and a related project is ongoing.

**Student Research Assistant, 2007-2008
Southern Regional Climate Center (SRCC) – Louisiana State University**

Conducted research on hurricane patterns, atmospheric teleconnections, and their correlations as well as cartographic and statistical techniques relating to hurricanes and teleconnections. One manuscript was published. Additionally, maps were produced of the Middle East and North Africa in the 6th Edition of Government and Politics of the Middle East and North Africa written by Mark Gasiorowski, PhD.

Field Researcher/Technician – Summer 2007

National Science Foundation (NSF) Research Experience for Undergraduates (REU) – University of Southern Maine

Conducted research on historic, current, topographic, ecological, and geologic structures on multiple islands off the coast of Maine with the use of RTK GPS units, Electronic Total Stations, and handheld Trimble GPS units. Analysis and research resulted in three published conference posters that were presented at two different conferences.

Student Research Assistant, 2004-2007

World Health Organization Collaborating Center (WHOCC) for Remote Sensing and GIS – Louisiana State University

Developed databases for West Nile Virus in Baton Rouge, LA. Entered Red Cross data for Hurricane Katrina records. Developed databases for anthrax records in Kazakhstan and assisted in a GIS training seminar in Kazakhstan. Collaborated on research of historic yellow fever outbreaks in New Orleans.

Refereed Journal Articles (*denotes student co-author)

Published/Accepted (17 "Tier One" & 3 "Tier Two" Publications while at ETSU)

Archer, J.E.*, Luffman, I., Nandi, A., **Joyner, T.A.** 2019. Florida's recycled water footprint: a geospatial analysis of distribution (2009 and 2015). *AIMS Environmental Science*, 6(1), 41-58. doi: 10.3934/environsci.2019.1.41

Rej, J.*, **Joyner, T.A.** 2018. Niche modeling for the genus *Pogona* (Agamidae: Squamata) in Australia: predicting past (late Quaternary) and future (2070) areas of suitable habitat. *PeerJ*, 6:e6128. doi: 10.7717/peerj.6128.

Archer, J.E.*, Luffman, I., **Joyner, T.A.**, Nandi, A. 2018. Identifying untapped potential: a geospatial analysis of Florida and California's 2009 recycled water production. *Journal of Water Reuse and Desalination*, jwr2018012. doi: 10.2166/wrd.2018.012.

Gilfillan, D.*, **Joyner, T.A.**, Scheuerman, P. 2018. Maxent estimation of aquatic *Escherichia coli* stream impairment. *PeerJ*, 6:e5610. doi: 10.7717/peerj.5610.

Gilfillan, D.*, Hall, K., **Joyner, T.A.**, Scheuerman, P. 2018. Canonical variable selection for source tracking models of fecal indicators. *Journal of Environmental Quality*, 47(5), 974-984.

Li, Y., Ren, T., Kinney, P.L., **Joyner, T.A.**, Zhang, W. 2018. Projecting future climate change impacts on heat-related mortality in large urban areas in China. *Environmental Research*, 163, 171-185. doi: 10.1016/j.envres.2018.01.047.

Agyemang, A.B.A.*, Nandi, A., Luffman, I., **Joyner, T.A.** 2018. Groundwater nitrate concentrations and its relation to landcover, Buncombe County, NC. IAEG/AEG Conference, Volume 2.

Johnson, C.D.*, Nandi, A., **Joyner, T.A.**, Luffman, I. 2018. Iron and manganese in groundwater: using kriging and GIS to locate high concentrations in Buncombe County, North Carolina. *Groundwater*, 56(1), 87-95. doi: 10.1111/gwat.12560.

Jurestovsky, D.*, **Joyner, T.A.** 2018. Applications of species distribution modeling for palaeontological fossil detection: late Pleistocene models of *Saiga* (Artiodactyla: Bovidae, *Saiga tatarica*). *Palaeobiodiversity and Palaeoenvironments*, 98(2), 277-285. doi: 10.1007/s12549-017-0298-8.

Obenauer, J.F.*, **Joyner, T.A.**, Harris, J.B. 2017. The importance of human population characteristics in modeling *Aedes aegypti* distributions and assessing risk of mosquito-borne infectious diseases. *Tropical Medicine and Health*, 45(38). doi: 10.1186/s41182-017-0078-1.

Friedland, C.J., **Joyner, T.A.**, Massarra, C.*, Rohli, R.V., Treviño, A., Gosh, S., Huyck, C., Weatherhead, M. 2017. Isotropic and anisotropic kriging approaches for interpolating surface-level wind speeds across large, geographically diverse regions. *Geomatics, Natural Hazards and Risk*, 8(2), 207-224. doi: 10.1080/19475705.2016.1185749.

La Peyre, M.K., Serra, K.*, **Joyner, T.A.**, Humphries, A. 2015. Assessing shoreline exposure and oyster habitat suitability maximizes potential success for sustainable shoreline protection using restored oyster reefs. *PeerJ*, 3:e1317. doi:10.7717/peerj.1317.

Joyner, T.A., Friedland, C.J., Rohli, R.V., Treviño, A.M., Massarra, C.*, Paulus, G. 2015. Cross correlation modeling of European windstorms: a cokriging approach for optimizing surface wind estimates. *Spatial Statistics*, 13, 62-75. doi: 10.1016/j.spasta.2015.05.003.

Harris, J.B.*, Gregg, C.E., **Joyner, T.A.**, Luffman, I. 2015. Preparing a small town for a hazardous materials incident: an examination of evacuation routing algorithms and plume models. *International Journal of Geospatial and Environmental Research*, 2(1), Article 5 (Special Issue on Geospatial Analysis of Disasters and Hazards).

Jia, P., **Joyner, T.A.** 2015. Brucellosis occurrences in Inner Mongolia, China: A spatio-temporal distribution and ecological niche modeling approach. *BMC Infectious Diseases*, 15, 36 (1-16). doi: 10.1186/s12879-015-0763-9.

Rohli, R.V., **Joyner, T.A.**, Reynolds, S.J., Shaw, C., Vazquez, J.R. 2015. Globally extended Köppen-Geiger climate classification and temporal shifts in terrestrial climatic types. *Physical Geography*, 36(2), 142-157. doi: 10.1080/02723646.2015.1016382.

Rohli, R.V., **Joyner, T.A.**, Reynolds, S.J., Ballinger, T.J. 2015. Overlap of global Köppen-Geiger climates, biomes, and soil orders. *Physical Geography*, 36(2), 158-175. doi: 10.1080/02723646.2015.1016384.

Böckmann, M.*, **Joyner, T.A.** 2014. Old risks in new places? - an ecological niche model for *Ixodes ricinus* tick distribution in Europe under a changing climate. *Health and Place*, 30, 70-77.

Joyner, T.A., Orgera, R. 2014. Climate change hazard mitigation and disaster policy in southeast Louisiana: planning and preparing for a "slow disaster." *Risk, Hazards, and Crises in Public Policy*, 4(3), 198-214.

Jia, P., **Joyner, T.A.**, Sun, Y. 2014. Short-term associations between accumulated rainfall and atmospheric moisture during landfall of three Atlantic hurricanes. *The Geographical Bulletin*, 55: 49-62. doi: 10.1007/s10661-012-2803-x.

Joyner, T.A., Rohli, R.V. 2013. Atmospheric influences on water quality: a simulation of nutrient loading for the Pearl River Basin, USA. *Environmental Monitoring & Assessment*. 185(4), 3467-3476. doi: 10.1007/s10661-012-2803-x.

Joyner, T.A., Lukhnova, L., Pazilov, Y., Temiralyeva, G., Hugh-Jones, M.E., Akimbayev, A., Blackburn, J.K. 2010. Modeling *Bacillus anthracis* under multiple climate change scenarios in Kazakhstan. *PLoS ONE*, 5(3), e9596. doi: 10.1371/journal.pone.0009596

Joyner, T.A., Rohli, R.V. 2010. Kernel density estimation of tropical cyclone frequencies in the North Atlantic basin. *International Journal of Geosciences*, 1(3), 121-129. doi: 10.4236/ijg.2010.13016

In Review

Harris, J.B.*, **Joyner, T.A.**, Rohli, R.V., Friedland, C.J., Tollefson, W.C. (Submitted to *Journal of Applied Geography*). It's all downhill from here: a forecast of subsidence rates in the Lower Mississippi River Industrial Corridor.

Harris, J.B.*, Bartlett, G., **Joyner, T.A.**, Hart, M., Tollefson, W. (Submitted to *Journal of Homeland Security and Emergency Management*). Modification of the priority risk index: adapting to Emergency Management Accreditation Program standards for institutes of higher learning hazard mitigation plans.

Delucia, A.J., Li, Y., **Joyner, T.A.**, Tucker, W.D., Taylor, L.K. (Submitted to *Local Environment*). An interrelated use of BenMAP and the World Health Organization/Europe Health Economic Assessment Tool (HEAT) for built environment improvements.

Das, R., Nandi, A., **Joyner, T.A.**, Luffman, I. (Submitted to *International Journal of Applied Geospatial Research*). Application of GIS based knowledge-driven and data-driven method for debris-slide susceptibility mapping.

Peers, J.B., Lindell, M.K., Gregg, C.E., Johnston, D.M., Reeves, A.K., **Joyner, T.A.** (Submitted to *Risk Analysis*). Multi-hazard perceptions at Long Valley Caldera, California.

Peers, J.B., Gregg, C.E., Lindell, M.K., Romero, F., **Joyner, T.A.** (Submitted to *Risk Analysis*). The effects of volcanic alert levels, volcanic crises and volcanic eruptions on housing prices and business patterns.

In Preparation

Jones, S., Poole, A.*, **Joyner, T.A.**, Böckmann, M. Species data and vector modeling: a new ecological niche model for *Ixodes ricinus* tick distribution in Europe under a changing climate. For submission to *International Journal of Environmental Research and Public Health*.

Bright, C.F., Foster, K., **Joyner, T.A.** A socio-demographic analysis of Tennessee historic markers, 1988-2018. For submission to *Journal of Sustainable Tourism* (special issue).

Quinn, R.*, **Joyner, T.A.**, Gomez, G.A. Micro-niche modeling of the rare Green Salamander in Bays Mountain Park, Kingsport, Tennessee, USA. For submission to *Southeastern Naturalist*.

Joyner, T.A., Rohli, R.V., Friedland, C.J., Treviño, A.M., Paulus, G. The influence of scale on kriging and cokriging: a comparison of wind speed interpolations in Austria. For submission to *Cartography and Geographic Information Science*.

Roark, S.*, **Joyner, T.A.**, Ernenwein, E., Luffman, I., and Schubert, B. Exploring the geographical distribution of niche modeling rules derived from current and future predictions of hellbender habitats. For submission to *PeerJ*.

Roark, S.*, **Joyner, T.A.**, Shao, W. Current and future potential distribution of the hellbender salamander using ecological niche modeling: planning for future conservation goals. For submission to *Southeastern Geographer*.

Lyon, L.M.*, Wallace, S.C., **Joyner, T.A.** Contributing abiotic factors in predicting the geographic

distribution of *Ailurus fulgens*; implications for habitat preferences and conservation. For submission to *Journal of Mammalogy*.

Reeves, A.*, Deegan, H.*, Harris, J.B.*, **Joyner, T.A.** Effects of subsidence and sea level rise on coastal storm surge inundation, extent, and economic loss along the United States Gulf Coast. For submission to *Journal of Coastal Research*.

Harris, J.B.*, Deegan, H.*, Reeves, A.*, **Joyner, T.A.** Evolution of Hazus-MH: applications and limitations for coastal hazard mitigation planning. For submission to *Natural Hazards Review*.

Reeves, A.*, Gregg, C., Lindell, M.K., **Joyner, T.A.** Assessing warning confidence and perceptions of forecasting during volcanic crisis and unrest at Kilauea and Mauna Loa volcanoes, Hawaii. For submission to *Bulletin of Volcanology*.

Reeves, A.*, Gregg, C., Lindell, M.K., **Joyner, T.A.** Resident perceptions of lava flow hazard diversion strategies and protective measures on Kilauea and Mauna Loa volcanoes, Hawaii. For submission to *Bulletin of Volcanology*.

Joyner, T.A., Friedland, C.J., Gilliland, J., Mecholsky, K., Rohli, R.V., English, N. Developing a risk assessment for a hazard mitigation plan: lessons from Louisiana. For submission to *Natural Hazards Review*.

Reviewed Reports, Books, & Products (*denotes student co-author)

(2 "Tier One" & 12 "Tier Two" Products while at ETSU)

Joyner, T.A., Harris, J.B.*, Tollefson, W.C., Worley, P.A. East Tennessee State University Hazard Mitigation Plan, pp. 255. Approved by Tennessee Emergency Management Agency (TEMA) (September 2018) and Federal Emergency Management Agency (FEMA) Region 4 (December 2018). Approved by ETSU President (July 2019).

Harris, J.B.*, Tollefson, W.C., **Joyner, T.A.** Tufts University Hazard Mitigation Plan, pp. 514. Approved by Tufts University (August 2017), Massachusetts Emergency Management Agency (MEMA) (June 2018), and Federal Emergency Management Agency (FEMA) Region 1 (August 2018).

Friedland, C.J., Gall, M., **Joyner, T.A.**, Rohli, R.V., Mecholsky, K.M., Heil, S., Mandhana, A., Taghinezhad, A.*, Ates, S.*, Wood, M., Downs, J. Executive Summary: Economic Value of Mitigation Spending in Louisiana, pp. 22, (July 2018).

Friedland, C.J., Gall, M., **Joyner, T.A.**, Rohli, R.V., Mecholsky, K.M., Heil, S., Mandhana, A., Taghinezhad, A.*, Ates, S.*, Wood, M., Downs, J. Economic Value of Mitigation Spending in Louisiana, (July 2018).

Joyner, T.A. Economic Value of Mitigation Spending in Louisiana: Geospatial Hazard Profiles of Five Major Events Impacting Louisiana and Three Probabilistic Events, pp. 38.

Harris, J.B.*, **Joyner, T.A.**, Ogden, M.*, Tollefson, W.C., Headrick, J.* ETSU GIS OpenData Hub. <http://data-etsu.opendata.arcgis.com> (released to public in July 2018).

Harris, J.B.*, Tollefson, W.C., **Joyner, T.A.**, Worley, P.A. Threat and Hazard Identification Risk Assessment (THIRA), pp. 38. Approved by East Tennessee State University (March 2018).

Harris, J.B.*, Tollefson, W.C., **Joyner, T.A.**, Bartlett, G., Hart, M. Threat and Hazard Identification Risk Assessment (THIRA), pp. 37. Approved by Tufts University (January 2018).

Selected Readings in Applied Climatology. 2015. Edited by Robert V. Rohli and **T. Andrew Joyner**. Cambridge Scholars Publishing, pp. 351.

Joyner, T.A. Overview of Atmospheric Circulation Variability and Applied Climatology (Chapter 2: Selected Readings in Applied Climatology). Cambridge Scholars Publishing (Fall 2015).

Joyner, T.A. Overview of the Biosphere and Applied Climatology (Chapter 10: Selected Readings in Applied Climatology). Cambridge Scholars Publishing (Fall 2015).

Joyner, T.A. Overview of Climate and Human Health, Comfort, and Behavior (Chapter 25: Selected Readings in Applied Climatology). Cambridge Scholars Publishing (Fall 2015).

Friedland, C.J., **Joyner, T.A.**, Mecholsky, K.M., Rohli, R.V., Gilliland, J., Madani, S.A., Ogea, S., Carter, L.M., Jones, R. (FEMA approval: March 2014). State of Louisiana Hazard Mitigation Plan: 2014 Update, pp. 640

Gall, M., Friedland, C.J., **Joyner, T.A.**, Orgera, R., Fu, C.*, Ogea, S. (FEMA approval: February 2014). Louisiana State University System Disaster Resistant University Multi-Hazard Mitigation Plan, pp. 1014.

Maps produced for Louisiana Cultural Regions. 2013. LSU Press. Written by Ryan Orgera.

Joyner, T.A., Rohli, R.V., Friedland, C.J., Treviño, A.M., Paulus, G. Optimizing peak gust and maximums sustained wind speed estimates for European wind storms impacting Austria. Marshall Plan Scholarship Paper (2012).

Joyner, T.A., Treviño, A.M., Friedland, C.J., Gosh, S., Huyck, C., Weatherhead, M. Interpolating peak gust and maximum sustained wind speeds from European storms. Technical Report (White Paper) for Guy Carpenter Reinsurance Company (August 2011).

Maps produced for Government and Politics of the Middle East and North Africa, Sixth Edition. 2010. Westview Press. Written by Mark J. Gasiorowski and edited with David Long and Bernard Reich.

Curtis, A., **Joyner, T.A.**, Blackburn, J.K., Anderson, J. 2006. The Yellow Fever Epidemic of New Orleans, 1878: A Cartographic Animation.

Grants (Awarded & Submitted)

Funded (6 "Tier One" & 7 "Tier Two" grants and 1 travel grant awarded while at ETSU; Total Tier One: \$1,031,500; Total Tier Two: \$44,932)

- ETSU Sustainability (Green) Fee Proposal (Spring 2019)
 - o Sustainability on the ETSU campus: utilizing UAV technology and imagery processing to quantify carbon offset potential of university-owned woodlands
 - o PI; One year; \$2630
- ETSU RDC Small Grant (Fall 2018)

- o Impacts of Heat Waves on Mortality Outcomes in Central and South Central Appalachia
 - o Co-PI; One year; \$2,000
- Hazard Mitigation Grant Program (HMGP) via FEMA, TEMA, and Sevier County (TN) (Spring 2018)
 - o Sevier County Multi-Jurisdictional Hazard Mitigation Plan
 - o PI; Two years; \$135,000 [*2018 is Year One*]
- ETSU Instructional Development Grant (Spring 2018)
 - o Teaching in a Sandbox: Using Augmented Realty to Promote Geospatial Education and Careers
 - o PI; One year; \$1900
- ETSU Sustainability (Green) Fee Proposal (Fall 2017)
 - o Sustainability on the ETSU campus: developing a public web and mobile mapping interface to increase access and visibility of sustainable projects and infrastructure
 - o PI; One year; \$2200
- ETSU Technology Access Fee Grant (Fall 2017)
 - o TAF Proposal for ESRI ArcGIS License
 - o Co-applicant; One year; \$12,750
- Tufts University (Boston) Multi-Campus Hazard Mitigation Plan (Spring 2017)
 - o PI; One year; \$53,000
- ETSU Technology Access Fee Grant (Fall 2016)
 - o TAF Proposal for ESRI ArcGIS License
 - o Co-applicant; One year; \$13,500
- ETSU RDC Major Grant (Spring 2016)
 - o Developing a Hazard Mitigation Center at ETSU
 - o PI; One year; \$9,952
- Pre-Disaster Mitigation (PDM) Grant Program via FEMA (Fall 2015)
 - o ETSU Hazard Mitigation Plan
 - o PI; Three years; \$175,000 [*Fall 2016 is Year One*]
- Pre-Disaster Mitigation (PDM) Grant Program via FEMA (Spring 2015)
 - o Assessing Mitigation Strategies Success in Louisiana
 - o ETSU Site-PI; Two years; \$53,000 (ETSU total); \$650,000 (grant total between LSU, ETSU, & USC) [*2015-2016 is Year One*]
- Hazard SEES Program via NSF (Fall 2015)
 - o ETSU Site Co-PI (Chris Gregg PI); Three years; \$603,000 (ETSU total); \$2,800,000 (grant total between ETSU, SUNY-Buffalo, and U. of Hawaii) [*grant ported from University of Hawaii to ETSU*]
- Leibniz Institute for Prevention Research and Epidemiology (Bremen, Germany) External Expert Action 7 International Travel Award
 - o Summer 2015 Travel Award (1 week); €2,500
- Hazard Mitigation and Grant Program (HMGP) via FEMA (Spring 2014)
 - o ETSU Site-PI (GIS Specialist); 3 months; \$12,500
- Marshall Plan Foundation Program Scholarship at the Carinthia University of Applied Sciences - Austria
 - o Summer 2012 Fellowship (3-months); €6,000
- National Science Foundation Research Experience for Undergraduates – University of Southern Maine
 - o 8-weeks (May-July 2007); \$3,000 stipend + room/board, supplies

Pending (6 "Tier One" & 1 "Tier Two")

- National Institutes of Health (NIH) R03 (Small Grant) Program (Summer 2019)
 - o Projecting Impacts of Global Climate Change on Respiratory Mortality and Morbidity in 2050s in Central Appalachia
 - o Co-I; One year; \$50,000

- Campbell County (TN) Hazard Mitigation Plan (Summer 2019)
 - PI; One year; \$47,000
- NOAA COMET Partners (Spring 2019)
 - Predicting flood-related vulnerabilities on Beaver Creek, Bristol TN
 - Co-I; One year; \$14,858
- University of Massachusetts-Amherst RFP AA19-JY-6096 (Spring 2019)
 - UMass-Amherst Campus Resiliency Plan
 - PI; One year; \$49,795
- American Lung Association (Fall 2018)
 - Projecting economic impacts of heat-related respiratory mortality and morbidity in 2050s in Central Appalachia
 - Co-I; One year; \$49,994
- National Institutes of Health (NIH) R21 (Exploratory/Development Research) Program (Summer 2018)
 - A pilot study of the relationship between the built environment and metabolic syndrome in an at risk pediatric population of south central Appalachia
 - Co-I; Two years; \$275,000
- Mountain Home Veterans Affairs Open Proposal (Spring 2017)
 - Development of a GIS Database for Campus Infrastructure
 - PI; One year; \$30,000

Applied For (10 "Tier One" & 6 "Tier Two" + 1 pre-proposal & 1 senior personnel while at ETSU)

- Puerto Rico Planning Board & FEMA (Fall 2018)
 - Puerto Rico: Local Hazard Mitigation Plan Updates
 - PI; Three years; \$2.3 million
- New York University THIRA Proposal (Fall 2018)
 - Threat and Hazard Identification and Risk Assessment for New York University
 - PI; One year; \$51,463
- ETSU RDC Major Grant (Spring 2018): Geographic variations in cancer incidence in southern Appalachia
 - Co-PI; One year; \$9,980
- National Institutes of Health (NIH) R21 (Exploratory/Development Research) Program (Spring 2017)
 - Food and physical activity environments and pediatric metabolic syndrome: moderating effects of age and ethnicity
 - Co-I; Two years; \$407,000
- National Science Foundation (NSF) CAREER Grant (Summer 2017)
 - Wind-Dat: the development of a global mid-latitude cyclone surface windspeed database
 - PI; Five years; \$577,000
- NOAA Climate and Societal Interactions Sectoral Applications Research Program (SARP) LOI (Summer 2017)
 - Flood mitigation and geospatial analysis in rural Appalachia
 - PI; One year; \$175,000
- National Science Foundation (NSF) Doctoral Dissertation Research Improvement Grant (Spring 2017)
 - Biogeography of *Escherichia coli* in sediments revealed through metabolic fingerprints and spatial modeling
 - Co-I; One year; \$16,000
- ETSU RDC Interdisciplinary Grant (Spring 2017)
 - The impacts of climate change on heat-related morbidity and mortality in Southern Central Appalachia
 - Co-I; One year; \$50,000
- ETSU Sustainability (Green) Fee Proposal (Spring 2017)

- o Sustainability on the ETSU campus: developing a public web and mobile mapping interface to increase access and visibility of sustainable projects and infrastructure
- o PI; One year; \$9600
- Carter County Hazard Mitigation Plan (Fall 2016)
 - o PI; Two years; \$63,000
- Polk County, TX Hazard Mitigation Plan (Fall 2016)
 - o PI; Six months; \$54,000
- Northern Neck, VA Hazard Mitigation Plan (Fall 2016)
 - o PI; Six months; \$55,000
- Huerfano County, CO Hazard Mitigation Plan (Fall 2016)
 - o PI; Six months; \$59,000
- National Institutes of Health (NIH) R03 (Small Grant) Program (Summer 2016)
 - o Built Environment and Metabolic Syndrome in Hispanic and non-Hispanic Children
 - o Co-I; Two years; \$148,000
- ETSU RDC Interdisciplinary Grant (Spring 2015)
 - o PI; One year; \$49,500
- ETSU Undergraduate Summer Research Fellowship for Kayla Serra (serving as faculty sponsor)
 - o Summer 2015 Fellowship (3-months); \$2,995
- Environmental Protection Agency (EPA), East Tennessee Wetland Delineation (Spring 2014)
 - o Senior Personnel; Three years; \$540,000
- ETSU RDC Major Grant (Spring 2014)
 - o PI; One year; \$9,999
- National Science Foundation Geography and Spatial Sciences research funding program (Fall 2012)
 - o Co-investigator; Three years; \$414,144
- Louisiana Sea Grant research funding program (Spring 2011)
 - o Co-PI; Two years; \$99,000; categorized by Program Director as one of 11 top-tier proposals (of 45 submitted); full proposal solicited
- Mississippi-Alabama Sea Grant Consortium (MASGC) Coastal Storms research program (Spring 2011)
 - o Co-PI; Two years; \$98,000
- Environmental Protection Agency (EPA) Science to Achieve Results (STAR) Fellowship (Fall 2010)
 - o PI; Three years; \$126,000

Teaching Experience

Traditional Courses (Instructor of Record) (All syllabi available upon request)

GEOS 5300 (Topics): Geospatial Applications for Unmanned Aerial Systems (Fall 2019)

GEOS 5300 (Topics): Hazard Mapping and Modeling (Fall 2016, 2017)

GEOS 5300 (Topics): Ecological Niche Modeling and Mapping (Spring 2015, 2016, 2017, 2018, Fall 2018)

GEOS 5300 (Topics): Campus Mapping and Project Management (Spring 2015)

GEOG 4317/5317 (ETSU): Advanced GIS (Fall 2014, 2015, 2016, 2017, 2018, 2019)

GEOS 5320 (ETSU): GIS Projects (Spring 2014, 2016, 2017, 2018, 2019)

GEOL 3700 (ETSU): Geosciences Field Experience - Louisiana (Spring 2019)

GEOS 5700 (ETSU): Seminars: Power, Politics, & Ethics in Geosciences (3), Professional Development for Geospatial (1), History of GIS (1), Hazards Research & Disaster Science (Fall 2017), Exploring Python in GIS (Spring 2018), Web & Mobile Mapping (Fall 2018), Certified Floodplain Management (Fall 2019)

GEOG 2500 (ETSU): Intro to GIS and Cartography (Fall 2013, 2014, 2015, Spring 2014)

GEOS 5350 (ETSU): Statistics for Geosciences (Fall 2013)

DSM 2000 (LSU): Disaster Science Management - Disasters, Hazards, and the Environment (Fall 2012, Spring 2013)

Independent Study Courses (Instructor of Record)

Python Scripting for Geospatial Analysis (2 hours) (Fall 2019)

Python Scripting for Geospatial Analysis (3 hours) (Spring 2019)

Ecological Niche Modeling & Mapping (3 hours) (Spring 2019)

Advanced Python Scripting for Geospatial Analysis (Spring 2019)

Python Scripting for Geospatial Analysis (3 hours) (Fall 2018)

Health-Health Vulnerability Analysis (3 hours) (Fall 2018)

Methods in Design Flood Estimation (3 hours) (Fall 2018)

GIS Application Development (3 hours) (Fall 2018)

Cloud & Server GIS (3 hours) (Fall 2018)

Python Programming & Software Development in GIS (3 hours) (Fall 2018)

Augmented Realty Sandbox Development (1 hour) (Fall 2018)

Geospatial Application of Drone Technology (3 hours) (Fall 2018)

Ecological Niche Modeling & Mapping (3 hours) (Fall 2018)

Python Scripting for Geospatial Analysis (3 hours) (Spring 2018)

3-D Interior Space Modeling (3 hours) (Spring 2018)

Hazus Sea Level Rise Modeling (3 hours) (Spring 2018)

Habitat Modeling Research Development (3 hours) (Spring 2018)

Ecological Niche Modeling & Mapping (3 hours) (Spring 2018)

GIS Projects (3 hours) (Spring 2018)

Open Source GIS (2 hours) (Spring 2018)

Service Climatology (1 hour) (Fall 2017)

Emergency Evacuation Modeling (2 hours) (Fall 2017)

Open Source GIS (3 hours) (Fall 2017)

Sea Level Rise & Economic Loss Modeling (3 hours) (Fall 2017)

Ecological Niche Modeling (3 hours) (Spring 2017)

GIS Projects (3 hours) (Spring 2017)

Hazard Mitigation Planning (3 hours) (Spring 2017)

Texas Antelope Squirrel Model Development (3 hours) (Spring 2017)

Python & R-code Development (3 hours) (Spring 2017)

Hazard Mapping & Modeling (3 hours) (Fall 2016)

Webmapping & Server GIS (3 hours) (Fall 2016)

GIS Programming & Automation (3 hours) (Fall 2016)

Advanced Habitat Modeling (3 hours) (Fall 2016)

Hazard Mitigation Planning (3 hours) (Fall 2016)

Network Analysis & Applied GIS (3 hours) (Spring 2016)

GIS Routing & Animated Mapping (3 hours) (Spring 2016)

GIS & Planning I & II (3 hours) (Fall 2015)

UAV Mapping & Videography (3 hours) (Fall 2015)

Volcanoes in Human History (1 hour) (Fall 2015)

Public Health Data Processing (3 hours) (Fall 2015)

Healthcare Geospatial Service Area Analysis (3 hours) (Fall 2015)

Peccary Habitat Modeling (2 hours) (Fall 2015)

Geospatial Hazards & Social Media (3 hours) (Fall 2015)

Hydrological Modeling and Watershed Analysis (3 hours) (Spring 2015)

University-based Enterprise GIS (3 hours) (Spring 2015)

Ecological Niche Modeling and Mapping (3 hours) (Spring 2015)

Conservation GIS (3 hours) (Spring 2015)

GIS Applications in Biogeography (1 hour) (Spring 2015)

GIS in Public Health (3 hours) (Spring 2015)

Extreme Events and Hazard Modeling (3 hours) (Spring 2015)

Oyster Reef Ecology and Coastal Restoration using Geospatial Analysis (3 hours) (Fall 2014)

Hazard Modeling and Hazus Certification (3 hours) (Fall 2014)

Applied Spatial Statistics and Geospatial Analysis (3 hours) (Fall 2014)

Interactive and Story Mapping with GIS (3 hours) (Fall 2014)

CAD/GIS Interoperability and Campus Mapping (3 hours) (Fall 2014)

Habitat and Ecological Niche Modeling (3 hours) (Fall 2014)

GIS Project Management (3 hours) (Spring 2014)

Interactive and Dynamic Mapping with GIS (3 hours) (Summer 2014)

Workshops/Training Seminars/Teaching Assistants

GEOG 2050 (LSU): Physical Geography - The Atmosphere - Teaching Assistant (Spring 2013)

Spatial Statistics and Ecological Niche Modeling - Almaty, Kazakhstan (November 2009)

Ecological niche modeling for predicting disease distributions: designing experiments and interpreting results - Workshop at URISA GIS in Public Health Conference - Providence, Rhode Island (June 2009)

GEO 530T - Teaching assistant for ecological niche and species distribution modeling labs – California State University, Fullerton (Spring 2009)

GEO 101 - Guest lectures on hurricanes and teleconnections - California State University, Fullerton (December 2008)

Database Management & Statistical Analysis - Almaty, Kazakhstan (September 2008)

ArcToolbox and Spatial Analyst - Almaty, Kazakhstan (July 2008)

Basic GIS Analysis and Cartography - Almaty, Kazakhstan (June 2008)

Intro to GIS using ArcMap and ArcCatalog - Almaty, Kazakhstan (June 2006)

Conferences/Presentations (**denotes student co-author*)

Professional Presentations

- Association of American Geographers (AAG) Conferences

2019 (Washington DC): Presentation

- Co-presenter: Species distribution modeling and sustainable agroforestry: climate change mitigation for Guatemalan coffee (Mosher*, Ayala*, Bledsoe*, Ogden*, **Joyner**, Luffman)

2018 (New Orleans): Presentations

- Co-presenter: Site analysis and implementation of the Tennessee state mesonet (Reasons*, Cornett*, Singer*, **Joyner**, Tollefson)
- Co-presenter: Modification of the priority risk index: adapting to Emergency Management Accreditation Program standards for institutes of higher learning hazard mitigation plans (Harris*, Bartlett, **Joyner**, Hart, Tollefson)
- Co-presenter: Modeling climate effects on Tennessee sinkholes with logistic regression and MaxEnt species distribution modeling (Blizzard*, Luffman, **Joyner**)

2017 (Boston): Presentations

- Co-presenter: Spatial analysis of crime in five New York Boroughs before and after Hurricane Sandy: is there calm after the storm? (Jones*, **Joyner**)
- Co-presenter: GIS in hazard mitigation planning: the synergistic intersection of interdisciplinary research (Tollefson, **Joyner**, Harris*, Archer*, Deegan*, Jones*, Rose*, O'Brien, Worley)
- Co-presenter: Including human population characteristics in ecological niche models for *Aedes aegypti* when modeling projected disease risk due to climate change (Obenauer*, Quinn, Li, **Joyner**)
- Co-presenter: Predicting the current range of *Ailurus fulgens*: habitat preferences and conservation implications (Lyon*, **Joyner**)
- Co-presenter: Effects of subsidence and sea level rise on coastal storm surge inundation, extent, and economic loss along the United States Gulf Coast (Reeves*, Deegan*, Harris*, **Joyner**)
- Co-presenter: Teleconnection and climate effects on Florida sinkholes: a stepwise multiple linear regression approach (Blizzard*, Luffman, **Joyner**)
- Co-presenter: Comparison of inverse distance weighted interpolation and kriging methods in estimating subsidence rates in the Lower Mississippi River industrial corridor (Harris*, **Joyner**, Rohli)

2016 (San Francisco): Presentations

- Co-presenter: Using unmanned aircraft systems (UAS) for project-based teaching and community-wide geospatial services: an overview of the impact of drone technology at East Tennessee State University (Tollefson, **Joyner**, Ernenwein, Roark*, Poole*, Staton*, Vernon*) 3/30/2016
- Co-presenter: Water reuse in California: identifying untapped potential (Archer*, Luffman, **Joyner**) 3/31/2016
- Co-presenter: Tornado return periods in the Southeastern United States: communicating risk and vulnerability at the regional and state levels (Bradburn*, **Joyner**, Luffman, Tollefson) 3/29/2016
- Co-presenter: Seasonal and spatial variations in the probability of pathogenic stream impairment (Gilfillan*, Scheuerman, **Joyner**) 3/30/2016
- Co-presenter: Applications of species distribution modeling for paleontological fossil detection: Late Pleistocene models of Saiga (*Artiodactyla*: Bovidae, *Saiga tatarica*) (Jurestovsky*, **Joyner**)

3/30/2016

- Co-presenter: Modeling potential hellbender salamander distribution under climate change scenarios (Roark*, **Joyner**) 3/30/2016

2015 (Chicago): Presentations

- Co-presenter: Preparing a small town for a hazardous materials incident: an examination of evacuation routing algorithms and plume models (Harris*, Gregg, **Joyner**, Luffman) 4/21/2015
- Co-presenter: Exploring the current and future potential distributions of the North American Giant Salamander using ecological niche modeling (Roark* & **Joyner**) 4/23/2015
- Co-presenter: Estimating potential economic losses and producing a risk assessment for earthquakes in Charleston, South Carolina and hurricanes in New Orleans, Louisiana: an examination of FEMA's Hazus model (Vernon* & **Joyner**) 4/23/2015
- Co-presenter: Identifying tornado hazards zones and associated intensity return periods in the Southeast USA (Bradburn* & **Joyner**) 4/23/2015

2014 (Tampa): Poster presentations

- Presenter: Developing a risk assessment for a hazard mitigation plan: lessons from Louisiana (**Joyner**, Friedland, Gililand, Mecholsky, Rohli, English)
- Co-presenter: Global shifts in climate-soil-biome types (Rohli, **Joyner**, Reynolds)

2013 (Los Angeles): Poster presentations

- Presenter: Cokriging for European wind storm surfaces: where there's a wind, there's a way (**Joyner**, Treviño, Friedland, Rohli, Paulus)
- Co-presenter: Global shifts in Köppen climate types (Rohli, **Joyner**, Reynolds)

2012 AAG (New York): Interpolating peak gust and maximum sustained wind speeds for European storms. Paper presentation for the Climate Specialty Group student paper competition. (**Joyner**, Rohli, Friedland, Treviño)

2011 AAG (Seattle): Model simulation of water quality parameters in the Pearl River basin. Poster presentation. (**Joyner** & Rohli)

2010 AAG (Washington, D.C.): Modeling the potential geographic distribution of *Bacillus anthracis* under multiple climate change scenarios for Kazakhstan. Poster presentation. (**Joyner**, ..., Blackburn)

2009 AAG (Las Vegas) Attended Meeting

2008 AAG (Boston) Paper presentations:

- Presenter: Kernel density estimation of hurricane track frequencies in the North Atlantic basin (Chair of the Climate Analysis Session) (**Joyner** & Rohli)
- Co-presenter: Computerized Databases for Field Research (Sigrist, **Joyner**, Pasay, Vanderberg)

2007 AAG (San Francisco): Co-presented two posters about anthrax in Kazakhstan and Uzbekistan

- Southeast Division of the Association of American Geographers (SEDAAG) Conferences

2018 SEDAAG (Johnson City, TN)

- Chair, Local Arrangements Committee
- Chair, Applications of Geospatial Techniques and Technologies Paper Session

- Co-presenter: Fusing advanced geospatial technologies with data-driven hazard mitigation planning: an emerging framework for developing improved risk and vulnerability assessments (Harris*, Tollefson, **Joyner**, Worley)

2017 SEDAAG (Starkville, MS)

- Presenter: Risk assessments and mapping for universities: hazard mitigation in higher education (**Joyner**, Tollefson, Harris*, Worley)
- Co-presenter: Climate effects on Tennessee sinkholes – a spatial logistic regression approach (Blizzard*, **Joyner**, Luffman)

2016 SEDAAG (Columbia, SC)

- Presenter: Climate research, education, and extension: developing a state climate office in Tennessee (**Joyner**, Tollefson, Harris*)
- Co-presenter: Hazard mitigation planning meets higher education (Harris*, **Joyner**, Tollefson, Worley)
- Co-presenter: Using Maxent to predict E. coli impairment in streams: classification performance and sensitivity analysis (Gilfillan*, **Joyner**)
- Co-presenter: Extreme rainfall climatology for the Tri-Cities region of Tennessee (Tollefson, **Joyner**, Harris*)

2015 SEDAAG (Pensacola, FL)

- Co-presenter: A spatial exploration of tornado return periods and clustering in Tennessee (Bradburn* & **Joyner**)
- Co-presenter: Data resolution impacts on Southeastern Salmonid distributions: considerations on transferability and climate change (Gilfillan* & **Joyner**)
- Co-presenter: Point pattern analysis of Nashville, TN robberies: it's all about that kernel (Luffman & **Joyner**)

2014 SEDAAG (Athens, GA) (attended w/ETSU Geosciences Display Table)

- American Association of State Climatologists (AASC) Conference

2019 AASC (Santa Rosa, CA)

- Presenter: Tennessee Climate Office state report: a wet and wild year in the Volunteer State! (**Joyner**, Tollefson)

2018 AASC (Nebraska City, NE) (attended and participated in SRCC round-table)

2017 AASC (Asheville, NC) (attended and participated in SRCC round-table)

- Appalachian Student Research Forum (ASRF) Conference

(2019):

Bledsoe, A.*, Mosher, D.*, Ogden, M.*, Ayala, M.*, **Joyner T.A.**, Luffman, I. Ecological niche modeling and sustainable agroforestry: climate change mitigation for Guatemalan coffee. Poster and Presentation (*Awarded 1st place in Graduate Student-Master's Natural Resources, Agriculture, and Environmental Sciences, poster competition*)

Mosher, D.*, **Joyner, T.A.** Interpreting paleoclimate and species distributions of Red Spruce and Fraser

Firs in the Southern Appalachians to predict impacts of climate change on forest habitats. Presentation.

Mosher, D.*, **Joyner, T.A.**, Luffman, I. Analyzing winter weather and climate trends of the ski resorts in North Carolina through the use of Community Collaborative Rain, Hail, & Snow Network (CoCoRaHS) stations. Poster.

Ogden, M.*, **Joyner, T.A.** Observing clusters and point densities in Johnson City, TN crime using nearest neighbor hierarchical clustering and kernel density estimation. Poster.

(2018):

Harris, J.B.*, **Joyner, T.A.**, Rohli, R.V. The impact of subsidence on industrial complexes in the Lower Mississippi River Industrial Corridor. (*Awarded 1st place in Doctoral Research category for Natural Science and Engineering*)

Peers, J.*, Reeves, A.*, Gregg, C., Lindell, M.K., **Joyner, T.A.** Improving volcano risk communication at the Long Valley Caldera and Mono-Inyo Craters volcanic system, eastern California, USA.

Reeves, A.*, Gregg, C., Lindell, M.K., **Joyner, T.A.**, Houghton, B. Resident stakeholder perceptions of lava flow hazard diversion strategies and protective measures for infrastructure and commercial and private property on Kīlauea and Mauna Loa volcanoes, Hawai'i.

(2017):

Obenauer, J.*, Quinn, M., Li, Y., **Joyner, T.A.** Future risk from the *Ae. aegypti* vector: modeling the effects of climate change and human population density on habitat suitability.

Harris, J.B.*, **Joyner, T.A.**, Rohli, R.V. Comparison of spatial interpolation methods in estimating subsidence rates in the Lower Mississippi River industrial corridor.

(2016):

Morrell, C.*, Poole, A.*, Quinn, M., **Joyner, T.A.**, Johnson, C.* Analysis of Tennessee population served by certified stroke centers.

(2015):

Bradburn, M.* and **Joyner, T.A.** Tornado return periods in the southeastern United States: we're not in Kansas anymore.

Morrell, C.*, Quinn, M., Johnson, C.*, and **Joyner, T.A.** Analysis of stroke geographic disparities in Tennessee.

Roark, S.*, **Joyner, T.A.**, Ernenwein, E., Luffman, I., and Schubert, B. Ecological niche modeling of the hellbender salamander using current and future environmental variables.

Robertson, C.*, **Joyner, T.A.**, and Ernenwein, E. Geospatial analysis of the relationship between food accessibility and health risk behaviors in Tennessee.

Serra, K.*, **Joyner, T.A.**, La Peyre, M., and Humphries, A. Achieving shoreline stabilization through native oyster reef restoration: geospatial analysis of climate, erosion, and habitat suitability data in Breton Sound, Louisiana.

(2014):

Johnson, C.*, Nandi, A., **Joyner, T.A.**, Luffman, I., Campbell, T., Lavery, B. Using GIS to visualize water quality contaminants present in private water wells in rural communities in western North Carolina.

Harris, J.*, Gregg, C., **Joyner, T.A.**, Luffman, I. Evacuation and shelter in place modeling for a release of uranium hexafluoride. (*Awarded 1st Place in Natural Sciences Group*)

Menzer, J.*, **Joyner, T.A.** Johnson City's nightlife: a collegiate perspective. (*Awarded 2nd Place in Society and Behavioral Sciences*)

Roark, S.*, **Joyner, T.A.** Ecological niche modelling: North American giant salamander.

- Eastern Tennessee Geographic Information Council (E-TNGIC)

2018 Annual Conference (Kingsport, TN):

- Presenter: Utilizing advanced geospatial technologies for data-driven hazard mitigation planning (**Joyner**, Tollefson, Harris, Worley)
- Co-presenter: Developing the Tennessee Climate Office: climate data services and applications (Tollefson, **Joyner**)
- Co-presenter: Effects of subsidence & sea level rise on coastal storm surge inundation, extent, & economic loss along the United States Gulf Coast (Reeves, Harris, **Joyner**)

2016 Annual Conference (Knoxville, TN)

2015 Annual Conference (Kingsport, TN): Hellbendering: current and future ecological niche modeling for the hellbender salamander. Presentation co-presenter. (Roark* & **Joyner**)

2014 Annual Conference (Knoxville, TN): CrimeStat: the little program that could (help you with point data). Presentation co-presenter. (Luffman & **Joyner**) 10/16/2014

- Northeast Tennessee GIS Users Group

2019 Winter Quarterly Meeting (Kingsport, TN)

- Presenter: Fusing advanced geospatial technologies with data-driven hazard mitigation planning at ETSU (**Joyner**, Tollefson, Harris*, Worley)

- Sevier County

2019 Hazard Mitigation Plan Stakeholders Meeting (Sevierville, TN): Defining and grouping hazards and an overview of the proposed "Risk Assessment" for the Sevier County multi-jurisdiction Hazard Mitigation Plan. Presenter. (June 2019)

2019 Hazard Mitigation Plan Mitigation Strategy Meeting & EPRI Review (Sevierville, TN): Identifying and adapting mitigation strategies for each jurisdiction. Presenter. (August 2019)

- Emergency Management Association of Tennessee (EMAT) Conference

2018 EMAT (Chattanooga, TN)

- Presenter: Emerging technology to improve hazard mitigation planning (Worley, **Joyner**, Harris*)

- Southeastern Association Vertebrate Paleontology (SeAVP) Conference

2017 SeAVP (Gray, TN)

- Presenter: Exploring species distribution and ecological niche modeling approaches for two disparate species: the Texas Antelope Squirrel and the Giant Otter – is there a ‘best’ option for all species? (**Joyner**, Lyon*, Wallace)
- Co-presenter: Implications of niche models based on past climate data for conservation of the endangered *Ailurus fulgens* (Lyon*, Wallace, **Joyner**)
- Co-presenter (poster): Late Pleistocene models of *Saiga tatarica* (Artiodactyla: Bovidae): comparing current and past predictions with fossil locations (Jurestovsky*, **Joyner**)
- Co-presenter (panel): Developing a state climate office in Tennessee: using geospatial and paleo data to better understand the past (Tollefson, **Joyner**, Samuels)

- Southeast Geological Society of America (SEGSA) Conference

2019 SEGSA (Charleston, SC)

- Co-presenter: Slope instability analysis and detection of volumetric change using a small unmanned aerial vehicle (sUAV) (Das*, Tollefson, Nandi, **Joyner**)

2018 SEGSA (Knoxville, TN)

- Co-presenter: FM signal strength prediction in differing topographic environments (Land*, Nandi, Whitelaw, **Joyner**)

2017 SEGSA (Richmond, VA)

- Co-presenter: Groundwater nitrate concentrations and its relation to land cover and water depth in Buncombe County, NC (Agyemang*, Nandi, Luffman, **Joyner**)

- Best Practices in Higher Education Emergency Management Conference

2018 BPHEEMC (Nashville, TN)

- Presenter: Hazard mitigation planning for institutes of higher education: collaborative opportunities and implementation of innovative methodologies (**Joyner**, Harris*, Worley, Bartlett, Hart, Tollefson, Ogden*)

2017 BPHEEMC (Blacksburg, VA)

- Presenter: Integrating hazard mitigation planning within higher education (Harris*, **Joyner**, Tollefson, Worley)

- Ecological Society of America

2018 ESA (New Orleans, LA)

- Co-presenter: Niche modeling for the genus *Pogona* (Agamidae: Squamata) in Australia: predicting past (late Quaternary) and future (2070) occurrence (Rej* & **Joyner**)

- International Association of Volcanology and Chemistry of the Earth’s Interior

2017 IAVCEI (Portland, OR)

- Co-presenter: Assessing stakeholder perceptions and warning confidence at Kilauea and Mauna Loa volcanoes, Hawaii (Reeves*, Gregg, Lindell, **Joyner**, Prater)
- Co-presenter: Resident stakeholder perceptions of lava flow hazard diversion strategies and protective measures for infrastructure and commercial and private property on Kilauea and Mauna Loa volcanoes, Hawaii (Gregg, Reeves*, Lindell, Trusdell, Houghton, **Joyner**)

- Co-presenter: Official stakeholder mental models of effective volcano evacuation at the Long Valley Caldera and Mono-Inyo Craters volcanic system, eastern California, USA (Peers*, Johnston, Reeves*, Gregg, Lindell, **Joyner**)
- American Geophysical Union (AGU)
 - 2016 AGU (San Francisco)
 - Co-presenter: Organizational preparedness for and management of volcanic crises at Kilauea and Mauna Loa volcanoes, Hawaii (Reeves*, Lindell, Gregg, Prater, **Joyner**, Eggert)
- Tufts University (Boston, MA)
 - 2017 Hazard Mitigation Plan Stakeholders Meetings (Medford, MA; Boston, MA; Grafton, MA): Defining and grouping hazards and an overview of the proposed "Risk Assessment" for the Tufts University multi-campus Hazard Mitigation Plan. Presenter. Site visits to all four campuses (Main/Medford, Boston Health Sciences, School of the Museum of Fine Arts, Grafton Veterinary School) (June 2017)
 - 2017 Hazard Mitigation Plan Mitigation Strategy Meetings & EMAP Review (Medford, MA): Identifying and adapting mitigation strategies for each Tufts University campus. Presenter. (July 2017)
- American Association of State Climatologists (AASC) Conference (2017, Asheville, NC)
- Southeast Free and Open Source Software for GIS (SeFOSS4G) Conference (2017, Knoxville, TN)
- Tennessee Climate Office (TCO) Meetings
 - 2018 (July) Developing a Strategic Partnership between Tennessee State Agencies and the Tennessee Climate Office (@ TDEC in Nashville)
 - 2018 (July) Advisory Board Meeting of the Kentucky Mesonet: Planning for a Tennessee Mesonet
 - 2016 (July) Overview of Goals and Mission of the Tennessee Climate Office: Exploring a Collaborative Relationship with the National Weather Service @ Morristown
 - 2016 (October) Webinar: Preliminary Discussion on the Development of the Tennessee Climate Office; includes stakeholders from NWS offices (all four serving TN), NOAA NCEI, NOAA Regional Headquarters, AASC, SC and KY State Climatologists, SRCC representatives
 - 2016 (November) Guest Discussion at the American Meteorological Society (Knoxville Chapter) Quarterly Meeting at NWS-Morristown: Efforts to increase climatology curriculum and establish a state climate office at ETSU
 - 2017 (January) Washington County, TN Local Emergency Planning Committee (LEPC): Current progress on developing the Tennessee Climate Office
- Tennessee Public Health Association (TPHA)
 - 2015 Annual Conference (Franklin, TN): Tennessee Stroke Registry Report, 2014. Poster Presentation co-presenter. (Morrel*, Johnson*, **Joyner**, Quinn)

2014 Annual Conference (Franklin, TN): Tennessee Stroke Registry Report, 2013. Poster Presentation co-presenter. (Brooks, Johnson*, **Joyner**, Quinn) 9/10/2014

- Adaptations Futures

2016 Fourth International Climate Change Adaptation Conference (Rotterdam, Netherlands): When is it "good enough?" Comparing datasets for tick-borne disease surveillance and adaptation. Presentation co-presenter. (Poole*, **Joyner**, Böckmann*)

- Society for Risk Analysis (SRA)

2015 Annual Conference (Arlington, VA): Climate change impacts on heat-related mortality in large urban areas in China: preliminary results of predicting temperature change in the warm season. Presentation co-presenter. (Li, ...**Joyner**)

- Governors Office of Homeland Security and Emergency Preparedness (Louisiana)

2014 State Hazard Mitigation Plan Review 1 for Parishes (Lafayette, LA): A final review of hazard modeling and vulnerability for the 2014 state plan update. Presenter. (August 2014)

2014 State Hazard Mitigation Plan Workshop (Baton Rouge, LA): A final review of hazard modeling and vulnerability for the 2014 state plan update. Presenter. (May 2014)

2013 State Hazard Mitigation Plan Stakeholders Meeting (Baton Rouge, LA): A final review of hazard modeling and vulnerability for the 2014 state plan update. Presenter. (December 2013)

2013 State Hazard Mitigation Plan Stakeholders Meeting (Baton Rouge, LA): An overview of the proposed "Risk Assessment" for Louisiana. Presenter. (August 2013)

2013 State Hazard Mitigation Plan Advisory Meetings (Baton Rouge, LA): Defining and grouping hazards for the state hazard mitigation plan update. Presenter. (May 2013)

- Americas Conference on Wind Engineering (ACWE)

2013 12th Annual Conference (Seattle, WA): Cross-correlation Modeling of European Wind Storms: A Cokriging Approach for Optimizing Surface Wind Estimates. Poster Presentation. (Friedland & **Joyner**)

- German Epidemiology Society Conference (DGE)

2013 Annual Conference (Bremen, Germany): Old risks in new places? – an ecological niche model for *Ixodes ricinus* tick distribution in Europe under a changing climate. Poster Presentation co-presenter. (Böckmann & **Joyner**)

- Deutsche Forschungsgemeinschaft (DFG) and National Science Foundation (NSF) Joint Research Conference: Reckoning with the Risk of Catastrophe

2012 DFG-NSF (Washington, D.C.):

- Poster Presentation: Interpolating European wind storms: a cokriging analysis of wind speed

- estimates (**Joyner**, Rohli, Friedland)
 - Guest Panelist: "World Cafe" discussions on the future of disaster science and policy
- American Meteorological Society (AMS) Conference
 - 2012 AMS (New Orleans): Atmospheric, oceanic, and related sciences and university living-learning communities. Poster presentation (co-presenter) (Rohli & **Joyner**)
- Applied Geoinformatics (AGIT) International Forum
 - 2012 AGIT (Salzburg, Austria): Optimizing Peak Gust and Maximum Sustained Wind Speed Estimates for European Storms. Poster Presentation. (**Joyner**, Rohli, Friedland)
- Florida Society of Geographers (FSG) Conference
 - 2010 FSG (Tampa Bay, FL): Evaluating environmental parameters of *Bacillus anthracis* in Kazakhstan: An examination of rule-set writing and mapping within an ecological niche modeling tool. Paper presentation. (**Joyner** & Blackburn)
- URISA GIS in Public Health Conference
 - 2009 Conference (Providence, RI):
 - Presenter: The landscape ecology of *Bacillus anthracis* in Kazakhstan: current and future geographic distribution predictions (**Joyner**, ...Blackburn)
 - Presenter: Modeling vector distributions for CCHF in Kazakhstan with ecological niche modeling and GIS (**Joyner**, ...Blackburn)
 - Workshop co-presenter: Ecological niche modeling for predicting disease distributions: designing experiments and interpreting results (**Joyner** & Blackburn)
- All Points of the Compass Geography Awareness Conference
 - 2009 Conference (Fullerton, CA): Analysis of environmental variables used to measure current and future distributions of *Bacillus anthracis* in Kazakhstan. Paper presentation. (**Joyner** & Blackburn)
- New England Geological Society of America (NEGSA)
 - 2008 NEGSA (Buffalo, NY)
 - Presenter: High resolution mapping of human ecology on Damariscove Island, Maine (**Joyner**, Sigrist, Pasay, Vanderberg, Bampton, Swanson)
 - Co-presenter: Mapping a glacial landscape (Vanderberg, **Joyner**, Bampton, Swanson)
- Southwest American Association of Geographers (SWAAG) Conference
 - 2007 SWAAG (Bryan, TX): Historical mapping of the landscape of Damariscove Island, Maine. Paper presentation. (**Joyner**, Sigrist, Pasay, Vanderberg, Bampton, Swanson)

Colloquia/Guest Lectures

- Guest Lectures

East Tennessee State University – March 28, 2019 (Guest lecture for Applied Skills in Sociology graduate class): Overview of Geospatial Data and Technologies

East Tennessee State University – February 27, 2019 (Guest lecture for Biological Sciences seminar series): Biogeography, GIS, & Modeling: Technologies, Data, & Opportunity

East Tennessee State University – December 3, 2018 (Guest lecture for GEOS 5000): A review of geospatial research in hazards, climatology, and ecology

East Tennessee State University – Nov 1, 2018 (Guest presentation for GEOL 1050): Overview of Geospatial research and opportunities in Geosciences

East Tennessee State University – October 24, 2018 (Guest lecture for Conservation Biology): Applications of Geospatial Analysis in Biogeography: Species Distribution/Niche Modeling

East Tennessee State University – October 12, 2018 (Guest lecture for ENVH seminar series): Applications of geospatial analysis in public health: examples and opportunities

East Tennessee State University – September 27, 2018 (Guest lecture for EPID 5430): Infectious disease, climate, & GIS: analyses of health and place

East Tennessee State University – April 24, 2018 (Guest presentation for GEOL 1050): Overview of Geospatial research and opportunities in Geosciences

East Tennessee State University – November 30, 2017 (Guest demo for GEOS 1500): Drone/UAS demonstration

East Tennessee State University – October 26, 2017 (Guest presentation for GEOL 1050): Overview of Geospatial research and opportunities in Geosciences

East Tennessee State University – October 23, 2017 (Guest presentation for GEOL 1040): Overview of Geospatial research and opportunities in Geosciences

East Tennessee State University – September 21, 2017 (Guest lecture for EPID 5430): Geospatial analysis and niche modeling: an examination of infectious diseases and climate change

Local Emergency Planning Committee (Washington County, TN) – January 2017 (Invited)
Hazard mitigation planning: an opportunity for ETSU

East Tennessee State University – November 7, 2016 (Guest lecture for HIST 5000): A geospatial analysis perspective on historical research

East Tennessee State University – November 3, 2016 (Guest demo for GEOS 1500): Drone/UAS demonstration

East Tennessee State University – September 26, 2016 (Guest lecture for GEOS 5000): A review of geospatial research in hazards, climatology, and ecology

East Tennessee State University – September 15, 2016 (Guest lecture for EPID 5430): Geospatial analysis and public health: an examination of infectious diseases, climate change, and accessibility

East Tennessee State University – December 7, 2015 (Invited guest talk: ETSU Emergency Preparedness Committee): Hazard Mitigation Planning – An Opportunity for ETSU

Western Carolina University - October 30, 2015 (Invited seminar lecture for Paul Burton Seminar Series): Spatial ecology, medical geography, and climate change: how research questions evolve

Warren Wilson College - October 5, 2015 (Invited recruitment lecture to Open Source GIS class): An overview of the geospatial masters program in the Department of Geosciences at East Tennessee State University; (emphasis on current and past student thesis projects/research)

East Tennessee State University - September 25, 2015 (Guest lecture for ENVH Seminar series): Exploring environmental health issues using geospatial analysis and climate change data

East Tennessee State University – September 17, 2015 (Guest lecture for EPID 5430): Geospatial analysis and climate change: an examination of infectious diseases and other public health concerns

Leibniz Institute for Prevention Research and Epidemiology (Bremen, Germany) – June 29, 2015 (Invited Guest Lecture): Ticks, anthrax, and climate change: exploring the spatiotemporal components of public health issues.

East Tennessee State University – September 25, 2014 (Guest lecture for EPID 5430): Niche modeling for pathogens and infectious diseases.

East Tennessee State University - January 30, 2014 (Guest lecture for GEOL 3481): What is hazard mitigation?

University of Central Arkansas - February 19, 2013 (Research presentation): The geostatistical analysis of mid-latitude wave cyclones in Europe.

University of Central Arkansas - February 19, 2013 (Guest lecture): World regional geography - East Asia.

George Washington University - February 12, 2013 (Guest lecture): The importance of physical geography in East Asia.

George Washington University - February 11, 2013 (Research presentation): Spatially and temporally analyzing climate change and climate variability through niche modeling and atmospheric influences.

East Tennessee State University - February 8, 2013 (Brown bag forum): Spatially and temporally analyzing climate change using ecological niche modeling.

East Tennessee State University - February 7, 2013 (Research presentation): Optimizing peak gust

and maximum sustained wind speed estimates from mid-latitude wave cyclones.

Louisiana State University - January 2013 (Coffee & Carbs: Topics in Climatology): Global Köppen climate types and climate change implications.

Louisiana State University – September 2012 (Coffee & Carbs: Topics in Climatology): A summer in Austria and cokriging of European wind storms.

Carinthia University of Applied Sciences – June 2012 (Invited Lecture): Mid-latitude wave cyclones and surface wind estimates in coastal and mountainous terrain of Europe.

Louisiana State University – February 2012 (Coffee & Carbs: Topics in Climatology): Spatial interpolation of peak gust and maximum sustained wind speeds for European storms.

Louisiana State University – October 2011 (Coffee & Carbs: Topics in Climatology): Exploring the spatio-temporal components of tularemia in Sweden: do teleconnection phases influence outbreak potential?

University of Florida – October 2009 (Friday forum): Climate change and *Bacillus anthracis*: predicting potential current and future distributions in Kazakhstan.

California State University, Fullerton – October 2007 (Guest lecture series): Geological and ecological mapping of remote island environments on the coast of Maine.

- LSU Honors College Thesis Colloquium

2008 LSU Honors College (Baton Rouge, LA): Kernel density estimation and ENSO relationships of hurricane track frequencies in the North Atlantic basin.

Service (Department/College/University/Professional)

Department

- ***AR Sandbox Outreach Events***

- June 13, 2019 (Coalition 4 Kids)
- June 10, 2019 (Camp Star)
- February 9, 2019 (ETSU – Girl Scouts 'Journey' Event at Ross Hall)
- November 8, 2018 (ETSU)
- October 19, 2018 (ETSU)
- July 20, 2018 (ETSU)
- July 2, 2018 (ETSU)
- June 27, 2018 (ETSU)
- June 25, 2018 (Johnson City Memorial Center)
- July 24, 2018 (Science Hill High School)
- June 7, 2018 (ETSU)
- April 30, 2018 (Indian Trail Intermediate)
- April 20, 2018 (GEOL 1040)
- March 29, 2018 (Two events: Liberty Bell Middle School & Fairmont Elementary)

- March 27, 2018 (ETSU Professional Development event for Johnson City Schools Teachers)
- **Graduate GIS Certificate Program**
 - ETSU GIS Certificate Coordinator (2017-present)
 - Co-developed ETSU GIS Certificate Program (graduate) proposal with Dr. Nandi (2016-2017)
- **GIS Day/Mapping Month Co-Organizer**
 - November 2018 (multiple events in November celebrating maps and GIS)
 - November 2017 (multiple events in November celebrating maps and GIS)
 - April 2015 (Earth Month collaboration @ Gray Fossil Site)
 - November 2013 (GIS demo lead @ Gray Fossil Site)
- **ETSU Summer Orientations**
 - July 2019
 - July 2018
 - June 2017
- **ETSU Open Houses**
 - March 2019
 - October 2018
 - March 2018
 - October 2017
 - October 2016
- **Search Committees**
 - Geosciences Lecturer Search Committee Member (2017)
 - Geosciences Assistant Professor Search Committee Chair (2015)
- **Individual Events/Committees**
 - Sullivan East High School – STEM night table showcasing Geosciences and career opportunities with William Tollefson (April 9, 2019)
 - ETSU Department of Geosciences Technology Access Fee Proposal (ESRI License Fee) Committee (2016-present)
 - Supervisor for ETSU GIS HelpDesk (2014-present)
 - ETSU Department of Geosciences Geospatial Curriculum Steering Committee (2013-present)
 - STEM Blue Weekend @ ETSU: Department of Geosciences Overview (guest talk) (April 2016)
 - Little Bucs drone demo and USA floor map class for summer camp (Summer 2015, 2016)
 - Experience ETSU: co-hosted Geosciences department table with Dr. Nandi (October 2015)
 - Daniel Boone High School – college night table showcasing Geosciences and geospatial opportunities w/Dr. Whitelaw (August 2014)
 - Guest panelist for Earth Day @ Gray Fossil Site Museum - Topic: Climatology/Meteorology (April 2014)
 - Coastal South Carolina field trip co-supervisor – coastal and seismic hazards near Charleston SC (March 2014)
 - Moderator for Geography Bee at Innovation Academy of Northeast Tennessee (Jan 2014)
 - Volunteer @ Gray Fossil Site Museum Red Panda Day (Oct 2013)

College/University

- **Tennessee Climate Office**

- Provide weekly advisement for the US Drought Monitor (location and severity of drought across Tennessee): <http://droughtmonitor.unl.edu/>
- Monthly Tennessee Climate Reports (October 2017-present) developed for the Southern Regional Climate Center (SRCC) & NOAA Monthly Climate Report (e.g., <https://www.ncdc.noaa.gov/sotc/national/201807>)
- Monthly conference calls (review of monthly climate reports) with the SRCC
- Quarterly conference calls (review of climate reports and seasonal forecast) with the Southeast Regional Climate Center (SERCC)
- Provide feedback to Tennessee Advisory Commission on Intergovernmental Relations (TACIR) regarding the establishment of a Community Resilience Taskforce (HB1120, SB1114)
- State participant in monthly national climate office user engagement survey (partnership with NOAA and AASC) (2018-2019, Oct-Sep)
- Attended Tennessee Climate Network Breakfast (inaugural) in Nashville, TN (May 21, 2019) and will serve on eventual steering committee for advocacy
- Developed proposal for inclusion of TCO in the CAS 10-year Strategic Plan (Research & Creative Activity section)
- Advised development of the Tennessee Mesonet Site Assessment (student-led project from GIS Projects w/John Reason, Reagan Cornett, and Ashley Singer)
- Provided technical support and review of the NIDIS Southeast Drought & Wildfire Assessment (2016) report (<http://www.sercc.com/NIDISDroughtAssessmentFINAL.pdf>)
- Attended 2017 & 2018 American Association of State Climatologists (AASC) Conferences
- Developing a TCO website (www.etsu.edu/cas/geosciences/tn-climate)
- Aided TDEC in developing a survey to gauge the need for a climate office from other state agencies (e.g., Dept of Health, TVA, TWRA, Dept of Ag, etc.) (link: <https://www.surveymonkey.com/r/Y8MQS5L>)
- Coordinated development of Tennessee Climate Atlas (w/Kimberly Blazzard and William Tollefson)

- **Publicity**

- Interviewed by Climate Central about allergy season and possible impacts from climate change (March 26, 2019)
- Interview on regional climate change impacts: <https://wcyb.com/weather/weather-blog/heavy-rain-and-flooding-could-become-more-common>
- Interview on Antarctica ice shelf breaking: <http://wcyb.com/features/weekend-drive/local-experts-speak-about-what-potential-impacts-of-antarctica-ice-break>
- Johnson City Metro Planning Organization highlighted student-led project from GIS Projects (GEOS 5320): <https://jctngis.maps.arcgis.com/apps/Cascade/index.html?appid=9e2f05ba67d94596ae62638105fd7a01> and <https://www.jcmppo.org/>
- Sevier County Hazard Mitigation Plan:
 - * https://www.etsu.edu/news/2018/06-jun/nr_sevier_co_hazard_mitigation.aspx
 - * <https://www.wbir.com/article/news/local/etsu-sevier-county-to-prepare-hazard-mitigation-plan/51-563352889>
 - * <http://wcyb.com/news/local/etsu-sevier-county-to-prepare-hazard-mitigation-plan>
 - * http://www.themountainpress.com/news/county-gets-funding-for-hazard-mitigation/article_e71f05bb-4b87-5fd3-8adf-9bb46503bb99.html
- ETSU Hazard Mitigation Plan:

- * <http://www.johnsoncitypress.com/News/2016/06/06/ETSU-receives-grant-to-help-identify>
- * https://www.etsu.edu/accent/2016/06_june/hazard_mitigation.aspx
- * https://www.etsu.edu/news/collarts_sciences_news/geosciences/2015/hazardmitigation.aspx
- * https://www.etsu.edu/news/2016/06_jun/hazard_mitigation.aspx
- * <http://wcyb.com/news/tennessee-news/175000-grant-will-help-etsu-fund-mitigation-plan>
- * <https://gis.e-education.psu.edu/node/535>
- Tufts Hazard Mitigation Plan Announcements:
 - * <https://emergency.tufts.edu/news/2017/10/31/tufts-university-awarded-emap-accreditation/>
 - * <http://sites.tufts.edu/tuftsgetsgreen/2017/09/21/hazard-mitigation-community-forums/>
- Presentation announcement (TCO):
 - * <https://www.ametsoc.org/chapters/smokymnt/nextmeeting.html>

- **Appalachian Student Research Forum Judge**

- April 2018
- April 2014

- **Individual Events/Committees**

- Climate Roundtable for Johnson City, Planning Committee (2019), event on June 12, 2019
- Blue Plum Festival Mapping Committee (2019) (develop static, interactive, and story maps)
- Member, CAS Strategic Planning Committee, Initiative #5 (2018-2019)
- Member, ETSU UAV/Drone Policy Committee (2018-present)
- Reviewer for RDC Major Grant (3 Grant Proposals) (April 2018)
- Member of Appalachian Obesity & METabolic diseases (APPOMET) Working Group (formerly the Metabolic Syndrome Working Group (METSWG) at ETSU (led by Dr. Arsham Alamian in the College of Public Health) (2016-present) (only CAS member)
- Outside Observer for Fyram Asempa (MS candidate in Chemistry) (March 2016)

Discipline/Community

- **Manuscript Reviews**

- Water* (2019)
- Insects* (2019)
- PeerJ* (2018/2019)
- Journal of Applied Meteorology and Climatology* (2018)
- Sustainability* (2018*2)
- International Journal of Environmental Research and Public Health* (2018*2)
- Environmental Monitoring and Assessment* (2017*2)
- Vaccine* (2017)
- Obesity* (2016, 2017)
- Geographical Research* (2017)
- Environmental Contamination and Clean Technologies* (2016)
- International Journal of Digital Earth* (2015)
- Journal of Ecology and the Natural Environment* (2015)
- Ecological Engineering* (2015)

- Cartography and Geographic Information Science* (2014)
- PLoS ONE* (2014, 2015)
- American Journal of Tropical Medicine and Hygiene* (2014)
- Air, Soil, and Water Research* (2013)
- Ecological Modelling* (2013)
- Journal of Hydrology* (2013)

- ***Southeast Division of the American Association of Geographers (SEDAAG)***

- SEDAAG Local Host Planning Committee co-Chair for 2018 (with Dr. Ingrid Luffman & Mr. William Tollefson) (2016-2018)
- SEDAAG Geography Bowl Coordinator for Tennessee (2015-present)
- ETSU Geosciences Program Table @ SEDAAG (2015; co-hosted w/Luffman)
- Multiple Conference Events (November 2014):
 - 1) Co-hosted Geosciences department table with Dr. Luffman
 - 2) Co-hosted round robin interview/dinner with potential graduate students with Dr. Luffman
 - 3) Leader for ETSU Geography Bowl team

- ***Individual Events/Committees***

- GIS Technical Review for Mammoth Site & Museum in Hot Springs, SD (May 2018; 6 pp.)
- Tennessee Board of Regents Audit Team Chair for Austin Peay State University Department of Geosciences (2016-2017)
- Technical Advisor: Louisiana State Hazard Mitigation Plan Update (Governor's Office of Homeland Security and Emergency Preparedness) (2013-2017)
- International Storytelling Festival (Jonesborough, TN): aerial drone services (September 2015)
- Mountain Regional-Northeast Tennessee GIS Meeting: co-organizer (2014)

Pre-ETSU Service

- Weekly Research Colloquia (Topics in Climatology): Speaker Coordinator (2011-2013)
- LSU Disaster Science and Management Curriculum Steering Committee (2012-2013)
- Professional Development Panel (LSU Geography & Anthropology Department): G&A Stories from the Search panel speaker (2013)
- International Astronomy Day @ BREC Highland Road Park Observatory: Southern Regional Climate Center table volunteer (2013)
- Coalition to Restore Coastal Louisiana: Mangrove planting volunteer @ Port Fourchon and @ Lafitte (2013)
- University Lab High School Dual Enrollment World Geography Course Liaison (2013)
- Climatology Student Group Professional Development (weekly): Primary Organizer (2011-2012)
- Spatial Modeling Support (volunteer) for Museum of Natural Sciences (2011)

Awards/Honors

- Climate Data Hackathon Competition (Asheville NC @ The Collider, hosted by NOAA with Global Parametrics as the stakeholder) – 1st place for development of the Australia Extreme Temperature Index
- Graduate faculty of the year (Golden Screw Award) (2014-2015, 2015-2016) Department of Geosciences,

ETSU

- Co-faculty of the year (2013-2014) Department of Geosciences, ETSU
- Research assistantship with Disaster Science and Management Program (Louisiana State University) (2010-2013)
- Marshall Plan Fellowship at Carinthia University of Applied Sciences - Villach, Austria (2012)
- Louisiana State University Graduate School and Departmental travel awards for 2011 and 2012 AAG conferences
- Research assistantship with Spatial Epidemiology and Ecology Research Lab (California State University, Fullerton and University of Florida) (2008-2010)
- Tuition-waiver scholarship (California State University, Fullerton) (2008-2009)
- Carville Earle Memorial Undergraduate Geography Scholarship (2008)
- Tiger Athletic Foundation Senior Honors Thesis Scholarship (2007)
- Certificate for Sophomore Honors Distinction (2006)
- Chancellor's Aid Award (2004-2008)
- Dean's list (2005-2008)

Additional Skills and Abilities

- Hazard mitigation plan development (including THIRA and EMAP documents/components)
- Geostatistical analyses of climatic events and variables through spatial statistics and surface interpolations
- Spatial analyses and implementation of a GIS in examining the spatial and temporal features of multiple climatological anomalies and disease patterns
- Water quality analyses through modeling and visualization in multiple open source environments
- Examination of health and climate relationships
- Cartographic expertise used to create various published map products
- Analysis of land use and land cover change through remote sensing
- Familiarity with climate change research and IPCC future climate scenarios
- Development and presentation of multiple national and international training seminars in GIS and ecological niche modeling
- Research, presentation, and writing skills and extensive field research experience
- Database development and management skills
- **Software:** ArcGIS 9.x & 10.x (ArcInfo/Adv), ArcPro 2.x, ArcOnline, Python (light, Anaconda, qtpy, jupyter), ERDAS Imagine 9.x, ArcView 3.x, Hawth's Tools/GME, Geostatistical Analyst, Diva GIS, QGIS, Whitebox GAT, MapWindow, Geomedia Professional, CrimeStat III, SPSS, R & Rstudio, Geoda 0.9.5, OpenStat, Genetic Algorithm for Rule-set Prediction (GARP), OpenModeller, Bioclim/Domain Species Distribution Modeling, Maxent, Biomapper 4.0, BASINS 4 (CAT, HSPF, AQUATOX), HAZUS-MH 4.0, ALOHA chemical model, MARPLOT, SLOSH, TileMill/Mapbox, ArcGIS Viewer for Flex, EndNote X7, Canvas, Adobe Illustrator, Microsoft Office Suite, Moodle, D2L (Online Teaching)

Certifications

- ESRI Do-It-Yourself GeoApps MOOC: Completed October, 2018
- Web Content Management System Administration (for TCO website development): ETSU Workshop, August 16, 2018
- Web GIS Administration (ArcGIS Online and License Management): AAG Workshop, April 11, 2018
- FEMA IS-922 (Applications of GIS for Emergency Management): August 25, 2016

- FEMA IS-909 (Community Preparedness Implementing Simple Activities for Everyone): August 25, 2016
- FEMA IS-319 (Tornado Mitigation Basics for Mitigation Staff): September 22, 2016
- NOAA NWS Skywarn Training (Stormspotter) (Johnson City, TN): March 24, 2015
- NOAA Coastal Inundation Mapping (Baton Rouge, LA): January 30-31, 2012
- FEMA HAZUS-MH 2.0/CDMS Training (Baltimore, MD): January 16-19, 2012
- FEMA IS-22 (Emergency Management – Citizen Preparedness): April 6, 2011

Affiliations/Memberships

- Association of American Geographers (AAG) (2007-present)
- Southeast Division AAG (2014-present)
- American Association of State Climatologists (AASC) (2017-present)
- Tennessee Geographic Information Council and Northeast Tennessee GIS users group (2014-present)
- Southeast Free and Open Source Software for GIS (SeFOSS4G) (2017-present)
- Florida Society of Geographers (FSG) (2009-2010)
- Urban and Regional Information Systems Association (URISA) GIS in Public Health (2008-2010)
- Southwest Division of the Association of American Geographers (SWAAG) (2007-2008)
- Northeast Geological Society Association (NEGSA) (2007-2008)
- National Society of Collegiate Scholars (NSCS) (2005-2008)