

Amy E. Frazier, Ph.D.

Arizona State University ▪ School of Geographical Sciences and Urban Planning

Email: Amy.Frazier@asu.eduWebsite: <https://www.frazierlab.org>**EDUCATION**

University at Buffalo Buffalo, NY	Ph.D. Geography (GIScience)	2013
West Chester University West Chester, PA	M.A. Geography	2006
Dartmouth College Hanover, NH	A.B. Environmental Earth Science	2002

EMPLOYMENT

2021-Present	Associate Professor – School of Geographical Sciences and Urban Planning, Arizona State University
2018-2021	Assistant Professor – School of Geographical Sciences and Urban Planning, Arizona State University
2013-2018	Assistant Professor - Department of Geography, Oklahoma State University and Director of the Center for Applications of Remote Sensing

APPOINTMENTS

2021-Present	Core Faculty – Center for Global Discovery and Conservation Science (GDCCS), Arizona State University
2019-Present	Associate Director – Geospatial Research and Solutions, Arizona State University
2019-Present	Faculty Affiliate – Center for Biodiversity Outcomes, Arizona State University
2018-Present	Core Faculty – Spatial Analysis Research Center (SPARC), Arizona State University Senior Global Futures Scientist – Julie Ann Wrigley Global Futures Laboratory, Arizona State University (formerly the Global Institute of Sustainability)
2018-2021	Adjunct Assistant Professor – Department of Geography, Oklahoma State University
2013-2018	Director – Center for Applications of Remote Sensing (CARS), Oklahoma State University

RESEARCH INTERESTS

- Conservation and sustainability: reaching protected area targets, improving protected area and habitat connectivity, species distribution modeling
- Geographic Information Science (GIScience): data representation, scale, and downscaling; landscape heterogeneity and spatial pattern metrics; emerging landscape and spatial data paradigms in landscape ecology
- Remote sensing: satellite, aerial, and unpiloted aircraft systems (UAS, drones); harnessing commercial smallsat data, imaging spectroscopy

GRANTS & FELLOWSHIPS

Summary: Research funding from the National Science Foundation (NSF); United States Department of Agriculture (USDA); National Aeronautics and Space Administration (NASA), Department of Energy (DOE), and USAID. I have contributed to acquiring \$48,359,484 in extramural research funding, with \$2,734,967 in direct researcher contributions.

- 2023-2028 **DOE Office of Science** - Southwest Urban Corridor Integrated Field Laboratory (SW-IFL). Total Award Amount: \$25,000,001 (Role: Sr. Personnel: \$500,000)
- 2022-2027 **NSF Long Term Ecological Research (LTER)** - Central Arizona Phoenix (CAP) V: Investigating how relationships between urban ecological infrastructure and human-environment interactions shape the structure and function of urban ecosystems. Total Award Amount: \$7,649,990 (Role: Sr. Personnel: \$76,500)
- 2022-2025 **NSF Collaborative Research: Biodiversity on a Changing Planet (BoCP-Implementation)** – BioFI: Biodiversity Forecasting Initiative to Understand Population, Community and Ecosystem Function Under Global Change. Award No. 2225079. Total Award Amount \$2,500,000 (Role: Co-PI & ASU PI: \$499,511).
- 2022-2022 **ASU Healthy Urban Environments (HUE)** - Advancing Decision Support for Tree and Shade Equity in Maricopa County. (Total Award Amount: \$50,000 (Role: Co-PI [PI: David Hondula]) Awarded.
- 2021 – 2022 **NSF Long Term Ecological Research (LTER)** - Central Arizona Phoenix (CAP) IV: Investigating urban ecology through the lens of urban ecological infrastructure. Total Award Amount for this period: \$2,253,998 (Role: Sr. Personnel: \$45,080).
- 2020-2023 **Advancing Women’s Prosperity in the Workplace through Technical and Soft Skills in Environmental Science and Geospatial Technologies** – Solicited by Universities Space Research Association (USRA) for submission to NASA’s SERVIR program and in partnership with USAID. Agreement No: USRA # 80MSFC17M0022: 03605-06. Total Award Amount: \$639,484 (Role: Co-PI: \$255,794).
- 2020-2022 **ASU Global Sport Institute** - Air Quality Sensing to Support Athlete Health and Participatory Action in South Phoenix. Total Award Amount: \$30,000. (Role: Co-PI [ASU PI: Jenni Vanos]).
- 2019-2022 **NSF Collaborative Research: Harnessing the Data Revolution** - Near term forecasts of global plant distribution, community structure, and ecosystem function. Award No. 1934759. Total Award Amount: \$2,849,504 (Role: Co-PI & ASU PI: \$298,435).
- 2019 - 2020 **NSF Geography and Spatial Sciences** - Doctoral Dissertation Research: Spatial Structure of Turbulent Flows in the Atmospheric Boundary Layer. Award No. 1842715. Total Award Amount: \$17,799 (Role: PI; with Ph.D. Student Benjamin Hemingway as Co-PI)
- 2018 **NSF TRELIS Fellow** - Selected through a competitive process to participate in an intensive program of professional development for academic women in the geospatial sciences to build leadership capacity and skills. TRELIS is funded by the U.S. National Science Foundation and co-managed by UCGIS and the University of Maine (Grant #1660400). (Role: Fellow)
- 2018-2023 **United States Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA)** - Participatory Approaches to Agroecosystem Resilience in times of Drought (ARID). Total award amount: \$1,199,940 (Role: Co-I for OSU Subaward, \$514,051 [Declined upon moving institutions])

- 2016-2018 **NSF Geography and Spatial Sciences/Methodology, Measurement, and Statistics** – Data Complexity and Spatial Scaling: Prediction Accuracy and Implications for Emerging Landscape Paradigms. Award No. 1561021. Total Award Amount: \$121,921 (Role: PI)
- 2016 **NASA EPSCoR/Oklahoma NASA Space Grant Consortium** – Identifying and Quantifying Urban Change with Remote Sensing and GIS. Award No. NNX15AK42A. Total award amount: \$36,000 (Role: Co-PI)
- 2015-2019 **NSF EPSCoR RII Track 2 FEC** – UAS for Weather: CLOUD-MAP (Collaborative Leading Operational UAS Development for Meteorology and Atmospheric Physics). Award No. IIA-1531070. Total award amount: \$5,995,000 (Role: Senior Personnel/Institutional Co-PI \$274,030)
- 2015 **Dean's Incentive Grant (DIG)** – research grant offered by Oklahoma State University for professors in their first two years of employment. Total award amount: \$3,000 (Role: PI)
- 2014 **Dean's Incentive Grant (DIG)** – research grant offered by Oklahoma State University for professors in their first two years of employment. Total award amount: \$3,000 (Role: PI)
- 2013-2015 **NSF Geography and Spatial Sciences** – Doctoral Dissertation Research: Overcoming Scale Disparities through Sub-Pixel Remote Sensing Classifications and Spatial Pattern Metrics. Award No. 1303086. Award amount: \$15,847 (Role: PI)
- 2011 **Mark Diamond Research Foundation Grant** – research grant offered by the University at Buffalo to graduate students for research expenses related to doctoral dissertation. Award amount: \$2,000 (Role: PI)
- 2009-2013 **University at Buffalo Presidential Fellow** – Doctoral fellowship granted by the College of Arts and Sciences to recruit outstanding graduate students. Award amount: \$24,000. (Role: Fellow)
- 2008-2012 **NSF IGERT in GIScience Fellow** – Doctoral fellowship granted by the National Science Foundation's Integrative Graduate Research and Education Traineeship (IGERT) for the interdisciplinary training of scientists and engineers. (Role: Fellow)

HONORS & AWARDS

- 2017 **Outstanding Faculty Award** – Oklahoma State University, Department of Geography – voted on by students in the Geography department.
- 2016 **Junior Faculty Award for Scholarly Excellence** - College of Arts & Sciences, Oklahoma State University
- First Place President's Cup Award:** Oklahoma State University – *Interdisciplinary Synergies for Unmanned Aerial System (UAS) Innovation and Advancement*
- 2015 **Nystrom Finalist** – Association of American Geographers award for outstanding dissertation
- 2014 **Outstanding Teacher: Oklahoma State University Department of Geography** – voted on by students as Outstanding Teacher in the department
- 2013 **NASA-MSU Professional Enhancement Award** – supported travel to and participation in the 2013 US-IALE Annual Symposium in Austin, TX
- Graduate Student Association Conference Travel Award** – awarded by the University at Buffalo to support travel to the 2013 AAG meeting in Los Angeles
- 2012 **First Place AAG Remote Sensing Specialty Group 2012 Student Honors Paper Competition** – Paper title: Super-Resolution Land Cover Mapping using Landscape Metrics

- University at Buffalo Excellence in Teaching Award** – award given to recognize outstanding graduate students based on teaching performance
- First Place UNESCO Chair Young Scholar Summit Student Paper Award** – student paper competition sponsored by the UNESCO Chair in Hydroinformatics and Ecohydrology, Capital Normal University, Beijing, China – July 9, 2012
- ASPRS Student of the Year Award** – Ph.D. student in the Central New York Region of the American Society for Photogrammetric Engineering and Remote Sensing (ASPRS).
- GSEU Professional Development Award** – funding for conference travel through the New York State Graduate Student Employees Union Professional Development Award
- 2009 **Hugh W. Calkins Applied GIS Award Recipient** – Award given annually to a graduate student in the University at Buffalo Geography Department.
- 2005-Present **Member: Gamma Theta Upsilon** – National Honor Society in Geography
- 2005 **Achievement Academy Collegiate All-American Scholar Award**

PEER-REVIEWED ARTICLES (*designates student/advisee; ‡ equivalent authorship; 5-yr impact factors are for 2021 and sourced from Web of Science Journal Citation Reports unless otherwise noted). Author order generally reflects order of contributions, except for corresponding author or lab PI, who is sometimes listed last.

63. **Frazier, A.E.**, P. Kedron, M. Donovan (2023) *Editorial*: Advancing a science of scaling in landscape ecology. *Landscape Ecology*. <https://doi.org/10.1007/s10980-022-01591-w>
(5-yr IF: 5.587; Context: editorial introducing special issue on 'Advancing a science of scaling in landscape ecology')
62. Wu, S.*, S. Hu, **A.E. Frazier**, Z. Hu. (2023) China's urban and rural residential carbon emissions: past and future scenarios. *Resources, Conservation and Recycling*. <https://doi.org/10.1016/j.resconrec.2022.106802>
(5-yr IF: 10.056; Context: work related to lead author's PhD dissertation; Role: contributed to writing and editing)
61. Ran, P.*, S. Hu, **A.E. Frazier**, S. Qu, S. Yang, X. Song. (2023) The dynamic relationships between landscape structure and ecosystem services: An empirical analysis from the Wuhan metropolitan area. *Journal of Environmental Management*. <https://doi.org/10.1016/j.jenvman.2022.116575>
(5-yr IF: 8.626; Context: work related to lead author's PhD dissertation; Role: contributed to writing and editing)
60. Kedron, P., **A.E. Frazier**. (2022) How to Improve the Reproducibility, Replicability, and Extensibility of Remote Sensing Research. *Remote Sensing*. <https://doi.org/10.3390/rs14215471>
(5-yr IF: 5.353; Role: Helped conceptualize study, contributed to writing and editing)
59. K. Markham*, **A.E. Frazier**, K.K. Singh, M. Madden (2022) A review of methods for scaling remotely sensed data for spatial pattern analysis. *Landscape Ecology*. <https://doi.org/10.1007/s10980-022-01449-1>
(5-yr IF: 5.587; Role: Helped conceptualize study, review literature, and write/edit drafts. Review is contribution to special issue on "Advancing a science of scaling in landscape ecology")
58. Stuhlmacher, M.*, M. Georgescu, B.L. Turner II, Y. Hu, R. Goldblatt, S. Gupta, **A.E. Frazier**, Y. Kim, R.C. Balling, N. Clinton. (2022) Are global cities homogenizing? An assessment of urban form and heat island implications. *Cities*. <https://doi.org/10.1016/j.cities.2022.103705>
(5-yr IF: 6.40; Context: work related to lead author's PhD dissertation; Role: Co-Advised lead author on research, contributed to conceptualizing study and editing document)

57. Golden, K., B.L. Hemingway, **A.E. Frazier**, R. Scholtz, S. Fuhlendorf, C. Davis, W. Harrell (2022) Spatial and temporal prediction of whooping crane (*Grus americana*) habitat along the Gulf Coast. *Conservation Science and Practice*. <https://doi.org/10.1111/csp2.12696>
(5-yr IF: 3.574; Context: work related to lead author's PhD dissertation; Role: Co-Advised lead author on research, contributed to conceptualizing study, writing and editing document)
56. Ran, P.*, S. Hu, **A.E. Frazier**, S. Qu, D. Yu, L. Tong. (2022). Exploring changes in landscape ecological risk in the Yangtze River Economic Belt from a spatiotemporal perspective. *Ecological Indicators*. 137. <http://doi.org/10.1016/j.ecolind.2022.108744>
(5-yr IF: 5.172; Role: Writing and editing; Web of Science ESI Highly Cited Paper - Top 1%)
55. **Frazier, A.E.** (2022) Scope and its contributions for advancing a science of scaling in landscape ecology. *Landscape Ecology*. <https://doi.org/10.1007/s10980-022-01403-1>
(5-yr IF: 5.587; Role: Perspective article for special issue on "Advancing a science of scaling in landscape ecology")
54. **Frazier, A.E.**, P. Kedron, G.A. Ovando-Montejo*, Y. Zhao*. (Online 2021) Scaling spatial pattern metrics: impacts of composition and configuration on downscaling accuracy. *Landscape Ecology*. <http://doi.org/10.1007/s10980-021-01349-w>
(5-yr IF: 5.587; Role: PI on grant funding work, conceptualized study design and methodology, implemented analyses and code, wrote and edited paper, served as corresponding author)
53. **Frazier, A.E.** and B.L. Hemingway (2021) A technical review of Planet smallsat data: practical considerations for processing and using PlanetScope imagery. *Remote Sensing*
(5-yr IF: 5.353; Role: PI on grant funding work, conceptualized study, implemented review, analyzed literature, wrote and edited paper, served as corresponding author)
52. Ovando-Montejo, G.A.*, P. Kedron, **A.E. Frazier** (2021). Relationship between urban size and configuration: Scaling evidence from a hierarchical system in Mexico. *Applied Geography*, 132: 102462.
(5-yr IF: 4.732; Role: PhD advisor for lead author, helped conceptualize study and design methodology, aided analyses, wrote/edited sections of paper, served as corresponding author)
51. Wu, S.*, S. Hu, and **A.E. Frazier** (2021) Spatiotemporal changes and driving factors of carbon emissions in industrial land spaces in China from 1997 to 2016. *Technological Forecasting & Social Change*
(5-yr IF: 10.884; Context: work related to lead author's PhD dissertation; Role: contributed to writing and editing)
50. **Frazier, A.E.**, M. Honzak, C. Hudson*, R. Perlin*, A. Thotsonie*, K. Gaddis, C. de Sousa, T. Larson, J. Junker, S. Nyandwi*, A.B. Trgovac (2021) Connectivity and conservation of chimpanzee (*Pan troglodytes verus*) habitat in Liberia. *Diversity and Distributions*. <https://doi.org/10.1111/ddi.13270>
(5-yr IF: 5.717; COVER; Context: work emerged from ASU-Conservation International partnership and included Capstone project work for three MAS-GIS students; Role: Conceptualized study, designed methodology, completed analyses, wrote/edited paper, mentored students, corresponding author).
49. Kedia, A.C.*, B. Kapos*, S. Liao*, J. Draper, J. Eddinger, C. Updike, **A.E. Frazier** (2021) An integrated spectral-structural workflow for invasive vegetation mapping in an arid region using drones. *Drones*. <https://doi.org/10.3390/drones5010019>
(2-yr IF: 6.48; Context: work related to students' MAS-GIS capstone project; Role: Advised on research conceptualization, contributed to writing/editing, corresponding author; Media: coverage by ABC 15 Phoenix)

48. Sanders, J.D.*, J.L. Talley, **A.E. Frazier**, B.H. Noden (2020) Landscape and anthropogenic factors associated with adult *Aedes aegypti* and *Aedes albopictus* in small cities in the southern Great Plains. *Insects*.
<https://doi.org/10.3390/insects11100699>
(5-yr IF: 3.286; Context: work related to lead authors' masters thesis; Role: Advised on spatial analysis components of analysis, contributed to paper writing/editing)
47. de Boer, G., A. Houston, J.D. Jacob, P.B. Chilson, S.W. Smith, B. Argrow, D. Lawrence, J. Elston, D. Brus, O. Kempainen, P. Klein, J.K. Lundquist, S. Waugh, S.C.C. Bailey, **A.E. Frazier**, M.P. Sama, C. Crick, D. Schmale III, J. Pinto, E.A. Pillar-Little, V. Natalie, A. Jensen (2020) Data generated during the 2018 LAPSE-RATE Campaign: An introduction and overview. *Earth System Science Data Discussions*.
<https://doi.org/10.5194/essd-2020-98>
(5-yr IF: 11.245; Context: work related to field campaign held as part of NSF grant IIA-1539070 to test UAS systems for weather forecasting; Role: Led data collection aspects during campaign, contributed to paper writing/editing)
46. Stuhlmacher, M.*, B.L. Turner II, **A.E. Frazier**, Y. Kim, J.T. Leffel (2020) Institutional shifts and landscape change: The impact of the Período Especial on Cuba's land system architecture. *Journal of Land Use Science*.
<https://doi.org/10.1080/1747423X.2020.1829119>
(5-yr IF: 2.75; Context: work related to lead author's PhD dissertation; Role: Co-Advised lead author on research, contributed to editing document)
45. Flynn, K.C.*, **A.E. Frazier**, S. Admas. (2020) Nutrient prediction for tef (*Eragrostis tef*) plant and grain with hyperspectral data and partial least squares regression: replicating methods and results across environments. *Remote Sensing*. <https://doi.org/10.3390/rs12182867>
(5-yr IF: 5.353; Context: work related to lead author's PhD dissertation; Role: Advised lead author on research, aided with conceptualization of study, edited document, mentored student through submission and revision)
44. Thomas, A.F.*, **A.E. Frazier**, A.J. Mathews, and C. Cordova (2020) Impacts of abrupt terrain changes and grass cover on vertical accuracy of UAS-SfM derived surface models. *Papers in Applied Geography*
(5-yr IF: N/A; Context: work was first author's masters thesis; Role: Advisor, advised lead author on study, converted thesis to manuscript for publication, served as corresponding author)
43. Stuhlmacher, M.*, R. Andrade, B.L. Turner II, **A.E. Frazier**, W. Li. (2020) Environmental outcomes of urban land systems: comparing riparian design approaches in the Phoenix metropolitan area. *Land Use Policy*.
<https://doi.org/10.1016/j.landusepol.2020.104615>
(5-yr IF: 5.398; Context: work related to first author's PhD dissertation; Role: committee member, advised lead author on certain aspects of the study, edited document)
42. Hemingway, B.L.*, **A.E. Frazier**, B. Elbing, J.D. Jacob (2020) High-resolution estimation of and spatial interpolation of temperature structure in the atmospheric boundary layer. *Boundary-Layer Meteorology*.
<https://doi.org/10.1007/s10546-020-00512-1>
(5-yr IF: 3.563; Context: work related to first author's PhD dissertation; Role: Advised lead author on research, aided with conceptualization of study, data collection, edited document, mentored student through submission and revision)
41. Flynn, K.C.*, **A.E. Frazier** & S. Admas. (2020) Performance of chlorophyll prediction indices for *Eragrostis tef* at Sentinel-2 MSI and Landsat-8 OLI spectral resolutions. *Precision Agriculture*.
<https://doi.org/10.1007/s11119-020-09708-4>

(5-yr IF: 5.875; Context: work related to first author's PhD dissertation; Role: Advised lead author on research, aided with conceptualization of study, edited document, mentored student through submission and revision)

40. Ovando-Montejo, G.A.* & **A.E. Frazier** (2020) Geographic assessment of urban quality of life in Mexico City using socio-economic and environmental factors. *International Journal of Applied Geographic Research*. 11(3)
(5-yr IF: N/A; Context: work was first author's masters' thesis; Role: Advised lead author on research, helped with conceptualization of study, edited document, mentored)
39. Yang, X., K. Crewes, P. Kedron, **A.E. Frazier** (2020). Appropriate spatial scale for potential woody cover observation in Texas savanna. *Landscape Ecology*, 35(1), 101-112 <https://10.1007/s10980-019-00933-5>
(5-yr IF: 5.587; Context: contributed scale perspective to analysis; Role: helped design analysis, wrote portions of text, edited entire document)
38. de Boer, G., C. Diehl, J.D. Jacob, A. Houston, S.W. Smith, P. Chilson, D.G. Schmale III, J. Intrieri, J. Pinto, J. Elston, D. Brus, O. Kempinen, A. Clark, D. Lawrence, S.C.C. Bailey, M.P. Sama, **A.E. Frazier**, C. Crick, V. Natalie, E. Pillar-Little, P. Klein, S. Waugh, J.K. Lundquist, L. Barbieri, S.T. Kral, A.A. Jensen, C. Dixon, S. Borenstein, D.S. Hesselius, K. Human, P. Hall, B. Argrow, T. Thornberry, R. Wright, J.T. Kelly. (2019) Development of community, capabilities and understanding through unmanned aircraft-based atmospheric research: The LAPSE-RATE campaign. *Bulletin of the American Meteorological Society*.
<https://doi.org/10.1175/BAMS-D-19-0050.1>
(5-yr IF: 8.766; Context: Field campaign held as part of NSF grant IIA-1539070 to test UAS systems for weather forecasting; Role: Participated in field campaign, contributed to data collection, edited document)
37. Hu, S., L. Tong* & **A.E. Frazier**. (2019) Hierarchically measuring urban expansion in rapidly urbanizing regions using multi-dimensional metrics: A case of Wuhan metropolis, China. *Habitat International*. 94,
<https://doi.org/10.1016/j.habitatint.2019.102070>
(5-yr IF: 5.369; Role: contributed extensively to writing and editing)
36. **Frazier, A.E.**, J.M. Vadjunec, P.J. Kedron, T. Fagin (2019) Linking landscape ecology and land system architecture for land system science: an introduction to the special issue. *Journal of Land Use Science*. 14(2), 123-134 <https://doi.org/10.1080/1747423X.2019.1660728>
(5-yr IF: n/a; 2021 IF: 2.897; Context: work related to USDA-NIFA grant to investigate agroecosystem resilience. Role: Corresponding editor for entire Special issue; led development and writing the introduction piece; served as corresponding author)
35. Kedron, P., **A.E. Frazier**, A.B. Trgovac, T. Nelson, A.S. Fotheringham. (2019) Reproducibility and replicability in Geographical Analysis. *Geographical Analysis*. <https://doi.org/10.1111/gean.12221>
(5-yr IF: 4.268; Context: Piece contributed as part of special issue on the next 50 years of Geographical Analysis; Role: contributed to conceptualization, writing, and editing of manuscript; Article recognized as in the top 10% of downloaded articles from the journal in 2019)
34. **Frazier, A.E.** (2019) Emerging trajectories for spatial pattern analysis in landscape ecology. *Landscape Ecology*. 34(9), 2073-2082. <https://doi.org/10.1007/s10980-019-00880-1>
(5-yr IF: 5.587; Context: Invited contribution of perspective piece for a special issue on Describing and analyzing landscape patterns-where are we now, and where are we going?)
33. Kedron, P., Y. Zhao* & **A.E. Frazier** (2019) Three dimensional (3D) spatial metrics for objects. *Landscape Ecology*. <https://doi.org/10.1007/s10980-019-00861-4>

(5-yr IF: 5.587; Context: Author team was invited to contribute this short communication for a special issue on Describing and analyzing landscape patterns-where are we now, and where are we going? after presentation during US-IALE meeting in 2018. Role: conceived of the idea, wrote and edited the manuscript, helped mentor the graduate student)

32. Barbieri, L.*, S. Kral, S.C.C. Bailey, **A.E. Frazier**, J.D. Jacob, J. Reuder, D. Brus, P. Chilson, C. Crick, C. Detweiler, A. Doddi, J. Elston, H. Foroutan, J. Gonzalez-Rocha, B. Greene, M. Guzman, A.L. Houston, A. Islam, O. Kempainen, D. Lawrence, E.A. Pillar-Little, S.D. Ross, M.P. Sama, D.G. Schmale, T.J. Schuyler, A. Shankar, S.W. Smith, S. Waugh, C. Dixon, S. Borenstein, G. de Boer (2019) Small unmanned aircraft systems in science: measurement intercomparison for LAPSE-RATE. *Sensors*, 19(9), 2179.

<https://doi.org/10.3390/s19092179>

(5-yr IF: 4.050; Context: Study arose from large, multi-institutional field campaign held as part of NSF grant IIA-1531070. First six (and final) authors wrote and edited the doc, remaining authors listed alphabetically. Role: wrote introduction, portions of study area and methodology, co-edited document)

31. **Frazier, A.E.** (2019). Landscape Metrics. *The Geographic Information Science & Technology Body of Knowledge* (2nd Quarter 2019 Edition), John P. Wilson (Ed.). <https://doi.org/10.22224/gistbok/2019.2.3>

(IF: n/a; Context: invited contribution to the GIS&T BOK 2nd Edition, work related to NSF grant 1561021)

30. **Frazier, A.E.**, B.L. Hemingway*, J. Brasher* (2019) Land surface heterogeneity and tornado occurrence: an analysis of Tornado Alley and Dixie Alley. *Geomatics, Natural Hazards and Risk*. 10 (1), 1475-1492

<https://doi.org/10.1080/19475705.2019.1583292>

(5-yr IF: 3.922; Context: research related to NSF grant IIA-1531070 on UAS for severe weather; Role: Research advisor for students; conceived of study, wrote and edited paper, mentored students on data analysis, served as corresponding author.)

29. **Frazier, A.E.**, B.A. Bryan, A. Buyantuev, L. Chen, C. Echeverria, P. Jia, L. Liu, Q. Li, Z. Ouyang, J. Wu, W-N. Xiang, J. Yang, L. Yang, S. Zhao (2019) Editorial Published in Landscape Ecology: Ecological civilization: perspectives from landscape ecology and landscape sustainability science. *Landscape Ecology*, 34(1): 1-8.

<https://doi.org/10.1007/s10980-019-00772-4>

(5-yr IF: 5.587; Context: Editorial written by invited participants from 6th Annual Landscape Sustainability Science Workshop; Role: I led effort to compile perspectives, wrote and compiled manuscript, served as corresponding author.)

28. Mathews, A.J. ‡, **A.E. Frazier**‡, S.V. Nghiem, G. Neumann, Y. Zhao* (2019) Satellite scatterometer estimation of urban built-up volume: validation with airborne lidar data. *International Journal of Applied Earth Observations and Geoinformation*, 77:100-107. <https://doi.org/10.1016/j.jag.2019.01.004>

(5-yr IF: 5.933; Context: work part of NASA/Oklahoma EPSCoR grant with Co-I Mathews; Role: conceived study with all co-authors, analyzed results, co-wrote and edited paper, mentored student, who analyzed data)

27. **Frazier, A.E.** (2018) Accuracy assessment technique for testing multiple sub-pixel mapping downscaling factors. *Remote Sensing Letters*, 9(10):992-1001 <https://doi.org/10.1080/2150704X.2018.1500724>

(5-yr IF: 4.8; Context: work related to NSF grant #1561021)

↑ Moved to ASU

26. Kedron, P., **A.E. Frazier**, G. Ovando-Montejo*, J. Wang (2018) Surface metrics for landscape ecology: A comparison of landscape models across ecoregions and scales *Landscape Ecology*. 33(9):1489-1504.

<https://doi.org/10.1007/s10980-018-0685-1>

(5-yr IF: 5.587; Context: work related to NSF grant 1561021; Role: co-led conceptualization of study with Co-PI Kedron, wrote and edited manuscript, served as corresponding author)

25. Tong, L.*, S. Hu, and **A.E. Frazier**. (2018) Mixed accuracy of nighttime lights (NTL)-based urban land identification using thresholds: Evidence from a hierarchical analysis in Wuhan Metropolis, China. *Applied Geography*, 98: 201-214. <https://doi.org/10.1016/j.apgeog.2018.07.017>
(5-yr IF: 4.732; Role: contributed heavily to writing and editing)
24. Vadunec, J.M. ‡, **A.E. Frazier**‡, P. Kedron, T. Fagin, and Y. Zhao*. (2018). A Land Systems Science framework for bridging land architecture and landscape ecology: a case study from the Southern High Plains. *Land*, 7(1), 27. <https://doi.org/10.3390/land7010027>
(5-yr IF: 4.048; Context: paper and framework emerged from research funded by USDA-NIFA to investigate agroecosystem resilience. Article selected as issue cover; Role: co-conceptualized, wrote, and edited manuscript)
23. Singh, K.K. ‡ and **A.E. Frazier**‡. (2018) A systematic review and meta-analysis of unmanned aircraft systems (UAS) in terrestrial applications. *International Journal of Remote Sensing*, 39: 5078-5098. <https://doi.org/10.1080/01431161.2017.1420941>
(5-yr IF: 6.5; Role: co-designed study, co-reviewed articles, wrote and edited manuscript, served as corresponding author)
22. Hemingway, B.*, **A.E. Frazier**, B. Elbing, J.D. Jacob. (2017) Vertical sampling scales for atmospheric boundary layer measurements from small unmanned aircraft systems (sUAS). *Atmosphere*, 8(9): 176 <https://doi.org/10.3390/atmos8090176>
(5-yr IF: 3.222; Context: paper related to lead-author's dissertation; Role: mentored lead author through study design, data collection, analysis, writing and editing, served as corresponding author)
21. **Frazier, A.E.** and P. Kedron (2017) Comparing forest fragmentation in Eastern U.S. forests using patch-mosaic and gradient surface models. *Ecological Informatics*, 41: 108-115 <https://doi.org/10.1016/j.ecoinf.2017.08.002>
(5-yr IF: 4.18; Context: paper related to NSF grant 1561021 on scaling; Role: co-designed study; completed all analyses; co-wrote and edited manuscript; served as corresponding author)
20. Tong, L*, S. Hu, **A.E. Frazier**, and Y. Liu. (2017) Multi-order urban development model and sprawl patterns: An analysis in China, 2000-2010. *Landscape and Urban Planning*, 167: 386-398. <https://doi.org/10.1016/j.landurbplan.2017.07.001>
(5-yr IF: 6.852; Role: contributed to writing and heavy editing of the manuscript)
19. Mathews, A.J. ‡ and **A.E. Frazier**‡. (2017) Unmanned Aerial Systems. *The Geographic Information Science & Technology Body of Knowledge* (2nd Quarter 2017 Edition), John P. Wilson, Ed. <https://doi.org/10.22224/gistbok/2017.2.4>
(5-yr IF: n/a; Context: invited contribution to the GIS&T BOK 2nd Edition; Role: co-wrote entry)
18. **Frazier, A.E.** and P. Kedron. (2017) Landscape metrics: past progress and future directions. *Current Landscape Ecology Reviews*. <https://doi.org/10.1007/s40823-017-0026-0>
(5-yr IF(2018): 6.571; Context: invited to contribute review piece based on NSF grant 1561021; Role: conceptualized and wrote majority of paper, edited, served as corresponding author)
17. Walker, C.*, K.C. Flynn*, G. Ovando-Montejo*, E. Ellis*, and **A.E. Frazier**. (2017) Does demolition improve biodiversity? Linking urban green space and socioeconomic characteristics to avian richness in a shrinking city. *Urban Ecosystems*. <https://doi.org/10.1007/s11252-017-0671-4>
(5-yr IF: 3.246; Context: project undertaken by a group of students in Advanced Remote Sensing course; Role: I taught the course and mentored the students through their study design, data analysis, writing, and manuscript submission, I mentored lead author through her role as corresponding author; I performed heavy edits after initial reviews)

16. Zhao, Y. *, G. Ovando-Montejo*, **A.E. Frazier**, A.J. Mathews, K.C. Flynn*, E.A. Ellis* (2017) Estimating work and home population using lidar-derived building volumes. *International Journal of Remote Sensing*, 38(4). <https://doi.org/10.1080/01431161.2017.1280634>
(5-yr IF: 6.5; Context: paper resulted from NASA/Oklahoma EPSCoR grant with Co-PI Mathews; Role: advised and mentored four student authors (starred); wrote and edited majority of manuscript, served as corresponding author)
15. **Frazier, A.E.** and T. Wikle. (2017) Renaming and rebranding within U.S. and Canadian geography departments, 1990-2014. *The Professional Geographer* <https://doi.org/10.1080/00330124.2015.1135404>
(5-yr IF: 3.5; Context: paper emerged from departmental discussions on benefits and disadvantages of renaming geography departments; Role: co-designed study; performed all data analysis; co-wrote and co-edited manuscript)
14. **Frazier, A.E.**, T. Wikle, and P. Kedron. (2017) Exploring the anatomy of Geographic Information Systems and Technology (GIS&T) textbooks. *Transactions in GIS*. <https://doi.org/10.1111/tgis.12301>
(5-yr IF: 2.406; Context: paper emerged from pedagogical discussions with colleagues related to GIS curriculum; Role: co-designed study with co-authors, coded all textbooks analyzed in study by matching themes to GIS&T Body of Knowledge, wrote majority of the manuscript, edited)
13. D.C. Barrett* and **A.E. Frazier**. (2016). Automated method for monitoring water quality using Landsat Imagery. *Water*, 8(6), <https://doi.org/10.3390/w8060257>
(5-yr IF: 3.628; Context: paper based on lead-author's master's thesis; Role: advisor, mentored lead author through design, analysis, and writing, contributed to writing and editing manuscript, served as corresponding author)
12. **Frazier, A.E.** (2016) Surface metrics: Scaling relationships and downscaling behavior. *Landscape Ecology*, 31(2): 351-363 <https://doi.org/10.1007/s10980-015-0248-7>
(5-yr IF: 5.587; Context: extension of downscaling contributions to the gradient paradigm)
11. **Frazier, A.E.** (2015) Landscape heterogeneity and scale considerations for super resolution mapping. *International Journal of Remote Sensing*, 36(9): 2395-2408 <https://doi.org/10.1080/2150704X.2015.1040130>
(5-yr IF: 6.5; Context: paper contribution of scaling work across paradigms)
10. Bendixsen, D.P.*, S.W. Hallgren, and **A.E. Frazier**. (2015) The role of stress factors in oak decline in an oak-hickory forest of south-central United States. *Forest Ecology and Management*, 347:40-48 <https://doi.org/10.1016/j.foreco.2015.03.015>
(5-yr IF: 3.558; Context: lead author enrolled in course I taught and implemented spatial analytical techniques into masters thesis; Role: I advised on use of techniques and helped write/edit associated portions of the manuscript)
9. **Frazier, A.E.**, and S. Bagchi-Sen. (2015) Developing open space networks in shrinking cities. *Applied Geography*, 59:1-9. <https://doi.org/10.1016/j.apgeog.2015.02.010>
(5-yr IF: 4.732; Role: designed study and executed analysis, wrote entire manuscript, performed all edits and revisions, served as corresponding author)
8. Hu, S. L. Tong*, **A.E. Frazier**, and Y. Liu. (2015) Urban boundaries extraction and landscape dynamics characterization using remote sensing images: A case study in Wuhan, China. *Habitat International*, 47: 183-195. <https://doi.org/10.1016/j.habitatint.2015.01.017>
(5-yr IF: 5.369; Role: contributed to writing and considerable editing of the manuscript)
7. **Frazier, A.E.** (2014) A new data aggregation technique for improving landscape metric downscaling. *Landscape Ecology*, 29(7):1261-1276. <https://doi.org/10.1007/s10980-014-0066-3>
(5-yr IF: 5.587)

6. **Frazier, A.E.**, L. Wang, and J. Chen. (2014) Two new hyperspectral indices for comparing vegetation chlorophyll content. *Geo-Spatial Information Science*, 17(1):17-25.
<https://doi.org/10.1080/10095020.2014.889264>
(2018 IF: 2.96; Context: study completed in concert with dissertation research using data captured during field campaign in China; Role: I designed study, executed analysis, wrote manuscript, and performed all edits)
5. **Frazier, A.E.**, S. Bagchi-Sen, and J. Knight. (2013) The spatio-temporal impacts of demolition land use policy and crime in a shrinking city. *Applied Geography*, 41:55-64.
<https://doi.org/10.1016/j.apgeog.2013.02.014>
(5-yr IF: 4.732; Context: Research performed as RA for Bagchi-Sen; Role: designed and executed analysis, wrote manuscript, performed majority of edits, served as corresponding author)
4. **Frazier, A.E.**, and L. Wang. (2013) Modeling landscape structure response across a gradient of land cover intensity. *Landscape Ecology*, 28(2):233-246. <https://doi.org/10.1007/s10980-012-9839-8>
(5-yr IF: 5.587; Context: paper part of dissertation; Role: I conceived of study, gathered and analyzed all of the data, wrote manuscript, performed all edits and revisions, served as corresponding author)
3. **Frazier, A.E.**, C. Renschler, and S. Miles. (2013) Evaluating ecosystem resilience using MODIS GPP. *International Journal of Applied Earth Observation and Geoinformation*, 21:43-52.
<https://doi.org/10.1016/j.jag.2012.07.019>
(5-yr IF: 5.993; Context: research related to NIST grant on defining and measuring community resilience; Role: designed study, executed analysis, wrote paper, performed majority of edits, served as corresponding author)
2. Wang, L., J.L. Silván-Cárdenas, J. Yang, and **A.E. Frazier**. (2013) Invasive saltcedar spread mapping using multi-resolution remote sensing data. *The Professional Geographer*, 65(1): 1-15.
<https://doi.org/10.1080/00330124.2012.679440>
(5-yr IF: 3.5; Context: work ancillary to dissertation research; Role: edited document, created figures)
1. **Frazier, A.E.** and L. Wang. (2011). Characterizing spatial patterns of invasive species using sub-pixel classifications. *Remote Sensing of Environment*, 115: 1997-2007. <https://doi.org/10.1016/j.rse.2011.04.002>
(5-yr IF: 10.164; Context: paper part of dissertation; Role: I conceived of study, gathered and analyzed data, wrote manuscript, and performed all revisions)

Manuscripts in review/revision

60. Brugere, L. **A.E. Frazier**, P. Kedron, Y. Kwon (In Revision). Improved prediction of tree species richness and interpretability of environmental drivers using a machine learning approach.
61. **Frazier, A.E.**, P. Kedron, W. Yang, H. Quan (In Revision). Only 3 percent of the continental U.S. is protected and connected.
62. Godwyll, J., C. Buzinde, **A.E. Frazier**, D. White, D. Manuel-Navarrete. (In Review) Examining the linkages between community well-being and access to public spaces: an environmental justice perspective.
63. Godwyll, J., C. Buzinde, **A.E. Frazier**, D. White, D. Manuel-Navarrete. (In Review) Access to Public Spaces: Examining the Linkages Between Environmental Justice and Community Well-Being
64. Golden, K.E., B.L. Hemingway, **A.E. Frazier**, W. Harrell, S.D. Fuhlendorf, C.A. Davis. (In Review) Historical and recent fire ecology on national wildlife refuges: a case study on Aransas National Wildlife Refuge
65. Stuhlmacher, M., **A.E. Frazier**, I. Croya, W. Yang. (In Review) Future cities may be wealthier and more innovative, but less green.

66. Hinojo-Hinojo, C., T. Bohner, J. Chacon-Labela, N. Falco, M. Goulden, B. Hemingway, C. Merow, E. Nikolopoulos, H. Wainwright, J. Wang, **A.E. Frazier** and B. Enquist. (In Review) Global shift in a key plant trait indicates pervasive alteration of terrestrial biosphere functioning.

BOOKS

2. **Frazier, A.E.** and K.K. Singh (Eds.) (2021) *Fundamentals of Capturing and Processing Drone Imagery and Data*. Taylor & Francis/Routledge/CRC Press.
(An edited textbook with 7 introductory chapters and 12 hands-on laboratory exercises)
1. Weaver, R., S. Bagchi-Sen, J. Knight, and **A.E. Frazier**. (2016) *Shrinking Cities: Understanding Shrinkage and Decline in the United States*. Routledge.

BOOK CHAPTERS

9. **Frazier, A.E.** (Invited) Uncrewed aircraft systems (UAS) for predicting, visualizing, and modelling environmental change. Invited contribution in: Clifford, N., Gillespie T. (Eds.) *Key Methods in Geography*. Sage.
8. **Frazier, A.E.** and K.K. Singh. Introduction to capturing and processing drone imagery and data (2021). In: Frazier A.E. and K.K. Singh (Eds.) *Fundamentals of Capturing and Processing Drone Imagery and Data*. Taylor & Francis/Routledge/CRC Press.
7. **Frazier, A.E.**, T. Howell, and K.K. Singh (2021). An introduction to drone remote sensing and photogrammetry (2021) In: Frazier A.E. and K.K. Singh (Eds.) *Fundamentals of Capturing and Processing Drone Imagery and Data*. Taylor & Francis/Routledge/CRC Press.
6. Ricker, B. and **A.E. Frazier** (2021). Aerial cinematography with UAS (2021) In: Frazier A.E. and K.K. Singh (Eds.) *Fundamentals of Capturing and Processing Drone Imagery and Data*. Taylor & Francis/Routledge/CRC Press.
5. Singh, K.K., T. Brown, and **A.E. Frazier** (2021). Aligning and Stitching drone captured images. In: Frazier A.E. and K.K. Singh (Eds.) *Fundamentals of Capturing and Processing Drone Imagery and Data*. Taylor & Francis/Routledge/CRC Press.
4. Singh, K.K., K. Markham, **A.E. Frazier**, and J.C. Hodgson (2021). Counting wildlife from drone-captured imagery using visual and semi-automated techniques. In: Frazier A.E. and K.K. Singh (Eds.) *Fundamentals of Capturing and Processing Drone Imagery and Data*. Taylor & Francis/Routledge/CRC Press.
3. **Frazier, A.E.** and B.L. Hemingway (2021). Detecting scales of drone-based atmospheric measurements using semivariograms. In: Frazier A.E. and K.K. Singh (Eds.) *Fundamentals of Capturing and Processing Drone Imagery and Data*. Taylor & Francis/Routledge/CRC Press.
2. Kedron, P.J. and **A.E. Frazier** (2019) Gradient Analysis and Surface Metrics for Landscape Ecology. in eds. Muller, L. *Current Trends in Landscape Research*, Springer.
1. Wang, L. and **A.E. Frazier**. (2012) Advanced Geospatial Techniques for Mapping and Monitoring Invasive Species, in eds. Yang, X. & Li, J. *Advances in Mapping from Aerospace Imagery: Techniques and Applications*, CRC Press: New York.

DATASETS

4. Sabu, S. and **A.E. Frazier**. (2022) Land use and land cover (LULC) classification of the CAP LTER study area (central Arizona, USA) area using 2015 Landsat imagery. Environmental Data Initiative. <https://doi.org/10.6073/pasta/47c35311db955f6766f431570c370827>
3. Sabu, S. and **A.E. Frazier**. (2022) Normalized Difference Vegetation Index (NDVI) derived from 2019 National Agriculture Imagery Program (NAIP) data for the central Arizona region. Environmental Data Initiative. <https://doi.org/10.6073/pasta/b932c06917e011e4371b706c3fc1267d>

2. Sabu, S. and **A.E. Frazier**. (2022) Soil Adjusted Vegetation Index (SAVI) derived from 2019 National Agriculture Imagery Program (NAIP) data for the central Arizona region. Environmental Data Initiative. <https://doi.org/10.6073/pasta/b932c06917e011e4371b706c3fc1267d>
1. **Frazier, A.E.**, B. Sehner, M. Stuhlmacher, L. Watkins (2021) Composited land surface temperature of the greater Phoenix, Arizona, USA metropolitan area and surrounding Sonoran desert derived from cloud-free, summer (June, July, and August) Landsat imagery: 1985-2020 (ver 2). Environmental Data Initiative. <https://doi.org/10.6073/pasta/ebe6d816dcad68ad4d2bd283c5830a63>.

TECHNICAL REPORTS

1. Renschler, C.S., **Frazier, A.E.**, Arendt, L.A., Cimellaro, G.P., Reinhorn, A.M., Bruneau, M. (2010) A Framework for Defining and Measuring Resilience at the Community Scale: The PEOPLES Resilience Framework, *MCEER Technical Report-MCEER-10-0006*. Multidisciplinary Center for Earthquake Engineering Research, Buffalo, NY.

PEER-REVIEWED CONFERENCE PROCEEDINGS

9. Hemingway, B.L. and **A.E. Frazier** (2021) Cross-sensor radiometric normalization of Planet smallsat data using Sentinel-2 to improve consistency across scenes and environments, *Proc. SPIE 11862, Image and Signal Processing for Remote Sensing XXVII*, 1186204 (12 September 2021); <https://doi.org/10.1117/12.2600246>
8. **Frazier, A.E.** and B. Hemingway (2019) Geostatistical analysis of temperature in the boundary layer using variogram scaling exponents. *Association of Geographic Information Laboratories in Europe (AGILE)*, Limassol, Cyprus, 17-20 June, 2019.
7. Hemingway, B. and **A.E. Frazier** (2018) Geostatistical detection of thermodynamic anisotropy in an atmospheric boundary layer using small unmanned aircraft systems. In: Mansourian, A., Pilesjö, P., Harrie, L., & von Lammeren, R. (Eds.), 2018. *Geospatial Technologies for All: short papers of the 21th AGILE Conference on Geographic Information Science*. Lund University 12-15 June 2018, Lund, Sweden. ISBN 978-3-319-78208-9.
6. **Frazier, A.E.**, A.J. Mathews, B. Hemingway, C. Crick, E. Martin, and S. Smith (2017) Integrating unmanned aircraft systems (UAS) into meteorology and atmospheric science: Challenges and opportunities for GIScience. *GI_Forum*, 4-7 July 2017, Salzburg, Austria. DOI: 10.1553/giscience2017_02_s189
5. **Frazier, A.E.** and P. Kedron. (2016) Impacts of compositional and configurational data loss on downscaling accuracy. *Spatial Accuracy*, 5-8 July, 2016, Montpellier, France
4. Kedron, P., **A.E. Frazier**, C. Greene, and D. Mitchell. (2016) Curriculum Design in Upper-Level and Advanced GIS Classes: Are New Skills being Taught and Integrated? *GI_Forum*, 5-8 July 2016, Salzburg, Austria
3. **Frazier, A.E.** and L. Wang (2010) Optimal ranges to evaluate sub-pixel classifications for landscape metrics. *Proceedings of the American Society of Photogrammetry and Remote Sensing Annual Conference*, May 1-5, 2010, Milwaukee, WI.
2. Renschler, C.S., **Frazier, A.E.**, and Miles, S. (2010) Assessing Community Resilience: A Remote Sensing Approach to Evaluate Post-Disaster Ecosystem Recovery. *Proceedings of the Eighth International Workshop on Remote Sensing for Disaster Management*, Sept. 30-Oct. 1, 2010, Tokyo, Japan.
1. Renschler, C.S., **Frazier, A.E.**, Arendt, L.A., Cimellaro, G.P., Reinhorn, A.M., Bruneau, M. (2010) Developing the 'PEOPLES' Resilience Framework for Defining and Measuring Disaster Resilience at the Community Scale. *Proceedings of the Ninth U.S. National & Tenth Canadian Conference on Earthquake Engineering*, July 25-29, 2010, Toronto, Canada.

PEER-REVIEWED CONFERENCE ABSTRACTS

1. Enquist, B.J., C. Merow, L. Hannah, B. Boyle, Z. Feng, B.S. Maitner, E. Newman, B. McGill, W. Foden, J.C. Lovett, P.A. Marquet, G. Midgley, R. Corlett, P. Roehrdanz, R.V. Gallagher, N. Kraft, N. Morueta-Holme, D.M. Neves, M. Pillet, B. Sandel, J.M. Serra-Diaz, I. Simova, J.-C. Svenning, C. Violle, S. Wiser, R.K. Peet, N. Merchant, E. Anagnostou, E. Nikolopoulos, L. Duncanson, **A.E. Frazier**, D. Barnett, M. Schildhauer, A. Wilson, A. Rominger, J. Slingsby, R. Salguero-Gomez. Forecasting future global biodiversity: Predicting current and future global plant distributions, community structure, and ecosystem function. *American Geophysical Union (AGU) Fall Meeting 2019 Abstracts*, San Francisco, CA 8-13 Dec 2019
2. Hemingway, B., **A.E. Frazier**, B.R. Elbing, and J. Jacob. Evaluating the universality of the temperature structure parameter in the atmospheric surface layer using a small unmanned aircraft system. *American Geophysical Union (AGU) Fall Meeting 2019 Abstracts*. San Francisco, CA 8-13 Dec 2019
3. S.V. Nghiem, C. Small, M.Z. Jacobson, G.R. Brakenridge, D. Balk, A. Sorchetta, M. Masetti, A.E. Gaughan, F.R. Stevens, A. Mathews, **A.E. Frazier**, N.N. Das. (2017) Multi-Sourced Satellite Observations of Land Cover and Land Use Change in South and Southeast Asia with Challenging Environmental and Socioeconomic Impacts. *American Geophysical Union Fall Meeting 2017 Abstracts*, New Orleans, LA 11-15 Dec 2017
4. Cimellaro, G.P., C. Renschler, **A.E. Frazier**, L. Arendt, M. Bruneau, A. Reinhorn. (2011) Community resilience index for road network systems. In. G. De Roeck, G. Degrande, G. Lombaert, G. Müller (eds.) *EURODYN 2011: 8th International Conference on Structural Dynamics*, 4-6 July 2011, Leuven, Belgium.

NON-REFEREED PUBLICATIONS

1. Nelson, T., P. Kedron, M. Goodchild, A.S. Fortheringham, **A.E. Frazier**, W. Li, S. Gao, Y. Hu, M. Tsou, M. Yuan, B. Zhao (2020) Digital Contact Tracing and Surveillance: Geospatial Opportunities, Limitations, and Research Directions. White paper of the School of Geographical Sciences and Urban Planning at Arizona State University. (Available at <https://sgsup.asu.edu/contact-tracing>).

INVITED LECTURES AND PRESENTATIONS

- 2022 **Frazier, A.E.** The Geography of Wine: How physical landscapes and culture combine to produce a good vintage. ASU-Mirabella Lecture Series. 21 April 2022.
- Frazier, A.E.** Cross-disciplinary convergence for addressing grand challenges. Department of Geography, Planning, and the Environment. East Carolina University. 21 March 2022.
- Frazier A.E.** Convergent Spatial Conservation Science: Connecting People and Places for Preservation. Dangermond Seminar Series in Conservation Science, University of California-Santa Barbara. 7 March 2022.
- 2021 **Frazier, A.E.**, J. Stoler and D. Ter-Ghazaryan (Panel). Do Names Matter? Branding, Marketing, and Communicating about Geography, Spatial Sciences, and GIS. UCGIS Webinar. October 4, 2021 (~100 participants). Online: <https://www.youtube.com/watch?v=eMSvWt4v2Xw>
- Eddinger, J., J. Draper, A.C. Kedia, C. Maynard, A.E. Frazier. Processing multispectral data: Vegetation mapping on the Lower Salt River Restoration Project. Arizona Geographic Information Council UAS Workgroup 2021 Fly-In Event. September 15, 2021. Tucson, Arizona.
- Kedia, A.C., **A.E. Frazier**, B. Kapos, S. Liao, J. Draper, J. Eddinger, C. Updike. An integrated spectral-structural workflow for invasive vegetation mapping in an arid region using drones. Invited presentation for the Arizona Geographic Information Council (AGIC) Unmanned Aircraft Systems (UAS) Working Group. May 5, 2021. (Virtual; co-presented with lead author)
- Frazier, A.E.** Connectivity and Conservation of Western Chimpanzee Habitat in Liberia. Seminar given to the Department of Geography, Environment and Sustainability, University of North Carolina – Greensboro, March 19, 2021. (Virtual)

- 2019 **Frazier, A.E.** and Ben Hemingway. Sampling Scales for Atmospheric Measurements. CLOUD-MAP Workshop, Norman, Oklahoma. July 8-10, 2019
- Frazier, A.E.** Harnessing the Data Revolution with Unmanned Aircraft Systems. ASU Spatial Analysis Research Center (SPARC) Anniversary Celebration. February 27, 2019.
- Frazier A.E.** Harnessing the Data Revolution with Unmanned Aircraft Systems: Transforming Research in Geography and Beyond. Invited Keynote given at the Unmanned Aircraft Systems Symposium during the American Association of Geographers annual meeting, April 4, 2019.
- 2018 **Frazier, A.E.** Patterns, Processes and People: Linking Landscape Ecology and Land System Architecture for Landscape Sustainability Science. The 6th Landscape Sustainability Science Forum, Center for Human-Environment System Sustainability, Beijing Normal University, Beijing, China. June 8-9, 2018.
- 2017 **Frazier, A.E.**, T. Wikle, and P. Kedron. Exploring the Anatomy of Geographic Information Systems & Technology (GIS&T) Textbooks. Oklahoma State University, Geography Department Colloquium Series, August 25, 2017.
- 2016 **Frazier, A.E.** Forest Fragmentation: A Fuzzy Look at a Clear-Cut Problem. Middlebury College Woodin Colloquium Series, Middlebury, VT, October 6, 2016.
- 2015 **Frazier, A.E.** Exploiting the Double-Peak Hyperspectral Anomaly for Precision Agriculture. 2016 Oklahoma Remote Sensing Workshop. University of Oklahoma, November 16, 2015.
- Frazier, A.E.** Spatial Scaling and Heterogeneity: Overcoming Disparities to Predict Land Cover Patterns. Department of Forestry and Environmental Resources, North Carolina State University, October 5, 2015.
- Frazier, A.E.** The Pixel Problem: Predicting Land Cover Patterns using Landsat Imagery. Department of Geography Fall Seminar Series, University of North Texas, September 18, 2015.
- 2014 **Frazier, A.E.** Developing Open Space Networks in Shrinking Cities. Department of Geography and Environmental Studies, Ryerson University (Toronto, Canada), October 23, 2014.
- Frazier, A.E.** Modeling Landscape Structure using Advanced Remote Sensing Techniques. Natural Resources, Ecology, and Management (NREM) Seminar, Oklahoma State University, September 19, 2014.
- Frazier, A.E.** Advanced Remote Sensing Techniques for Studying Vegetation Dynamics. Department of Botany Seminar, Oklahoma State University, February 19, 2014
- 2012 **Frazier, A.E.**, Wang, L, and Chen, J. Assessing Plant Chlorophyll Content using Hyperspectral Curve Features. 2012. UNESCO Chair Young Scholar Summit, Capital Normal University, Beijing, China, July 9, 2012.

PROFESSIONAL PRESENTATIONS (first author presented unless otherwise bolded; * student/adviser)

- 2023 Stuhlmacher, M., Frazier, A.E., Corya, I. and Yang, W. (2023) Future cities may be wealthier and more innovative, but less green. AAG Annual Meeting, Denver, CO, 23-27 March 2023
- 2022 Hinojo-Hinojo, C. T. Bohner, J. Chacon-Labela, A. Frazier, N. Falco, B. Hemingway, E. Nikolopoulos, H. Wainwright, B. Enquist. Mapping 35 years of change in Leaf Mass per Area across the globe from multispectral satellite data. European Geophysical Union Annual Meeting. 26 May 2022.
- Frazier, A.E.**, P. Kedron, W. Yang*, H. Quan*. How connected is the protected area network in the United States? International Association of Landscape Ecology – North American Chapter Regional Meeting (Virtual) 11-14 April, 2022.
- Kedron, P., A.E. Frazier, W. Yang*, H. Quan*. The Political Geography of Land Conservation under the 30x30 Target. International Association of Landscape Ecology – North American Chapter Regional Meeting (Virtual) 11-14 April, 2022.

- Yang, W.*, H. Quan*, P. Kedron, A.E. Frazier. A Review of Connectivity Metrics for Protected Areas. International Association of Landscape Ecology – North American Chapter Regional Meeting (Virtual) 11-14 April, 2022.
- Quan, H.*, W. Yang*, P. Kedron, A.E. Frazier. A Reproducible Workflow for Computing Connectivity of Protected Areas. International Association of Landscape Ecology – North American Chapter Regional Meeting (Virtual) 11-14 April, 2022. (Poster)
- Sehner, B.*, A.E. Frazier, B.L. Turner II. Connectivity of thermal refuges within a surface urban heat island. Central Arizona Phoenix-Long Term Ecological Research (CAP-LTER) All Scientists Meeting. 25 March 2022, Tempe, AZ. (Poster)
- 2021 Hinojo-Hinojo, C. T. Bohner, J. Chacon-Labela, A. Frazier, N. Falco, B. Hemingway, E. Nikolopoulos, H. Wainwright, B. Enquist. iLMA: A new multispectral index for monitoring leaf traits reveals a widespread climate-related decrease in leaf mass per are (LMA) over the last 25 years. American Geophysical Union Annual Meeting.
- Stats, A.*, A. Alsanad*, K. Conrow, E. Makings, K. Sweat, A. Frazier, M. Leung. Environmental Suitability Analysis for Cannabis and Hemp Growth in Arizona. Society of Environmental Toxicology and Chemistry (SETAC) North American Annual Meeting, November 14-18, 2021. (Poster)
- Frazier, A.E.** and B.L. Hemingway. Mapping forest degradation in Liberia: monitoring dynamic changes in a vulnerable environment. Planet Explore conference. October 2021. (Virtual)
- Stats, A., K. Conrow, E. Makings, K. Sweat, A.E. Frazier, M. Leung. Environmental suitability analysis for cannabis and hemp growth in Arizona. Southern California Regional Chapter of the Society of Environmental Toxicology and Chemistry (SETAC) Annual Meeting, (Virtual) April 26-28, 2021.
- Frazier, A.E.**, K.E. Golden, B.L. Hemingway. Near-term forecasting of whooping crane (*Grus americana*) habitat along the Gulf Coast. *International Association of Landscape Ecology-North America Annual Meeting*, Reno, NV (Virtual), April 12-15, 2021
- 2020 Stuhlmacher, M., M. Georgescu, Y. Hu, R. Goldblatt, S. Gupta, B.L. Turner II, A.E. Frazier, N. Clinton. Is urban form homogenizing in global cities? An evaluation of urbanization patterns and processes. *American Association of Geographers Annual Meeting*, Denver, CO (Online due to COVID-19)
- 2019 **Frazier, A.E.** Can unmanned aircraft systems improve human well-being? *Ecological Society of America Annual Meeting*, Louisville, KY, August 11-15, 2019.
- Hemingway, B.L.*, A.E. Frazier, B.R. Elbing, and J.D. Jacob. High Resolution Vertical Estimation of the Temperature Structure Parameter in the Atmospheric Boundary Layer. *International Society for Atmospheric Research using Remotely Piloted Aircraft Annual Meeting*, Lugo, Spain, July, 15-19, 2019.
- Swick, R.*, A.E. Frazier, B.L. Hemingway*, V. Natalie*, J.D. Jacob. Impacts of Land Surface Heterogeneity on Thermodynamic Variables Collected from Unmanned Aircraft Systems: Results from the 2018 LAPSE-RATE Field Campaign. *CLOUD-MAP Workshop*, Norman, Oklahoma, July 8-10, 2019. (Poster)
- Natalie, V.*, A. Estep*, R. Allamraju, D. Johnson*, B. Hemingway*, A.E. Frazier, J.D. Jacob. Atmospheric Boundary Layer Measurements using Suites of Low-Cost Actively Controlled Sondes. *CLOUD-MAP Workshop*, Norman, Oklahoma, July 8-10, 2019. (Poster)
- Natalie, V.*, R. Swick*, B. Hemingway*, A.E. Frazier, and J.D. Jacob. Unmanned Aircraft Observations of Terrain Impact on the Atmospheric Boundary Layer Evolution. *CLOUD-MAP Workshop*, Norman, Oklahoma, July 8-10, 2019. (Poster)

Kedron, P., A.E. Frazier. Land cover proportion and heterogeneity can help predict the accuracy of spatial pattern metrics after downscaling *International Association of Landscape Ecology (LALE) World Congress*, Milan, Italy, July 3-7, 2019.

Frazier, A.E., C. Hudson*, M. Honzak, K. Gaddis, C. Helder Sousa, R. Perlin*, A. Tohtsonie*, J. Junker. Detecting critical scales and fragmentation thresholds for chimpanzee habitat connectivity in Liberia. *International Association of Landscape Ecology (LALE) World Congress*, Milan, Italy, July 3-7, 2019.

Frazier, A.E. and B.L. Hemingway*. Geostatistical analysis of temperature in the boundary layer using variogram scaling exponents. *Association of Geographic Information Laboratories in Europe (AGILE) Annual Meeting*, Limassol, Cyprus, 17-20 June, 2019

Ovando Montejó, G.A.*, A.E. Frazier, P. Kedron. Comparison of spatial patterns of urban sprawl and urban configuration across Mexican and U.S. cities using spatial metrics. *Utah Geographic Information Council (UGIC) Annual Conference*, Midway, Utah, May 8, 2018

Ovando Montejó, G.A.*, A.E. Frazier, P. Kedron. Spatiotemporal and morphological analysis of urban expansion: an approach using spatial metrics. *South Central Arc User Group (SCAUG) Annual Conference*, Tulsa, Oklahoma, April 23, 2019 (Poster – Awarded 3rd place in the poster competition)

Frazier, A.E. Unmanned aircraft systems and landscape ecology: are reproducibility and replication realistic? *US-LALE Annual Meeting*, Fort Collins, Colorado, April 7-10, 2019.

Hemingway, B.L.*, A.E. Frazier, B. Elbing, J.D. Jacob. Spatial Structure of Thermodynamic Variables in the Atmospheric Boundary Layer. *American Meteorological Society Annual Meeting*. Phoenix, AZ, 6-10 January 2019.

Swick, R.*, A.E. Frazier, B.L. Hemingway*, V. Natalie*, J.D. Jacob. Impacts of Land Surface Heterogeneity on Thermodynamic Variables Collected from Unmanned Aircraft Systems: Results from the 2018 LAPSE-RATE Field Campaign. *American Meteorological Society Annual Meeting*. Phoenix, AZ, 6-10 January 2019. (Poster)

V. Natalie*, R. Swick*, B.L. Hemingway*, A.E. Frazier, J.D. Jacob. Unmanned aircraft observations of terrain impact on the atmospheric boundary layer. *American Meteorological Society Annual Meeting*. Phoenix, AZ, 6-10 January 2019. (Poster)

2018 Mathews, A.J., A.E. Frazier, S.V. Nghiem, G. Neumann, Y. Zhao*. Satellite scatterometer estimation of built-up volume: validation with airborne lidar data. *American Geophysical Union Annual Meeting*.

Mathews, A.J. and A.E. Frazier. 2018. Evaluating the accuracy of terrain data generated using the UAS-SfM workflow. *Applied Geography Conference*, Kent, OH, Nov. 1.

Thomas, A.F.*, A.E. Frazier, and A.J. Mathews. Assessing impacts of grass on vertical accuracy of digital surface models derived from UAS. *Great Plains-Rocky Mountain Division of the American Association of Geographers Annual Meeting*, October 2018, Manhattan, KS. (Poster – Awarded 1st prize in graduate student poster competition)

Mathews, A.J., A.E. Frazier, and S.V. Nghiem. Advanced geospatial methodologies for three-dimensional characterization of urban areas. *Pre-Conference Meeting of the IGU Commission on Local and Regional Development* (Hosted by Western Michigan University Department of Geography): Aug. 2, Kalamazoo, MI.

Hemingway, B.* and A.E. Frazier. Geostatistical detection of thermodynamic anisotropy in an atmospheric boundary layer using small unmanned aircraft systems. *Association of Geographic Information Laboratories in Europe (AGILE) Annual Meeting*, Lund, Sweden, 12-15 June 2018

Frazier, A.E. and B.L. Hemingway*. Unmanned aircraft systems in the atmospheric boundary layer: A new frontier for geospatial data science? *UCGIS Symposium/CaGIS AutoCarto 2018*, Madison, WI, May 22-24, 2018. (Poster)

Hemingway, B.L.*, A.E. Frazier, B.R. Elbing, and J.D. Jacob. Unmanned Aircraft Systems for Severe Weather: Determining Sampling Scales. *Oklahoma NSF EPSCoR Annual State Conference*, Oklahoma City, OK, April 24. (Poster)

Hemingway, B.L.*, A.E. Frazier, B.R. Elbing, and J.D. Jacob. Vertical Sampling Scales for Atmospheric Boundary Layer Measurements from Small Unmanned Aircraft Systems (sUAS). *American Association of Geographers Annual Meeting*, New Orleans, LA, April 10-14.

Nghiem, S.V. A.J. Mathews, A.E. Frazier, D. Balk, M.Z. Jacobson and T. Oda. Satellite observations of rural-urban change and impacts in the four-dimensional time-space continuum. *NASA Science Team meeting on SE Asia LULCC*, Hanoi, Vietnam, May 7-9, 2018.

Frazier, A.E. and K.K. Singh. A meta-analysis and review of unmanned aircraft system (UAS) imagery for terrestrial applications. *American Association of Geographers Annual Meeting*, April 10-14, 2018, New Orleans, LA

Hemingway, B.*, A.E. Frazier, B. Elbing, and J.D. Jacob. Vertical sampling scales for atmospheric boundary layer measurements using a small unmanned aircraft system (UAS). *American Association of Geographers Annual Meeting*, April 10-14, 2018, New Orleans, LA

Zhao, Y.*, P. Kedron, and A.E. Frazier. Identifying urban development patterns by integrating 2D and 3D landscape models. *American Association of Geographers Annual Meeting*, April 10-14, 2018, New Orleans, LA

Ovando Montejo, G.A.*, A.E. Frazier, and P. Kedron. Comparison of spatial patterns of urban sprawl across Mexican and U.S. cities using spatial metrics. *American Association of Geographers Annual Meeting*, April 10-14, 2018, New Orleans, LA (Poster)

Yip, C.C.*, P. Kedron, and A.E. Frazier. The relationship between wind turbines and the physical environment in Oklahoma. *American Association of Geographers Annual Meeting*, April 10-14, 2018, New Orleans, LA (Poster)

Frazier, A.E. and P. Kedron. History and Trends of Describing and Analyzing Landscape Patterns: Where are we now? *US-LALE Annual Meeting*, April 8-12, 2018, Chicago, IL.

Ovando Montejo, G.A.*, A.E. Frazier, and P. Kedron. Scale-dependency of configuration metrics in an urban hierarchy. *US-LALE Annual Meeting*, April 8-12, 2018, Chicago, IL.

Zhao, Y.*, P. Kedron, and A.E. Frazier. Developing 3D Spatial Pattern Metrics to Describe and Analyze the Urban Environment. *US-LALE Annual Meeting*, April 8-12, 2018, Chicago, IL.

Nghiem, S.V. et al. Validation of 3D urban building volume measurement from space for decadal monitoring of urbanization in 3D and assessing impacts. *NASA Land Cover Land Use Change Science Team Meeting*, April 2018, Maryland, USA.

2017 Zhao, Y.*, P. Kedron, and A.E. Frazier. Measuring Urban Patterns and Identifying Relationships with Land Use Intensity Changes. *Southwest Division of the Association of American Geographers (SWAAG) Regional Meeting*, October 25-27, Huntsville, TX

Hemingway, B.*, A.E. Frazier, B. Elbing, and J.D. Jacob. Vertical Sampling Scales for Atmospheric Boundary Layer Measurements from Small Unmanned Aircraft Systems (sUAS). *Southwest Division of the Association of American Geographers (SWAAG) Regional Meeting*, October 25-27, Huntsville, TX (Awarded 1st place in graduate student paper competition)

Yip, C.C.8, P. Kedron, A.E. Frazier, J. Wang. The impact of scale on relationships between social vulnerability and the physical environment. Southwest Division of the American Association of Geographers (SWAAG), October 25-27, 2017, Huntsville, TX. (Poster – Awarded 2nd place in undergraduate poster competition)

Frazier, A.E., T. Wikle, and P. Kedron. Exploring the Anatomy of GIS&T Textbooks. *Southwest Division of the Association of American Geographers (SWAAG) Regional Meeting*, October 25-27, Huntsville, TX

T. Fagin, J.M. Vadjunec, A.E. Frazier, and P. Kedron. Socio-ecological Effects of Recurrent and Prolonged Drought in the Southern Great Plains. Natural Areas Conference, October 10-12, 2017, Fort Collins, TX,

Nghiem, S.V. et al. Multi-Sourced Satellite Observations of Land Cover and Land Use Change in South and Southeast Asia with Challenging Socioeconomic Impacts. American Geophysical Union (AGU) Annual Meeting, December 2017, New Orleans, LA.

Frazier, A.E., P. Kedron, J. Vadjunec, and T. Fagin. People, Patterns, and Processes: A framework for linking land architecture and landscape ecology. *US-LALE Annual Meeting*, April 11, 2017. Baltimore, MD.

P. Kedron, A.E. Frazier, J. Vadjunec, and T. Fagin. Ecological relevancy in land architecture. *US-LALE Annual Meeting*, April 11, 2017. Baltimore, MD.

Y. Kwon, A.E. Frazier, and P. Kedron. Does forest fragmentation explain differences in tree species diversity in Southeastern Mixed Forest? *US-LALE Annual Meeting*, April 11, 2017. Baltimore, MD.

Frazier, A.E., P. Kedron, and J. Wang. Forest Fragmentation in the WUI: measuring land cover change through landscape and surface metrics. *US-LALE Annual Meeting*, April 11, 2017. Baltimore, MD.

Frazier, A.E. and P. Kedron. Forest Fragmentation in the WUI: a comparison of patch-based and gradient methods. *American Association of Geographers Annual Meeting*, April 7, 2017, Boston, Mass.

Invited Panelist: Unmanned Aerial Vehicles in the Geography Curriculum and Classroom. *American Association of Geographers Annual Meeting*, April 5, 2017. Boston, Mass.

Panel Organizer and Panelist: Conceptualizing the Integration of Unmanned Aerial Systems (UAS) into Geography and GIScience. *American Association of Geographers Annual Meeting*, April 7, 2017. Boston, Mass.

2016 **Frazier, A.E.**, B. Hemingway*, and A.J. Mathews. Unmanned aerial systems (UAS) and severe weather: challenges and opportunities for geographic information science (GIScience). *Southwest Division of the Association of American Geographers (SWAAG) Regional Meeting*, October 20-21, Denton, TX.

Mathews, A.J., A.E. Frazier, and S.V. Nghiem. Assessing relationships between spaceborne radar and airborne lidar in the estimation of urban built-up volume: a project overview and preliminary results. *Southwest Division of the Association of American Geographers (SWAAG) Regional Meeting*, October 20-21, Denton, TX.

Golden, K.*, B. Hemingway*, A.E. Frazier, C. Davis, S. Fuhlendorf. Using historic survey data to determine whooping crane (*Grus Americana*) habitat use patterns at Aransas National Wildlife Refuge. *Ecological Society of America Annual Meeting*, August 7-12, 2016, Fort Lauderdale, FL.

Frazier A.E. and P. Kedron. Impacts of compositional and configurational data loss on downscaling accuracy. *Spatial Accuracy 2016*, Montpellier, France, July 5-8, 2016

Kedron, P., A.E. Frazier, C. Greene, and D. Mitchell*. Curriculum Design in Upper-Level and Advanced GIS Classes: Are New Skills being Taught and Integrated? *AGIT*, July 5-8 2016, Salzburg, Austria

Mathews, A.J. and **A.E. Frazier**. Unmanned Aerial Systems for Geographic Information Science: Technology, Data, and Methods. *University Consortium for Geographic Information Science (UCGIS) Symposium*, Scottsdale, AZ, May 18-20, 2016.

Frazier, A.E. Patch vs. Gradient Paradigms: Bridging Gaps to Measure Forest Fragmentation. *U.S. Regional Association of the International Association of Landscape Ecology (US-LALE) Annual Meeting*, Asheville, NC, April 4-7, 2016

- Hemingway, B.*, A.E. Frazier, A.J. Mathews, and S.D. Fuhlendorf. Mapping Prescribed Burns in Aransas National Wildlife Refuge with Historical Landsat Imagery. *ASPRS IGTF Conference*, Fort Worth, TX, April 11-14, 2016.
- 2015 **Frazier, A.E.** and T. Wikle. What's in a Name? Factors Driving Geography Department Name Changes in the U.S. and Canada. *Southwest Division of the Association of American Geographers*, San Antonio, TX, November 4-7, 2015.
- Frazier, A.E.** Surface Metrics: Scaling Relationships and Downscaling Behavior. *International Association of Landscape Ecology (IALE) World Congress*, Portland, OR, July 5-10, 2015.
- Frazier, A.E.** A Data Aggregation Technique to Improve Landscape Metric Downscaling. *Association of American Geographers Annual Meeting*, Chicago, IL, April 21-26, 2015.
- 2014 **Frazier, A.E.** Downscaling Landscape Metrics. *U.S. Regional Association of the International Association of Landscape Ecology (US-IALE) Annual Meeting*, Anchorage, AK, May 18-22, 2014.
- A.E. Frazier.** Panel Session: Innovative Methods for Teaching GIS. *Association of American Geographers Annual Meeting*, Tampa, FL, April 8-13, 2014.
- Frazier, A.E.** and S. Bagchi-Sen. Understanding the Patterns of Land Cover Change in Shrinking Cities. *Association of American Geographers Annual Meeting*, Tampa, FL, April 8-13, 2014.
- Frazier, A.E.** and S. Bagchi-Sen. Developing Open Space Networks in Shrinking Cities. *Regional Studies Association International Meeting*, UCLA, Los Angeles, CA, December 16-18, 2014.
- 2013 **Frazier, A.E.** and J. Aldstadt. A Geospatial Spectral Method for Endmember Extraction. *Association of American Geographers Annual Meeting*, Los Angeles, CA, April 9-13, 2013
- Frazier, A.E.** and L. Wang. Modeling Landscape Structure across a Gradient of Land Cover Intensity. *US-International Association of Landscape Ecology (US-IALE)*. Austin, TX, April 14-18, 2013.
- 2012 **Frazier, A.E.** Super-Resolution Land Cover Mapping using Landscape Metrics. *Association of American Geographers Annual Meeting*, New York, NY, February 24-28, 2012. (Awarded first prize for the 2012 Remote Sensing Specialty Group Student Honors Paper Competition)
- 2011 **Frazier, A.E.** and Wang, L. Optimal Ranges to Evaluate Sub-Pixel Classifications for Landscape Metrics. *American Society for Photogrammetry and Remote Sensing Annual Meeting*, Milwaukee, WI, May 1-5, 2011
- Frazier, A.E.** and Wang, L. Evaluating sub-pixel classifications to determine saltcedar spatial patterns using a threshold approach. *Association of American Geographers Annual Meeting*, Seattle, WA, April 11-15, 2011
- Cimellaro, G.P., Renschler, C.S., Frazier, A.E., Arendt, L.A., Bruneau, M., and Reinhorn, A. The State of Art of Community Resilience of Physical Infrastructures. *2011 Structures Congress*, Las Vegas, NV, April 14-16, 2011
- Cimellaro, G.P., Renschler, C.S., Frazier, A.E., Arendt, L.A., Bruneau, M., and Reinhorn, A. Community resilience index for road network systems. *Eighth International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, Corfu, Greece, May 26-28, 2011.
- 2010 **Frazier, A.E.** and Renschler, C.S. Assessing Ecosystem Resilience of Communities against Extreme Events using Remote Sensing GPP Indicators. *Middle States Division of the Association of American Geographers Annual Meeting*, October 22-23, 2010, West Point, NY

Frazier, A.E. A Remote Sensing and GIS-based Approach to Quantitatively Assess Environmental/Ecosystem Resilience of Communities against Extreme Events. 2010. *New Zealand Geographical Society Annual Meeting*, Paper Presentation, July 5-8, Christchurch, NZ

Frazier, A.E. Using Google Earth to assess post-earthquake damage in Haiti: A global effort. 2010. *Representing Reality: Imagery in the Cognitive, Social and Natural Sciences*, Panel Presentation, GIScience Integrative Graduate Education and Research Traineeship (IGERT) Conference, May 12-15, Buffalo, NY

Frazier, A.E. An Evaluation of Invasive Species Distribution Using Remote sensing and GIS-derived Landscape Metrics. *Association of American Geographers Annual Meeting*, Washington, D.C., April 14-18, 2010

Renschler, C.S, Frazier, A.E. and Miles, S. 2010. Assessing Community Resilience: A Remote Sensing Approach to Evaluate Post-Disaster Ecosystem Recovery. *Eighth International Workshop on Remote Sensing for Disaster Management*, September 30-October 1, 2010, Tokyo, Japan

Renschler, C.S., Frazier, A.E., Arendt, L.A., Cimellaro, G.P., Reinhorn, A.M., Bruneau, M. Developing the 'PEOPLES' Resilience Framework for Defining and Measuring Disaster Resilience at the Community Scale. 2010. *Ninth U.S. National & Tenth Canadian Conference on Earthquake Engineering*, Paper Presentation, July 25-29, 2010, Toronto, Canada

TEACHING EXPERIENCE (2x = frequency)

Arizona State University

GIS 202 – From Drones to Satellites: Observing Earth from Above (online, ~30 students, 4x)

GIS 311 – Geographic Information Science III (in person, ~40 students, 1x)

GIS 311 – Geographic Information Science III (online, ~60-90 students, 7x)

GCU/GPH 394 – The Geography of Wine (online, ~30 students, 3x)

GIS 493 – Honors Thesis (in person, 1 student, 2x)

GIS 499 – Individualized Instruction (in person, 5 students, 2x)

GCU 585/PUP 724 – Research Design and Proposal Writing (in person, ~20 students, 1x)

GIS 598 – Remote Sensing and Earth Observation (in person, 15 students, 1x)

GCU 599 – Thesis (in person, 1 student, 1x)

GIS 684 – MAS-GIS Internship (1-2 students, 3x)

Oklahoma State University

GEOG 4203 – Fundamentals of GIS (in person, 24 students; 4x)

GEOG 4343/5323 - GIS: Resource Management Applications (in person, 24 students, 5x)

GEOG 4333/5333 - Remote Sensing (in person, 15-20 students, 4x)

GEOG 5000 – Thesis (in person; 1 student, 8x)

GEOG 5113 – Landscape Ecology (in person, 12 students, 2x)

GEOG 5343 – Advanced GIS: Resource Management Applications (in person, 12 students, 1x)

GEOG 6000 – Doctoral Dissertation Research (in person, 1 student, 6x)

GEOG 6333 – Advanced Remote Sensing (in person, 12 students, 1x)

GEOG 6910 – Topics in Geography (in person, 1 student, 12x)

GEOG 6930 – Readings in Geography (in person, 1 student, 12x)

The University at Buffalo

GEO 100 - Geographic Perspectives and World Issues (in person 100+ students; 2x)

OTHER RELEVANT EXPERIENCE

2021 **Wine and Spirits Education Trust (WSET)** – Level 2 Award in Wines

Wine and Spirits Education Trust (WSET) – Level 1 Award in Wines

2020-2021 **ASU Leadership Academy: PeerLA Cohort VIII.** Selected to attend this year-long series of trainings with other ASU faculty and staff emerging as leaders in university activities. LA helps

- advance the goals of the ASU Enterprise with a focus on developing leadership skills, supporting individuals in advancing impactful projects, and creating a diverse community of leaders.
- 2012-2013 **Research Assistant:** Department of Geography, University at Buffalo (Research advisor: Dr. Sharmsitha Bagchi-Sen)
- 2010 **Research Assistant:** Department of Geography, University at Buffalo, Funding Source: National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center: Community Resilience Index – A Conceptual Framework and Implementation Strategy (Research advisor: Dr. Chris Renschler)
- 2009-2010 **Research Assistant:** Multidisciplinary Center for Earthquake Engineering (MCEER), University at Buffalo, Funding Source: National Institute of Standards and Technology (NIST): A Framework for Defining and Measuring Disaster Resilience at the Community Scale (Research advisor: Dr. Chris Renschler)
- 2009 & 2010 **Occupational Trainee:** University of Queensland (Brisbane, Australia), School of Geography, Planning, and Environmental Management, Center for Center for Spatial Environmental Research (Research advisor: Dr. Stuart Phinn). (Summer 2009/2010)
- 2009 **Participant:** Vespucci Summer Institute on Geographical Information Science, Fiesole, Italy (June 2009)
- 2008 **GIS Manager:** Department of Engineering, Caln Township, Pennsylvania
- 2004-2008 **GIS Analyst:** GIS Department, Chester County, Pennsylvania
- 2002-2004 **Associate Geologist:** ENVIRON International Corporation, Princeton, New Jersey

PROFESSIONAL SERVICE

Invited Editorial Positions

- 2021-Present International Advisory Board Member – *Ecological Indicators* (Elsevier)
- 2021-Present Faculty Reviewer for *Faculty Opinions* – Spatial & Landscape Ecology Group
- 2019-Present Editorial Board Member – *Landscape Ecology* (Springer)
- 2020-2021 Editorial Board Member – *Land* (MDPI)
- 2018-2020 Editorial Board Member – *Sustainability* (MDPI)

Special Issue Editor

- 2020-2021 Guest Editor, Landscape Ecology – Special Issue: *Toward a Science of Scaling in Landscape Ecology*
- 2018-2019 Guest Editor, Journal of Land Use Science (Taylor and Francis) - Special Issue: *Linking Landscape Ecology and Land Architecture for Land Systems Science* (2019)

Leadership Roles

- 2020-present **Member: International Association for Landscape Ecology (IALE) Diversity and Inclusion Committee**
- 2019-2020 **Board of Delegates: University Consortium for Geographic Information Science (UCGIS) – Representative for Arizona State University**
- 2018-2019 **Secretary: Southwest Division of the American Association of Geographers (SWAAG) – Produced annual newsletter and helped coordinate activities for the annual meeting**
- 2017-2018 **Treasurer: Southwest Division of the American Association of Geographers (SWAAG) – Oversee budget and coordinate the student paper and poster competitions for the annual meeting.**

- 2015-2018 **Southwest Division of the American Association of Geographers (SWAAG)** – Assisted with various aspects of the 2015 regional meeting in San Antonio, TX including judging student paper competition abstracts, judging the student poster competition, and serving as a judge for the Geography Bowl.
- 2014-2017 **Board of Directors: American Society of Photogrammetry and Remote Sensing (ASPRS) – Heartland Region.** Assist with various aspects of division administration including membership, student chapters, nominations, and conference planning.
- 2012-2013 **Student Director: Association of American Geographers (AAG) Remote Sensing Specialty Group (RSSG)** - Coordinated aspects of student involvement including the 2013 RSSG-AAG student honors paper and poster competition held during the Annual Meeting in Los Angeles, CA, April 9-13, 2013.
- 2010 **Representative: GIScience NSF IGERT Annual Meeting**
Selected to represent the University at Buffalo GIScience IGERT program at the annual conference in Washington D.C., May 23-25, 2010.
- 2009-2010 **Coordinator: NSF IGERT Conference** (GIScience IGERT, University at Buffalo)
Coordinated and hosted 3-day interdisciplinary conference in Buffalo, NY: “Representing Reality: Imagery in the Cognitive, Natural and Social Sciences” which included presentations, posters and panel discussions from over 60 participants representing 20 universities and six IGERT programs

PROFESSIONAL SERVICE

- 2021-Present **NSF Human-Environment and Geographical Sciences Program** – Advisory Board. Serve on Review panels twice per year.
- 2019-2020 **NSF Geography and Spatial Sciences Program** – Advisory Board for Doctoral Dissertation Research Improvement Grants. Review proposals several times a year and serve on virtual panel.
- 2019 **NSF Coupled Natural and Human Systems (CNH2)** Panelist.
- 2013-Present **Ad Hoc Reviewer:** NSF Geography and Spatial Sciences; NSF Human-Environment and Geographical Sciences Program; NSF EPSCoR Research Infrastructure Improvement (RII) Track 4: EPSCoR Research Fellows competition

UNIVERSITY and SCHOOL SERVICE

- 2022 **Member: CLAS Search Committee:** Dean of the Social Sciences in the The College of Liberal Arts and Sciences
- 2022 **GRS Hiring Committee** – for Research Specialist Position during Summer 2022.
- 2021 **Lead: Visioning Advisory Group** – Led multi-semester effort to engage SGSUP in Visioning activity to develop school vision for the future.
- 2021 **Ad Hoc Graduate Curriculum Advisory Group** – consulted on issues surrounding mode of instruction and delivery method for graduate courses.
- 2020-2021 **Ad Hoc GIS Curriculum Advisory Group** – developed curriculum for PhD in GIScience and B.S. in Geographic Information Science
- 2020 **Internship Coordinator** – Developed internship program for SGSUP. Mentored 12 students through two separate internships during Summer 2020.
- 2019-Present **Executive Committee:** School of Geographical Sciences and Urban Planning, Arizona State University
 - Ad Hoc Hiring Committee: Spring 2021

- 2019-2020 **Graduate Committee:** School of Geographical Sciences and Urban Planning, Arizona State University
- 2019-2020 **Member: SGSUP Hiring Committee:** School of Geographical Sciences and Urban Planning, Arizona State University, Center for Global Discovery and Conservation Science
- 2018-2019 **Chair: SGSUP Hiring Committee:** School of Geographical Sciences and Urban Planning, Arizona State University, Spatial Analysis Research Center (SPARC)
- 2017-2018 **Coalition for Advanced Digital Research & Education (CADRE) Council** - Oklahoma State University
- 2017-2018 **Future Faculty Steering Committee** - College of Arts and Sciences, Oklahoma State University
- 2014-2018 **Graduate Committee** - Department of Geography, Oklahoma State University
- 2014-2018 **Faculty Advisor: Forum of Graduate Geography (FOGG)** – Department of Geography, Oklahoma State University
- 2014-2016 **B.S. in Geospatial Information Science Committee,** Department of Geography, Oklahoma State University
- 2014 **College of Arts & Sciences Curriculum Committee** – College of Arts & Sciences, Oklahoma State University
- 2013-2018 **GIS-Cartography-Remote Sensing Committee,** Department of Geography, Oklahoma State University
- 2013-2015 **Hiring Committee,** Department of Geography, Oklahoma State University
- 2013-2015 **Personnel Committee,** Department of Geography, Oklahoma State University
- 2013-2014 **Faculty Secretary: Department of Geography,** Oklahoma State University
- 2011 **Panelist: Mark Diamond Research Foundation Grant,** University at Buffalo.
- 2010-2011 **Coordinator: GIScience IGERT Colloquium,** University at Buffalo
- 2008-2012 **Member: Geography Awareness Week Planning Committee,** Department of Geography, University at Buffalo
- 2008-2010 **Treasurer: Geography Graduate Student Association,** Department of Geography, University at Buffalo

MEDIA & COMMUNITY OUTREACH

- 2021 **ABC 15 Arizona** news coverage of drone-based remote sensing work with the Lower Salt River Restoration Project. Aired August 12, 2021: <https://www.abc15.com/news/state/drones-and-a-i-hunting-down-invasive-plants-at-salt-river>
- 2017 **STEM Fair – Will Rogers Elementary School, Stillwater OK.** Developed a hands-on learning module for students in K-5 to learn about aerial imagery and scale.
- 2015-2017 **National Lab Day** - Oklahoma State University
- 2012-Present **Alumni Interviewer – Dartmouth College Admissions Ambassador Program.** Interview prospective candidates applying to the college.

GRADUATE & POST-GRADUATE SUPERVISION

Postdoctoral Scholar Supervision

- 2021-2022 Teresa Bohner (Arizona State University, NSF-funded project *Near-term Forecasts of Global Plant Distributions*)

- César Hinojo Hinojo (Arizona State University, NSF-funded project *Near-term Forecasts of Global Plant Distributions*)
- 2020-2021 Benjamin L. Hemingway (Arizona State University, NSF-funded project *Near-term Forecasts of Global Plant Distributions*)

Students Graduated as Advisor

- 2022 Hejun Quan (M.S. Geography, Arizona State University)
- 2020 Benjamin L. Hemingway (Ph.D. Geography, Oklahoma State University, Recipient of NSF DDRI Award)
Dissertation title: Geostatistical analysis of temperature structure in the atmospheric boundary layer
 Position after graduation: Postdoctoral Researcher at Arizona State University
 Current position: GIS Analyst III at RedCastle Resources, Inc. contracting for USFS
- 2019 K. Colton Flynn (Ph.D. Geography, Oklahoma State University, Fulbright Fellow to Ethiopia [2017-2018])
Dissertation title: Predicting nutrient content, plant health, and site suitability: a case study of Eragrostis tef.
 Position after graduation: Postdoctoral Researcher at Oklahoma State University
 Current position: Soil Scientist at the USDA
- Gustavo A. Ovando-Montejo (Ph.D. Geography, Oklahoma State University, CONACYT Fellow [2015-2019])
Dissertation title: Landscape examination of urban configuration through the application of spatial metrics
 Position after graduation: Postdoctoral Associate in Department of Geography, Utah State University
 Current position: Assistant Professor, Department of Geography, Utah State University (Stationed at Blanding Campus)
- 2018 Amanda F. Thomas (M.S. Geography, Oklahoma State University) – *Assessing impacts of grass on vertical accuracy of digital surface models derived from unmanned aircraft systems*
 Position after graduation: Intern, Cartography Services Lab, Oklahoma State University
- 2016 Benjamin Hemingway (M.S. Geography, Oklahoma State University) – *Mapping Prescribed Burns in Aransas National Wildlife Refuge with Historical Landsat Imagery*
 Position after graduation: Ph.D. Student, Department of Geography, Oklahoma State University
- 2015 D. Clay Barrett (M.S. Geography, Oklahoma State University) – *Monitoring Eastern Oklahoma Lake Water Quality using Landsat*
 Position after graduation: GIS Specialist, Cartography Services, Oklahoma State University
- Gustavo Ovando-Montejo (M.S. Geography, Oklahoma State University) – *Geographic Assessment of Urban Quality of Life using Socio-Economic and Environmental Factors across Mexico City*
 Position after graduation: Ph.D. Student, Department of Geography, Oklahoma State University

Students Graduated as Committee Member or MAS-GIS Capstone Advisor

- 2022 Aleksander Berg (MS, Geography, Arizona State University)
 Anastasia Stats (Capstone Advisor: MAS-GIS, Arizona State University)
 Lydia (Lian) Brugere (PhD, Geography, University of Memphis)
 Josephine Godwyll (PhD, Community Resources and Development)
- 2021 Abdulrahman Alsanad (Capstone Advisor: MAS-GIS, Arizona State University)
- 2020 Michelle Stuhlmacher (PhD, Geography, Arizona State University)
 Katherine Golden (PhD, Natural Resources and Ecological Management, Oklahoma State University)
 Arnold Chi Kedia (Capstone Advisor: MAS-GIS, Arizona State University)
 Brandi Kapos (Capstone Advisor: MAS-GIS, Arizona State University)
 Songmei Liao (Capstone Advisor: MAS-GIS, Arizona State University)
- 2019 Catherine Hudson (Capstone Advisor: MAS GIS, Arizona State University)
 Alonzo Tohtsonie (Capstone Advisor: MAS GIS, Arizona State University)
 Rebecca Perlin (Capstone Advisor: MAS GIS, Arizona State University)
 Alyssa Avery (PhD – Mechanical and Aerospace Engineering, Oklahoma State University)
- 2018 Cassondra Walker (PhD Integrative Biology, Oklahoma State University)
 Jordan Sanders (M.S. Entomology and Plant Pathology, Oklahoma State University)

- Lauren Wood (M.S. Geography, Oklahoma State University)
 Brad Rogers (PhD Biosystems and Agricultural Engineering, Oklahoma State University)
 Liang Xue (PhD Geology, Oklahoma State University)
 Stephanie Heald (PhD Geography, Oklahoma State University)
 Zelalem Demissie (PhD Geology, Oklahoma State University)
 2017 Emily Ellis (M.S. Geography, Oklahoma State University)
 Kelsey Deal (M.S. Integrative Biology, Oklahoma State University)
 2016 Andrew Katumwehe (PhD Geology, Oklahoma State University)
 2015 Siewe Siewe Siewe (PhD Geography, Oklahoma State University)
 Kathryn Wenger (M.S. Geography, Oklahoma State University)

Graduate Students Currently Advising:

- Joseph Karanja (PhD, GIScience, Arizona State University) [Co-Chair with Dr. Matei Georgescu]
 Patrick Rhodes (PhD, GIScience, Arizona State University)
 Wenxin Yang (PhD, Geography, Arizona State University) [Co-Chair with Dr. Peter Kedron]

Graduate Students Currently Advising as Committee Member or Capstone Advisor:

- Catherine Hudson (M.S., Sustainability)
 Kenzie Shandonnay (PhD, Geographical Sciences)
 Shannon Roivas (PhD, Evolutionary Anthropology)
 Megan (Megs) Seeley (PhD, Geography)

Honors Thesis Supervision

- 2021 Margaret Tueller (B.S. GIS, Arizona State University)

PROFESSIONAL MEMBERSHIPS

- 2020-Present American Geophysical Union (AGU)
 2019-2021 Ecological Society of America (ESA)
 2012-Present International Association of Landscape Ecologists – U.S. Chapter (US-IALE)
 2010-2018 American Society for Photogrammetry and Remote Sensing (ASPRS)
 2009-Present American Association of Geographers (AAG)

PEER REVIEWER

Research Proposals

National Science Foundation: CAREER; Geography and Spatial Science (GSS); Human Environment and Geographical Sciences (HEGS); Coupled Natural and Human Systems (CNH-2); Enhanced Program to Stimulate Competitive Research (EPSCoR)

Journals

- | | |
|---|---|
| Annals of the American Association of Geographers | Ecosystem Health and Sustainability |
| Applied Energy | Environmental Engineering Research |
| Biological Invasions | Environmental Processes |
| Cartography and Geographic Information Science | Environmental Research Letters |
| Cities | Environments |
| Ecohydrology | Geomatics |
| Ecological Complexity | Growth and Change: A Journal of Urban and Regional Policy |
| Ecological Indicators | Hydrologic Processes |
| Ecology and Evolution | |

International Journal of Applied Earth Observation
and Geoinformation
International Journal of Applied Geospatial Research
International Journal of Geographic Information
Science
International Journal of Remote Sensing
International Journal of Sustainable Built
Environment
ISPRS International Journal of Geo-Information
Journal of Applied Geography
Land Use Policy
Landscape and Urban Planning
Landscape Ecology
Madagascar Conservation and Development
Methods in Ecology and Evolution
PLOS ONE
Proceedings of the National Academy of Sciences
Remote Sensing
Remote Sensing Letters
Remote Sensing of Environment
Sustainability
The Canadian Geographer
The Professional Geographer
Urban Forestry and Urban Greening
Water