

CURRICULUM VITAE

Andrea E. Gaughan

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RESEARCH INTERESTS

Human-environment interactions, Earth observation and sustainable development, land systems, human population modeling, climate change, remote sensing and geospatial analysis

EDUCATION

- 2011 **University of Florida - Gainesville, FL**
Ph.D. in Geography with minor in agricultural and biological engineering
- 2006 **University of Florida - Gainesville, FL**
M.S. in Geography with minor in land change science
Interdisciplinary Certificate Geographic Information Systems
- 2003 **Furman University – Greenville, SC**
B.A. in English, with concentration in environmental studies

ACADEMIC APPOINTMENTS

- 2018-*present* **University of Louisville – Louisville, KY**
Associate Professor, Department of Geographic and Environmental Sciences
- 2013-2018 **University of Louisville – Louisville, KY**
Assistant Professor, Department of Geography and Geosciences
- July 2014 **Quality Leadership University (QLU) – Panama City, Panama**
Visiting Assistant Professor
- 2012-2013 **University of Florida – Gainesville, FL**
Postdoctoral Associate, Department of Geography and the Emerging Pathogens
Institute, Supervisor: Andy Tatem
- 2011-2012 **University of Missouri – Columbia, MO**
Postdoctoral Associate, Department of Biological Sciences, Supervisor: Ricardo M. Holdo

OTHER AFFILIATIONS

- 2020-*present* **University of Louisville – Louisville, KY**
Affiliate Faculty, Logistics and Distributions Institute (LoDI), Department of Industrial
Engineering

2015-present **University of Louisville** – *Louisville, KY*
Affiliate Faculty, Center for Geographic and Information Sciences, Department of Geographic and Environmental Sciences

2019-present **Remote Sensing (MDPI)** (Impact Factor: 4.509, 5-Year Impact Factor: 5.001 (2019))
Section Editor, Environmental Remote Sensing

2012-present **University of Southampton** – *Southampton, UK*
Affiliate, WorldPop Program

TEACHING

University of Louisville, Department of Geography and Geosciences,
Louisville, KY

Remote Sensing (GEO355 and GEO555), Advanced Remote Sensing (GEO 556), Global Environment (GEO 200), Global Environmental Change (GEOS 360), Introduction to Unmanned Aerial Systems (GEOG 390/590), Earth Observation and the Human Planet (GEOG 390), Senior Thesis (GEOG442)

Graduate Teaching, University of Florida, Department of Geography
Gainesville, FL

Remote Sensing of the Environment (GEO 4938/5134). Introduction to Physical Geography (2200L), Introduction to Climate Change (GEO 3839)

GRANTS AND AWARDS

FUNDING PENDING

NSF Human-Environment and Geographical Sciences (HEGS): *Dynamics of land function change and human mobility in agropastoral systems.* PI: Andrea Gaughan, Co-Is: Forrest Stevens (UofL), Jonathan Salerno (CSU) \$400,000 for July 2023-August 2026.

NASA ROSES. *Dynamics and Interactions of Land Cover, Land Use, and Demography under Transformative Change across the Rural-Urban Continuum in Southeast Asia.* PI: Son Nghiem Co-Is: Andrea Gaughan, Forrest Stevens, Deborah Balk, Christopher Small, Adam Mathews. UofL sub-contract: \$560,000 for July 2023 – August 2026.

NSF Dynamics of Integrated Socio-Environmental Systems (DISES): *Dynamics and Feedbacks in Land Consumption, Emissions, and Demography across the Urban-Rural Continuum of Sub-Saharan Africa.* PI: Andrea E. Gaughan, Co-PI: Forrest R. Stevens, Deborah Balk, Nikhil Kaza, and Son Nghiem. \$1,600,000 for August 2022 – July 2025.

FUNDING AWARDED

Kentucky Water Resources Research Institute (USGS): *It's not easy being green: rapid assessment of wetland carbon source-sink status through remote sensing.* PI: Andrea Gaughan, Co-I: Andrew Mehring. \$20,000 for **September 1, 2022 – August 31, 2023.**

NSF Human-Environment and Geographical Sciences (HEGS): *Adaptive Human Migration in Changing Environments: Using Recent Empirical Patterns to Inform Forecasts Under Climate and Socioeconomic Futures.* PI: Jonathan Salerno, Co-PI: Andrea E. Gaughan, Joel Hartter, Jeremy Diem, Lori Hunter. \$400,000 for July 2021 – June 2024 (UofL: \$45,000).

NSF EarthScope. PI: Jafar Hadizadeh (University of Louisville), Co-PI: Andrea Gaughan (University of Louisville). *Learning from core samples outside the SAFOD active creep zones: A study of*

Microstructural processes leading to current and past aseismic creep in central San Andreas Fault.
\$322,000 for September 2018-August 2021.

NASA GEO Addendum PI: Robert Chen (Columbia University), Co-PI: Andrea Gaughan, Forrest Stevens (University of Louisville), Charles Huyck (ImageCAT). *Population and Infrastructure on Our Human Planet: Supporting Sustainable Development through Improved Spatial Data and Models for Human Settlements, Infrastructure, and Population Distribution Based on Earth Observations.* Sub-contract, University of Louisville, \$45,000 for July 2020-July 2021.

NASA GEO. PI: Robert Chen (Columbia University), Co-PI: Andrea Gaughan, Forrest Stevens (University of Louisville), Charles Huyck (ImageCAT). *Population and Infrastructure on Our Human Planet: Supporting Sustainable Development through Improved Spatial Data and Models for Human Settlements, Infrastructure, and Population Distribution Based on Earth Observations.* Sub-contract, University of Louisville, \$95,000 for January 2018-December 2020.

NASA ROSES. PI: Son Nghiem (NASA JPL), California Institute of Technology. Co-Is: Andrea Gaughan, Forrest R. Stevens (University of Louisville). *Land Use Status, Change and Impacts in Vietnam, Cambodia and Laos.* September 2017 – August 2020. Sub-contract, University of Louisville \$202,491. for May 2018 – April 2021.

Facebook's Research Academic Relations Program. PIs: Andrea Gaughan and Forrest Stevens. Population distribution modeling. May 2018. \$60,000.

NSF Geography and Spatial Science (GSS): Change and Adaptation in Southern Africa: Climate and Land Systems Dynamics of the Kavango-Zambezi Transfrontier Conservation Area. PI: Andrea Gaughan, Co-I: Narcisa G. Pricope, Forrest Stevens, and Joel Hartter. \$325,000 for May 2016 – April 2019.

Bill and Melinda Gates Foundation: Global high resolution population denominators. PI: Andrew Tatem (University of Southampton), Co-I: Andrea E. Gaughan (University of Louisville), Forrest R. Stevens (University of Louisville), Greg Yetman (Columbia University). \$2,321,000 for January 2016 - December 2018. Sub-contract, University of Louisville: \$440,867.

World Bank. Research funding for producing Argentina population maps. Co-Is: Andrea Gaughan, Forrest R. Stevens. \$10,873, May – August 2014.

Google Earth Engine Research Award: Advanced population modeling across Africa, Asia and Latin America to incorporate urban spatial dynamics. PI: Andrea Gaughan. \$68,000 for Aug 2014 – Aug 2015.

Research Incentive Grants, Project Completion Grant: Detecting long-term vegetation trends by adjusting for seasonality in a savanna landscape. PI: Andrea Gaughan. \$4,000 for May-June 2014.

Faculty Professional Small Grant Development Program, Exelis workshop: Integrating IDL with ENVI, \$630 for November 2013.

OTHER AWARDS

University of Louisville, Student Champion, **2021, 2022**

Victor A. Olorunsola Endowed Research Award for Young Scholars, 2017 (\$2,000)

Delphi Center for Teaching and Learning, Faculty Favorite, 2014-2015

Delphi Center for Teaching and Learning, Faculty Favorite, 2013-2014

Dissertation Dissemination Award (NSF IGERT: No. 0504422): (\$13,000), 2012

Integrative Graduate Education and Research Fellow (IGERT) NSF Fellowship (\$60,000 + tuition), 2006-2010

Competitive Travel grants from: Land Use Environmental Change Institute, Graduate Student Council, and the Geography Department (\$250-500), 2005-2010

Graduate School Dissertation Award (\$5,000), 2010

Ecological Society of America travel grant (NSF grant DEB-0939500) (\$2,000), 2010

Center for African Studies Travel Grant (\$250), 2009

Madelyn M. Lockhart Award (\$1,000), 2008

Center for African Studies Field Research Grant (\$1,000), 2008
Working Forests in the Tropics Field Research Grant (\$3,000), 2008
Hipp Award (Travel award for research on humpback whales, Maui, HI) (\$1000), 2001

CONTRIBUTIONS TO FUNDED AWARDS

The U.S. Agency for International Development (USAID) through its Partnerships for Enhanced Engagement in Research (PEER) program; Livelihood Change in the Context of Community Conservation – Chobe, Botswana award. PI: Lin Cassidy (University of Botswana); Co-PI: Andrea Gaughan (U Louisville), Narcisa Pricope (UNCW), and Jon Salerno (Colorado State U). Amount awarded: \$74,405, 2021-2024.

NASA Land Cover/Land Use Change: Understanding and Predicting the Impact of Climate Variability and Climate Change on Land-Use/Land-Cover Change Via Socio-Economic Institutions in Southern Africa (\$870,000), non-PI researcher and co-author. 2009-2012.

NSF START PACOM: Landscape processes and biodiversity change along the Kwando River in Caprivi, Namibia(\$15,000), non-PI researcher and co-author, 2008-2009.

STUDENT PROJECTS ADVISED

GRADUATE

Current (Masters)

- Zach Meyers, Human migration and environmental drivers in Tanzania
- Md Jakirul Islam Jony Prothan, Land use and Population Dynamics – Bangladesh and Louisville
- David Brown, Remote sensing calibration of small wetland ponds
- Michelle Montalvo-Jourdan (committee member, Anthropology)

Current (PhD)

- Mark Tierney (Biology, committee member)

Graduated

- Grace Embree, Remote Sensing Application of Vegetation Phenological Characteristics in Kentucky Wildlands (2022)
- Ariel Weaver, Land Use and Natural Resource Management in Zambezi, Namibia (Fulbright Scholar) (2021)
- Jacob Ray (Anthropology major, committee member, GIS Predictive Modelling in the Daniel Boone National Forest: Settlement Patterns in the Advent of Horticulture (2021)
- Laura Krauser (co-advised with Stevens, F.R.), Changing Agricultural Landscapes: An Investigation of Dragon Fruit Production in Southern Vietnam (2020).
- Elliot Holmes (committee member), Digital Modeling of Core Billets for GIS-based Analysis of Deformation Microstructures in SAFOD Samples (2020)
- Nick Kolarik (co-advised with Stevens, F.R.), A multi-plot assessment using a micro-unmanned aerial system (UAS) in a semiarid environment (2019).
- Fennis (Philip) Reed (co-advised with Stevens, F.R.), Adaptations of Dasyetric Process within WorldPop Distribution Estimates (2018)
- Jeremy Sandifer, Remotely-Sensed Heat: Variation and Change in Surface Urban Heat Islands in a Temperate Eco-region of the United States (2017)
- Fernando Caixeta, Evaluation of MESMA applied to multispectral images for mapping land cover in southern Africa's savanna (2016)
- Jeremiah Nieves (co-advised with Stevens, F.R.), Global Population Distributions and the Built Environment: Deriving a Reduced Covariate Set for Spatial Population Modeling (2016)

UNDERGRADUATE THESES ADVISED

- Megan George. **2021-2022**. Comparison of remotely-sensed indices for chlorophyll proxies in wetland sites.
- Jacob Foushee (Honors Thesis). **2021-2022**. Multi-decadal analysis of remotely sensed vegetation change in Berea College Forest: Seasonality of forest patterns using Landsat imagery.
- Emma Scuffle. **2020-2021**. Varying Estimates of Population at Risk in Low Elevation Coastal Zones: A South Florida Analysis.
- Natalie Quisenberry. 2018-2019. An Analysis of Rural Livelihood Patterns for a Transboundary Conservation Area in Southern Africa.
- Liam Resner (Honors Thesis). 2018-2019. Long-term patterns in remotely-sensed vegetation productivity for a transboundary conservation area in southern Africa
- Austin Land (Thesis). 2017-2018. Examination of spatiotemporal precipitation patterns for 9 districts in Nepal.
- Group thesis (co-advisor). 2016-2017. Hans van Hamburg, Madison North, Lauren Redden, Aaron Sexton: Ecohydrologic factors and their association to ENSO: The Guadalupe watershed, Texas.
- Group thesis (co-advisor). 2016-2017. Karsen Woods, Claire Taxes, Morgan Cooper: Predictive modeling of wildlife frequency in the Kavango Zambezi Transfrontier Area.
- Laura Krauser (Honors Thesis). 2015-2016. The State of Tobacco: A Case Study of Kentucky Farmers' Response to the Tobacco Transition Payment Program, and Remote Sensing Analysis of Land Cover Change
- Jeremy Kurtz. 2015-2016. The Relationship between ENSO and Annual Precipitation on the Crop Yield of the Southeastern United States from (1980-2010)
- Sarah Baer. 2014-2015. The Effectiveness of Wildlife Corridors in the Zambezi Region of Namibia.
- Ariel Weaver. 2014-2015. An Object-Based Spatio-Temporal Analysis of Land Cover Change in the Zambezi Region of Namibia, 1990-2014
- Ryan Madden. 2013-2014. The Zambezi Region, Namibia Late Season Fire Change with MODIS Active Fire Products (2000-2013).
- Mattius Wolter. 2013-2014 Using remote sensing to link environmental variables with malaria infection in Haiti.

UNDERGRADUATE SUMMER RESEARCH OPPORTUNITY PROGRAM (SROP) ADVISED

- Laura Krauser, 2015. The State of Tobacco: A Case Study of Kentucky Farmers' Response to the Tobacco Transition Payment Program, and Remote Sensing Analysis of Land Cover Change
- Isaiah Kingberry, 2017. ENSO and southern African rainfall variability.
- Jacob Foushee, **2021**. Pyrophytic Tree Classification in Berea Forest using Unmanned Aerial Systems
- Hinzee Smith, **2021**, Management of the Berea College Forest: Changes Over the Past Century

REFEREED PUBLICATIONS

IN REVIEW (*student, *post-doctoral researcher)

Salerno, J., **Gaughan, A.E.**, Warriar, R, Boone, R. Stevens, F., Keys, P., Mangewa, L.J., Mombo, F., De Sherbinin, A.M., Hartter, J., and L Hunter. Rural migration under climate and land systems change. Submitted to *Nature Sustainability*.

Cassidy, L., Pricope, N.G., Salerno, J., Stevens, F.R., Hartter, J., Murray-Hudson, M., and **A.E. Gaughan**. How has CBNRM impacted household-level economic wellbeing and adaptive capacity in rural Chobe Enclave, Botswana's flagship project area. Submitted to *Ecology and Society*.

Stevens, F. R., Gaughan, A. E., Salerno, J., Pricope, N., Cassidy, L., Bailey, K., Hartter, J. H., Drake, M., Weaver, A., Kolarik, N., Maseka, H., Mosimane, A. (2022) Models and measures of household vulnerability and food security across a southern African, semiarid land system. Submitted to *Journal of Land Use Science*.

PUBLISHED (*student, †post-doctoral researcher)

Thomson, D.R., Stevens, F.R., Chen, R., Yetman, G., Sorichetta, A., **Gaughan, A.E.** 2022. Improving the accuracy of population estimates in cities and slums to monitor SDG 11: Evidence from a simulation study in Namibia. *Land Use Policy*. Vol 123: 106392. <https://doi.org/10.1016/j.landusepol.2022.106392>

Gaughan, A.E., Kolarik*, N.E., Stevens, F.R., Pricope, N.G., Woodward*, K., Cassidy, L., et al., 2022. Using Very High Resolution Multispectral Classification to Estimate Savanna Fractional Vegetation Components. *Remote Sensing*, 14(3), 551: <https://doi.org/10.3390/rs14030551>

Salerno., J., Stevens, F.R., **Gaughan, A.E.**, Bailey, K., Bowles, T., Cassidy, L., Pricope, N., and J. Hartter. 2021. Wildlife impacts and changing climate pose compounding threats to human food security. *Current Biology*. 31 (22). pp. 5077-5085. <https://doi.org/10.1016/j.cub.2021.08.074>

*Krauser, L.E., Stevens, F.R., **Gaughan, A.E.**, Nghiem, S.V., Thy, P.T.M., Duy, P.T., and L.T. Chon. An Investigation of Land Use Dynamics for Dragon Fruit Production in Bình Thuận Province. 2021. *Annals of the American Association of Geographers*.

Tulholske, C., **Gaughan, A.E.**, Sorichetta, A., de Sherbinin, A., Bucherle, A., Hultquist, C., Stevens, F., Kruczkiewicz, A., Huyck, C., and G. Yetman. 2021. Implications for Tracking SDG Indicator Metrics with Gridded Population Data. *Sustainability*. 13(13): 7329. <https://doi.org/10.3390/su13137329>

Thomson, D.R., **Gaughan, A.E.**, Stevens, F.R., Yetman, G., Elias, P., and R. Chen. Evaluating the Accuracy of Gridded Population Estimates in Slums: A Case Study in Nigeria and Kenya. 2021. *Urban Science*. 5(2), 48; <https://doi.org/10.3390/urbansci5020048>

*Holmes, E.M., **Gaughan A.E.**, Biddle, D.J., Stevens, F.R., and J. Hadizadeh. Geospatial management and analysis of microstructural data from San Andreas Fault Observatory at Depth (SAFOD) core samples. 2021. *International Journal of Geo-Information*. <https://doi.org/10.3390/ijgi10050332>

Nieves, J.N., Bondarenko, M., Kerr, D., Ves, N., Yetman, G., *Sinha, P., Clarke, D., Sorichetta, A., Stevens, F.R., **Gaughan, A.E.**, and A.J. Tatem. 2021. Measuring the contribution of built-settlement data to global population mapping. *Social Science and Humanities Open*. <https://doi.org/10.1016/j.ssaho.2020.100102>

*Woodward, K., Pricope, N.G., Stevens, F.R., **Gaughan, A.E.** *Drake, M., Bailey, K., Salerno, J., Cassidy, L., *Kolarik, N., and J.Hartter. 2020. Modeling Community Land Use in a Transboundary Southern African Landscape: Integrating Remote Sensing and Participatory Mapping. *Remote Sensing*. <https://doi.org/10.3390/rs13040631>

Hoell, A., **Gaughan, A.E.**, Magadzire, T., Harrison, L. 2021. The Modulation of Daily Southern African Precipitation by the El Niño Southern Oscillation Across the Summertime Wet Season. *Journal of Climate*. <https://doi.org/10.1175/JCLI-D-20-0379.1>

- Drake*, M.D., Salerno, J., Langendorf, R., Cassidy, L., **Gaughan, A.E.**, Stevens, F.R., Pricope, N.G., Hartter, J. The costs of elephant crop depredation exceed the benefits of trophy hunting in a community-based conservation area of Namibia. **2021**. *Conservation Science and Practice*.
<https://doi.org/10.1111/csp2.345>
- Bailey, K., Drake, M., Salerno, J., Cassidy, L., Gaughan A.E., Stevens, F., Pricope, N., *Woodward, K.G., Luwaya, H.M., Hartter, J. **2020**. Mapping Natural Resource Collection Areas from Household Survey Data in Southern Africa. *Applied Geography*. <https://doi.org/10.1016/j.apgeog.2020.102326>
- Nieves, J.J., Bondarenko, M., Sorichetta, A., Stelle, J.E., Kerr, D., Carioli, A., Stevens, F.R., **Gaughan, A.E.**, and A.J. Tatem. **2020**. Predicting Near-Future Built-Settlement Expansion Using Relative Changes in Small Area Populations. *Remote Sensing*. 12(10): 1545. <https://doi.org/10.3390/rs12101545>
- Salerno, J., **Gaughan, A.E.**, Stevens, F.R., Drake*, M.D., Cassidy, L., Pricope, N., Hartter, J. **2020**. Widespread consequential impacts on human food security from conflicts with wildlife. *Conservation Biology*. <https://doi.org/10.1111/cobi.13480>
- Kolarik, N.E., **Gaughan, A.E.**, Stevens, F.R., Pricope, N.G., Woodward, K., Cassidy, L., Salerno, J., Hartter, J. **2020**. A Multi-plot Assessment of Vegetation Structure Using a Micro-Unmanned Aerial System (UAS) in a Semi-Arid Savanna Environment. *ISPRS Journal of Photogrammetry and Remote Sensing*. 164. pp. 84-96.
<https://doi.org/10.1016/j.isprsjprs.2020.04.011>
- Nieves, J.N., Sorichetta, A., Linard, C., Bondarenko, M., Steele, J.E., Stevens, F.R., **Gaughan, A.E.**, Carioli, A., Clarke, D., Esch, T., and A.J., Tatem. **2020**. Annually modeling built-settlements between remotely Sensed observations using relative changes in subnational populations. *Computers, Environment and Urban Systems*. 80, 101444. <https://doi.org/10.1016/j.compenvurbsys.2019.101444>
- Onda, K., *Sinha, P., **A. E. Gaughan**, F.R. Stevens and N. Kaza. 2019. The missing millions: Undercounting urbanisation in India. *Population and Environment*. 41 (2), 126-150.
- Pricope, N., Cassidy, L., Salerno, J.D., **Gaughan, A.E.**, Stevens, F.R., Hartter, J., Drake, M. 2019. Addressing Integration Challenges of Interdisciplinary Research in Social-Ecological Systems. *Society and Natural Resources*. <https://doi.org/10.1080/08941920.2019.1680783>
- Kugler, T.A., Grace, K., Wrathall, D.J., de Sherbinin, A., Van Riper, D., Aubrecht, C., Comer, D., Adamo, S.B., Cervone, G., Engstrom, R., Hultquit, C., **Gaughan, A.E.**, Linard, C., Moran, E., Stevens, F., Tatem, A.J., Tellman, B., Van Den Hoek, J. 2019. People & Pixels 20 years later: The current data landscape and research trends blending population and environmental data. *Population and Environment*. DOI: 10.1007/s11111-019-00326-5
- Stevens, F. R., **Gaughan, A. E.**, *Nieves, J. J., *King, A., Sorichetta, A., Linard, C., Tatem, A. J. 2019. Comparison of the use of global built land cover datasets in human population mapping. *International Journal of Digital Earth*. doi.org/10.1080/17538947.2019.1633424
- Gaughan, A.E.**, Oda, T., Sorichetta, A., Stevens, F.R., Bondarenko, M., Bun, R., *Krauser, L., Yetman, G., Nghiem, S.V. 2019. Evaluating nighttime lights and population distribution as proxies for mapping anthropogenic CO2 emissions in Vietnam, Cambodia, and Laos. 2019. *Environmental Communication Letters* 1:9 091006.

Leyk, S., **Gaughan A.E.**, Adamo, S.B., de Sherbinin, A., Balk, D., Freire, S., Rose, A., Stevens, F.R., Blankespoor, B., Frye, C., Comentz, J., Sorichetta, A., MacManus, K., Pistolessi, L., Levy, M., Tatem, A.J., and M. Pesaresi. 2019. The Spatial Allocation of Population: A Review of Large-Scale Gridded Population Data Products and Their Fitness For Use. *Earth System Science Data*. 11, 1185-1409.

Gaughan, A.E., Stevens, F.R., Pricope, N., Hartter, J., Cassidy, L., and J.D. Salerno. 2019. Operationalizing Vulnerability: Land System Dynamics in a Transfrontier Conservation Area. *Land*. 8(7), 111; <https://doi.org/10.3390/land8070111>

*Kolarik, N.E., Ellis, G., **Gaughan, A.E.**, and Stevens, F.R. 2019. Seasonal Differences in Tree Crown Delineation Using Multispectral UAS Data and Structure from Motion. *Remote Sensing Letters*.

Gaughan, A.E., Oda, T., Sorichetta, A., Stevens, F.R., Bondarenko, M., Bun, R., *Krauser, L., Yetman, G., Nghiem, S.V. 2019. Evaluation of Gridded CO2 Emissions from Night-Time Lights Compared with Geospatially-Derived Population Distributions for Vietnam, Cambodia, and Laos. IGARSS 2019-2020 *IEEE International Geoscience and Remote Sensing Symposium*.

Stevens, F.R., Reed, F., **Gaughan, A.E.**, Sinha, P., Sorichetta, A., Yetman, G., Tatem, A.J. 2019. How Remotely Sensed Built Areas and Their Realizations Inform and Constrain Gridded Population Models. IGARSS 2019-2020 *IEEE International Geoscience and Remote Sensing Symposium*.

Lloyd, C., Chamberlain, H., Kerr, D., Yetman, G., Pistolessi, L., Stevens, F.R., **Gaughan, A.E.**, Nieves, J.N., Hornby, G., MacManus, K., *Sinha, P., Bondarenko, M., Sorichetta, A., and A.J. Tatem. 2019. Global spatio-temporally harmonized datasets for producing high-resolution population denominators. *Big Earth Data*.

*Sinha, P., **Gaughan, A. E.**, Stevens, F. R, Nieves, J. J., Sorichetta, A., and Tatem, A. J. 2019. Assessing the Spatial Sensitivity of Training Data Sampling in Statistical and Dasymmetric Gridded Population Modeling. *Computers, Environment and Urban Systems*. <https://doi.org/10.1016/j.compenvurbsys.2019.01.006>

*Reed, F., **Gaughan, A. E.**, Stevens, F. R., Yetman, G., Sorichetta, A., and Tatem, A. J. 2018. Gridded Population Maps Informed by Different Built Settlement Products. *Data*. 3(3), 33; <https://doi.org/10.3390/data3030033>

*Nieves, J.N., Stevens, F.R., **Gaughan A.E.**, Linard, C., Sorichetta, A., Hornby, G., Patel, N.N. and A.J. Tatem. Global Population Distributions and the Environment: Discerning Global and Regional Patterns. 2017. *Journal of the Royal Society Interface*. 14 (137). DOI: 10.1098/rsif.2017.0401

Hoell, A. **Gaughan, A.E.**, Shukla, S., and T. Magadzire. The Hydrologic Effects of Synchronous El Niño Southern Oscillation and Subtropical Indian Ocean Dipole Events over Southern Africa. 2017. *Journal of Hydrometeorology*. <https://doi.org/10.1175/JHM-D-16-0294.1>

Pezzulo, C., Hornby, G.M., Sorichetta, **A.E., Gaughan, A.E.**, Linard, C., Bird, T.J., and A.J. Tatem. 2017. Subnational mapping of dependency ratios and their interactions with economic output in Africa And Asia. *Scientific Data*. doi: [10.1038/sdata.2017.89](https://doi.org/10.1038/sdata.2017.89)

Linard, C., Sang, G., Kabaria, C.W., Gilbert, M., Tatem, A.J., **Gaughan, A.E.**, Stevens, F.R., Sorichetta, A., Noor, A.M., and R.W. Snow. 2017. Modelling changing population distributions: an example of the Kenyan Coast, 1979–2009, *International Journal of Digital Earth*, DOI: 10.1080/17538947.2016.1275829

Patel, N.N., Stevens, F.R., Huang, Z., **Gaughan, A.E.**, Elyazar I., and A.J. Tatem. Improving large area population mapping using geotweet densities. 2017. DOI: 10.1111/tgis.12214 *Transactions in GIS*. DOI: 10.1111/tgis.12214

Jia, P. and **Gaughan, A.E.** 2016. Dasytetric Modeling: A Hybrid Approach Using Land Cover and Tax Parcel Data for Mapping Population in Alachua County, Florida. *Applied Geography*. 6: 100-108.

Gaughan, A.E., Stevens, F.R., Huang, Z., *Nieves, J., Sorichetta, A., Lai, S., Ye, X., Linard, C., Hornby, G., Hay, S.I., Yu, H., and A.J. Tatem. 2016. Spatiotemporal patterns of population in mainland China, 1990 to 2010. *Scientific Data (Nature)*. 3: 160005. doi:10.1038/sdata.2016.5

Thanapongtharm, W., Linard, C., Chinson, P., Kasemsuwan, S., visser, M., **Gaughan, A.E.**, Epprech,, M., Robinson, T. and M.G. Gilbert. 2016. Spatial distribution and characteristics of pig farming in Thailand. *BMC Veterinary Research*.

Sorichetta, Al., Hornby, G.M., Stevens, F.R., **Gaughan, A.E.**, Linard, C., and Tatem, A.J. High-Resolution Gridded Population Datasets for Latin America and the Caribbean in 2010, 2015 and 2020. 2015. *Scientific Data (Nature)*. 2: 150045. doi: 10.1038/sdata.2015.45

Gaughan, A.E., Staub, C., Hoell, A., *Weaver, A., and P.R. Waylen. 2015. Inter and Intra-annual precipitation variability and associated relationships to ENSO and the IOD in southern Africa. *International Journal of Climatology*. DOI: 10.1002/joc.4448

Pricope, N., **A.E. Gaughan**, A.C. Sosnowski, J.S. All, Binford, M.W., and L.P. Rutina. 2015. Spatio-temporal analysis of vegetation dynamics in relation to shifting inundation and fire regimes in a southern African transboundary watershed. *Land (4)*: 627-655; doi:10.3390/land4030627.

Schneider, A., C.M, Mertes, A.J., Tatem, B. Tan, D. Sulla-Menashe, S.J., Graves, N.N. Patel, J.A. Horton, **A.E. Gaughan**, J.T. Rollo, I.H. Schelly, F.R. Stevens, and A. Dastur. 2015. A new urban landscape in East Asia, 2000-2010. *Environmental Research Letters*. 10(3): 034002.

Stevens, F.R., **A.E. Gaughan**, C. Linard, and A.J. Tatem. 2015. Disaggregating census data for population mapping using Random Forests with remotely-sensed and other ancillary data. *PloS one* 10(2): e0107042.

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Jia, P., Qui, Y., **Gaughan, A.E.** 2014. A fine-scale spatial population distribution on the high-resolution gridded population surface in Alachua County, Florida. *Applied Geography*.
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OTHER PUBLICATIONS

Gaughan, A.E., Pricope, N., Venne, L. 2014. Biophysical drivers of ecosystem variability in southern Africa. Ch. 5 in *A Systems Approach to Natural Resource Management in Southern Africa*. Brown, Mark (editor). University of Florida.

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Langanke, Tobias, Rasmus Fensholt, Kjeld Rasmussen, Anette Reenberg, Stephen D. Prince, Bob Scholes, Compton Tucker, Quang Bao Le, Alberte Bondeau, Ron Eastman, Howard Epstein, **Andrea E. Gaughan**, Ulf Hellden, Cheikh Mbow, Lennart Olsson, Jose Paruelo, Christian Schweitzer, Jonathan Seaquist, Konrad Wessels (2012). Global dryland greenness. Trends, drivers and policy implications. GLP Report No. 6. GLP-IPO, Copenhagen.

Gaughan, A.E., F. R. Stevens, C. Gibbes, J. Southworth, E. Keys, B. Child, P. Waylen, G. Kiker, R. Muñoz-Carpena, M. W. Binford. 2009. "Climate, land-use/land-cover change and institutional response: A multi-scalar approach to human environment interactions in southern Africa." Global Land Project Newsletter.

Gaughan, A.E. 2006. Spatial and temporal land-cover transformation in the Angkor basin: A changing landscape in Cambodia, 1989-2005. M.S. thesis, University of Florida.

WEBINARS

CIESIN PERN [Cyberseminar](#): Application of Gridded Population and Settlement Products in Geospatial Population-Environment Research. Andrea Gaughan, Moderator. 14 October 2019 to 18 October 2019

SDSN TReNDS [Webinar](#): "Debate: How can we leverage population data in a time of crisis?" May 19th, 2020, 2:30 pm. Panelists: Jessica Espey, director of SDSN TReNDS, Alex de Sherbinin, Associate Director CIESIN, **Andrea Gaughan**, Associate Professor at University of Louisville, and Idris Jega, Assistant Director for Strategic Space Applications Department and Nigeria's NSRDA.

NASA LCLUC SARI [Webinar](#): "Land Use Status, Change and Impacts in Vietnam, Cambodia, and Laos. May 28th, 2020. 11:00 am. Panelists: Son Nghiem, NASA Jet Propulsion Laboratory (JPL), **Andrea Gaughan** (University of Louisville), and Forrest Stevens (University of Louisville).

STORYMAPS

KAZAVA Project (NSF GSS #1560700)

[Story Map Collection](#)

Provides an overview of the NSF-funded KAZAVA project with individual narratives for various components of the project. The interdisciplinary project studied how livelihoods, land use, and the environment are changing in the Kavango-Zambezi Transfrontier Area of Southern Africa. **Online: October 1, 2020**

Accepted in the ESRI Living Atlas of the World, **January 2022** ([link](#))

EO4SDG – SDG 11 Case Studies

Gaughan, A.E. Evaluating the Accuracy of Gridded Population Estimates

Measuring Progress of SDG 11.1.1 in Nigeria and Kenya slum contexts. Online: **January 2021**, [Story Map](#)

Thomson, D.R., and Gaughan, A.E. Gridded Population and the 2030 Agenda. Online: **July 2021**, [Story Map](#)

DATA AND SCRIPTS

Bondarenko, Maksym, Nieves, Jeremiah, Stevens, Forrest, Gaughan, Andrea, Jochem, Warren, Kerr, David and Sorichetta, Alessandro (**2021**) popRF: Random Forest-informed Population Disaggregation R package. University of Southampton [doi:10.5258/SOTON/WP00715](https://doi.org/10.5258/SOTON/WP00715) [Dataset]

PRESENTATIONS

INVITED

Gaughan, A.E., "Human Relationships with our Natural Environment." NASA Strategic Leadership Course, John C. Stennis Space Center, Gulfport, MS, **April 6, June 15, and August 17, 2022**.

Gaughan, A.E., "Land use, livelihoods, and environmental change for a transfrontier conservation landscape in southern Africa" Winter Seminar Series on "Environmental Science in Practice," Department of Environmental Science and Management at Portland State University. Zoom, **3 February 2022**.

Gaughan, A.E. "Intersections of People and Pixels: Mapping Linkages to Environmental Change." School of Geography and Development, University of Arizona's Colloquium series. Tuscon, AZ, 25 Oct 2019.

Gaughan, A.E., A. Sorichetta², F. Stevens¹, G. Yetman⁴, C. Linard³, M. Bondarenko², et al., "High Resolution Gridded Population Modeling: Spatiotemporal Methodological Considerations for Applications in Land Cover and Land Use Change." Land Use Status, Change and Impacts in Vietnam, Cambodia and Laos, International Science Team Meeting, Ho Chi Minh, Vietnam, 16-18 July 2019

Gaughan, A.E., "Multiscale Remote Sensing Applications in Dryland Environments." Biology Department, UofL, 30 Nov 2018.

Gaughan, A.E., Stevens, F.R., Sorichetta, A., Nghiem, S., and Tatem, A.J. "High Resolution Gridded Population Modeling: Spatiotemporal Methodological Considerations for Applications in Land Cover and Land Use Change." Land Use Status, Change and Impacts in Vietnam, Cambodia and Laos, International Science Team Meeting, Hanoi, Vietnam, 7-11 May 2018.

Gaughan, A.E., Linard, C., Stevens, F.R., Tatem, A.J. 2018 Remote Sensing and Gridded Population Data: Considerations for Population-Environment Research Community for a Cyber Seminar entitled, "People and Pixels Revisited: 20 years of progress and new tools for population-environment research." 20 February 2018 to 27 February 2018.

Gaughan, A.E., Stevens, F.R, Tatem, A.J., Sorichetta, A, and C. Linard. People in Pixels: Gridding the World's Population. Presented at the American Geophysical Union, New Orleans, LA. 12 December, 2017.

Gaughan, A.E. Land Systems Dynamics, Vulnerability and Adaptation in a Transfrontier Conservation Area. Presented at the University of Kentucky, Department of Plant and Soil Sciences, Lexington, KY. 20, October 2017.

Gaughan, A.E., Stevens, F.R., King, A., Tatem, A.J., Sorichetta, A., Hornby, G., Nieves, J., and C. Linard. Spatiotemporal Population Modeling and the Built Environment. Presented at SciDataCon, Denver, CO. 12 September, 2016.

Gaughan, A.E. Global Environmental Change: Remote Sensing and Geospatial Analyses. Presented in the Department of Geography and Geosciences, University of Louisville. 12, March 2013. Louisville, KY.

Gaughan, A.E. Global Environmental Change: Geospatial Techniques and their Applications. Presented in the Department of Earth Sciences, University of Memphis. 28, January 2013. Memphis, TN.

Gaughan, A.E., Remote Sensing and African Savannas. Presented at the Division of Biological Sciences Seminar. Columbia, MO. 1, March 2011.

Parent ,G, **Gaughan, A.E.**, Cathey, A., Wojcik, D. Kanapaux B. and Muller, S. Living with thirst. A video documentary presented at the Ecological Society of America. 4, August 2010. Pittsburgh, PA.

(Part I -<http://www.youtube.com/watch?v=R5NXokdb78A> ,

Part II -<http://www.youtube.com/watch?v=HX0i1-ulzU>)

Gaughan, A.E. Climate-land interaction in the Okavango-Kwando-Zambezi catchment of southern Africa. Presented at the Water, Wetlands, and Watersheds seminar, University of Florida. January 12, 2011.

INTERNATIONAL

Gaughan, A.E., Oda, T., Sorichetta, A., Stevens, F.R., Krauser, L., Yetman, G., Bun, R., Bondarenko, M. and Nghiem, S.V. Evaluation of gridded CO2 emissions from night-time lights compared with geospatially derived population distributions for Vietnam, Cambodia, and Laos. Presented a Sprint Presentation and Poster, International Geoscience and Remote Sensing Symposium, Yokohama, Japan, August 2019.

Stevens, F.R., Reed, F., **Gaughan, A.E.**, Sinha, P., T., Sorichetta, A., Yetman, and Tatem, A.J. How remotely sensed built areas and their realizations inform and constrain gridded population models. Presented at the International Geoscience and Remote Sensing Symposium, Yokohama, Japan, August 2019.

Gaughan, A.E., Sorichetta, A, Stevens, F, Yetman, G, Linard, C, Bondarenko, M, Carioli, A, Hanspal, S., Hilber, T, Hornby, G., James, W. H.M., Kerr, D., Lloyd, C., Mills, J., Nieves, J., Nielsen, K., Pezzulo, C., Pistolesi, L., Tejedor-Garavito, N., Vesnikos, N., Wigley, A., Tatem, A. J. Harmonizing global gridded population outputs over space and time. Presented at the Global Land Program Open Science Meeting. Bern, Switzerland. April 24-26th, 2019.

Stevens, F.R., **Gaughan, A.E.**, Pricope, N., Salerno, J., Hartter, J., Cassidy, Lin; Drake, M., Weaver, A., Kolarik, N., Olsen, S., Bradshaw, A., Woodward, K. 2019. Measuring household food security and variability in land functions across communities in a semiarid savanna system. The Global Land Program Open Science Meeting, Bern, Switzerland. April 24-26th 2019.

Gaughan, A.E., Sorichetta, A., Stevens, F.R., Laura, K., Oda, T., Yetman., G., Bun, R., Nghiem, S. High resolution mapping of gridded CO2 emissions to population distribution for Vietnam, Cambodia and Laos. The Global Land Program Open Science Meeting, Bern, Switzerland. April 24-26th 2019.

Kerr., D., Sorichetta, A., **Gaughan, A.E.**, Stevens, F.R., Laura, K., Oda, T., Yetman., G., Bun, R., Nghiem, S. South-East Asia population and CO2 emission mapping. Global Land Program Open Science Meeting, Bern, Switzerland. April 24-26th 2019.

Yetman, G., Sinha, P., **Gaughan, A.E.**, Stevens, F.R., Mills, J. The high resolution settlement layer: improving population allocation methods. Global Land Program Open Science Meeting, Bern, Switzerland. April 24-26th 2019.

Stevens, F.R., **Gaughan, A.E.**, Linard, C., Sorichetta, A., Leyk, S., Balk, D., Yetman., Chen, R. Mapping people to pixels, an overview of population modeling approaches and challenges. Global Land Program Open Science Meeting, Bern, Switzerland. April 24-26th 2019.

Nieves, J.N., Sorichetta, A., Linard, C., Bondarenko M., Steele, J.E., Stevens, F.R., **Gaughan, A.E.**, Carioli, A., Clarke, D., Esch, R., and A.J. Tatem. Globally mapping human settlements in the absence of remote sensing data annual. Presented at the University of Southampton's Centre for Population Change. Southampton, England, 14, February 2019.

Gaughan, A.E., Stevens, F.R., King, A., Tatem, A.J., Sorichetta, A., Hornby, G., Nieves, J., and C. Linard. Spatiotemporal Population Modeling and the Built Environment. Presented at the Global Land Programme, Beijing, China. 26 October, 2016.

Sorichetta, Alessandro; Hornby, Graeme M.; Linard, Catherine; Stevens, Forrest R.; Nieves, Jeremiah J.; **Gaughan, Andrea E.**; Patel, Nirav N.; Tatem, Andrew J. The WorldPop project: high resolution population mapping for low income countries. Presented at that RSPSoc, NCEO and CEOI-ST Joint Annual Conference, September 9-11, 2015.

Sorichetta, A., Nghiem, S.V., Masetti, M., Richter, A., Linard, C., **Gaughan, A.E.**, and A.J. Tatem. China mega-urbanization in the 2000s and its environmental impact. Presented at the Urbanization and Development in China meeting, October 30-31, 2014, Southampton, UK.

Gaughan, A.E., Stevens, F.R., Linard, C., and A.J. Tatem. Detailed spatial demographic data in land change: the AfriPop, AsiaPop, and AmeriPop projects. Presented at the Global Land Project meeting, March 19th, 2014. Berlin, Germany.

Pricope, N.P., **Gaughan, A.E.** Seasonally-adjusted vegetation change trajectories in differentially-managed transboundary dryland ecosystems in southern Africa. Presented at the Global Land Project meeting, March 17-19th, 2014, Berlin, Germany

Linard, C., Gilbert, M., **Gaughan, A.E.**, Stevens, F.R., and A.J. Tatem. Urban expansion forecasts and changing human population distribution in Africa. Presented at the Global Land Project meeting, March 19th, 2014. Berlin, Germany.

Gaughan, A.E. Godwin, D.S. Kanapaux, B. Rostant, L.V. Caprivi Field Season May-July 2007: Results of

Preliminary Research. Feedback meeting to University of Namibia faculty and students, non-governmental organizations, and Ministry of Environment and Tourism, Namibia. July 27, 2007. University of Namibia, Windhoek, Namibia.

Gaughan, A.E. 2006. Landscape analysis with a multi-temporal, multi-scalar approach. Presented to Harry Oppenheimer Okavango Research Center (HOORC) faculty. July 30, 2006. Maun, Botswana.

NATIONAL (*student, *post-doctoral researcher)

Gaughan, A. E., Salerno, J., Bailey, K., Stevens, F. R., Hilton, T., Cassidy, L., Drake, M. D., Pricope, N. G., Hartter, J. (2021). Human-wildlife interaction, livelihoods, and climate in a transfrontier conservation landscape I. American Association of Geographers Annual Meeting, April 7-11, **2021**. Virtual.

Cassidy, L., Pricope, N., **Gaughan, A. E.**, Salerno, J., Stevens, F. R., Hartter, J., Drake, M., Mupeta-Munyamwa, P. (2021). Interdisciplinary research as a social-ecological system. American Association of Geographers Annual Meeting, April 7-11, **2021**. Virtual.

Stevens, F. R., **Gaughan, A. E.**, Pricope, N. G., Salerno, J., Cassidy, L., Drake, M., Hartter, J., Weaver, A., Kolarik, N., Olsen, S. (2021). Linking land functions to household vulnerability in food security in a semiarid savanna system. American Association of Geographers Annual Meeting, April 7-11, **2021**. Virtual.

Pricope, N. G., Woodward, K., Stevens, F. R., **Gaughan, A. E.**, Drake, M. (2021). Modeling mixed land use in a communally managed African landscape: An integrated approach using remote sensing and participatory mapping. American Association of Geographers Annual Meeting, April 7-11, **2021**. Virtual.

Hartter, J., Bailey, K., Drake, M., Salerno, J., Cassidy, L., **Gaughan, A. E.**, Stevens, F. R., Woodward, K., Pricope, N., Lukawayaya, H. M. (2021). Mapping natural resource collection areas from household survey data in Southern Africa. American Association of Geographers Annual Meeting, April 7-11, **2021**. Virtual.

Drake, M., Salerno, J., Langendorf, R. E., Cassidy, L., **Gaughan, A. E.**, Stevens, F. R., Pricope, N. G., Hartter, J. (2021). The costs of elephant crop depredation exceed the benefits of trophy hunting in a community-based conservation area of Namibia. American Association of Geographers Annual Meeting, April 7-11, **2021**. Virtual.

Bailey, K., Cassidy, L., Salerno, J., **Gaughan, A. E.**, Stevens, F. R., Pricope, N. G., Hartter, J. (2021). A multi-country analysis of smallholder vulnerability to climate and land-use change in Africa. American Association of Geographers Annual Meeting, April 7-11, **2021**. Virtual

Chen, R.S., de Sherbinin, A.M., **Gaughan, A.E.**, Pistolesi, L., Rabiee, M. GC016-09 - Why People Matter: Better Data on Population and Infrastructure to Assess SDG Progress. AGU, **December 2020**.

Tuholske, C., **Gaughan, A.E.**, de Sherbinin, A.M., Stevens, F.R., Sorichetta, A., Yetman, G., Huyck, C., Chen, R.S. NH026-11 - A Comparison of Gridded Population Data Products in Disaster Response (Invited). AGU, **December 2020**.

Hadizadeh, J., Boyle, A.P., Holmes, E., **Gaughan, A.E.**, Stevens, F.R., and D.J. Biddle. S031-0002 Calcite-sealed microbreccias and fracture networks in SAFOD gouge outside the active creep zones: A CL study. AGU, **December 2020**.

Chen, B., de Sherbinin, A.M., and A.E. Gaughan. Abstract ID#: 556758 Abstract Title: Mapping the Human Planet: Utilizing Earth Observations to Operationalize the Fundamental Geospatial Data Themes. Presented at the American Geophysical Union, December 2019, San Francisco, CA.

Holmes, E., Hadizadeh, J., Gaughan, A.E., and D.J. Biddle. Abstract ID#: 506335 Abstract Title: Digital Modeling of Core Billets for GIS-based Analysis of Deformation Microstructures in SAFOD Samples. Presented at the American Geophysical Union, December 2019, San Francisco, CA.

Gaughan, A.E., Sorichetta, A., Stevens, F.R., Laura, K., Oda, T., Yetman., G., Bun, R., Nghiem, S. ID# 491707, "Evaluating nighttime lights and population distribution as proxies for mapping anthropogenic CO2 emission in Vietnam, Cambodia and Laos. Presented at the American Geophysical Union, December 2019, San Francisco, CA.

Yetman, G. Mills, J., **Gaughan, A.E.**, Stevens, F.R., and A. Gros. Abstract ID#: 597024. Abstract Title: Population Data Models for Settlement Extents. Presented at the American Geophysical Union, December 2019, San Francisco, CA.

Gaughan, A.E., Stevens, F.R., Pricope, N., Salerno, J., Hartter, J., Cassidy, Lin; Drake, M., Weaver, A., Kolarik, N., Olsen, S., Bradshaw, A., Woodward, K. 2019. Leveraging spatial sciences to measure household food security across communities in a semiarid African savanna. Presented at the American Association of Geographers, April 2019, D.C.

Gaughan, A. E., Salerno, J., Cassidy, L., Hartter, J., Pricope, N., and F.R. Stevens. Adaptive Capacity Framing for Household Vulnerability in a Dryland System. Presented at the American Association of Geographers. April 10, 2018. New Orleans, LA.

Pricope, N., **Gaughan, A. E.**, Stevens, F.R., Cassidy, L., Hartter, J., and J. Salerno. Conceptualizing and operationalizing household vulnerability through environmental stressors and livelihood activities in the world's largest transfrontier conservation area. Presented at the American Association of Geographers. April 10, 2018. New Orleans, LA

Stevens, F.R., **Gaughan, A. E.**, Salerno, J., Cassidy, L., Hartter, J., and N. Pricope. Adaptive Capacity Framing for Household Vulnerability in a Dryland System. Presented at the American Association of Geographers. April 10, 2018. New Orleans, LA.

*Sinha, P., **Gaughan, A. E.**, and F. R. Stevens. Spatial Sampling and Sensitivity of Random Forest Model in Gridded Population Modeling. Presented at the American Association of Geographers. April 10, 2018. New Orleans, LA.

Bradshaw, A., Pricope, N., Stevens, F., **Gaughan, A.**, and Olsen, S. Utilizing UAV and RapidEye Imagery of a Heterogeneous Savanna Landscape for Structural Vegetation Analysis. Presented at the American Association of Geographers. April 10, 2018. New Orleans, LA.

Gaughan, A. E., Stevens, F.R., Nieves, J. King, A., Sorichetta, A., Tatem, and C. Linard. Human population modeling and the built environment. Presented at the American Association of Geographers. April 22, 2017. Boston, MA

Gaughan, A. E., Stevens, F.R., Nieves, J. The WorldPop Project: Spatial Demographic Modeling. Presented at the Kentucky Association Mapping of Professionals Quarterly Meeting. August 6th, 2015. Louisville, KY.

Stevens, F.R., **Gaughan, A. E.**, Nieves, J. Expanding WorldPop methods, data availability, and applications. Presented at the Kentucky Association Mapping of Professionals Quarterly Meeting. August 6th, 2015. Louisville, KY.

Gaughan, A. E., Stevens, F.R., Nieves, J. Sorichetta, A., Tatem, A.J., Shengjie, L., Huang, Z. and C. Linard. Spatiotemporal patterns of Mainland China's population 1990 to 2010. Presented at the American Association of Geographers. April 22, 2015. Chicago, IL.

*Weaver, A., **Gaughan, A.E.**, Staub, C., Hoell, A., and P.R. Waylen. Inter- and Intra-annual precipitation variability and associated relationships to ENSO and the IOD in southern Africa. Presented at the American Association of Geographers. April 22, 2015. Chicago, IL.

Stevens, F.R., **Gaughan, A. E.**, Nieves, J., Hornby, G., Sorichetta, A., Tatem, A.J. The Challenges of Mapping the Denominator – the Past, Present and Future of the WorldPop Project. Presented at the American Association of Geographers. April 22, 2015. Chicago, IL.

*Nieves, J., Stevens, F.R., **Gaughan, A. E.**, Patel, N.N., Linard, C., and Tatem, A.J. The Value of Urban Extents in High Resolution Population Mapping. Presented at the American Association of Geographers. April 22, 2015. Chicago, IL.

*Biddle, DJ, Stevens, F.R., and **A.E. Gaughan**. Mapping Debris-Covered Glaciers in the Cordillera Blanca, Peru: An Object-based Image Analysis Approach. Presented at the American Association of Geographers. April 24, 2015. Chicago, IL.

*Sandifer, J., **Gaughan, A.E.**, and F.R. Stevens. Remotely-Sensed Heat: Variation and Change in Surface Urban Heat Islands in the Temperate Eco-Region of the United States. Presented at the American Association of Geographers. April 22, 2015. Chicago, IL.

Caplow, S., Pricope, N., **A.E. Gaughan**. Community-Based Management and Conservation in Africa. Association for Environmental Studies and Sciences Annual Meeting, New York, June 11-14, 2014.

Gaughan, A.E., Stevens, F.R., Linard, C., Patel, N., and A.J. Tatem. Detailed spatial demographic data in land change systems: the WorldPop project. Presented at the American Association of Geographers. April 11, 2014. Tampa, FL.

Gaughan, A.E., Stevens, F.R., Linard, C., Jia, P., and A.J. Tatem. High resolution population distribution maps for Southeast Asia in 2010 and 2015. Presented at the American Association of Geographers. April 9, 2013. Los Angeles, CA.

Stevens, F.R., Tatem, A.J., and **A.E. Gaughan**. The Next Version of Afri/Asia/AmeriPop: Refining Area to Grid Population Assignment Using Ancillary Data and Nonparametric, Ensemble Models. Presented at the American Association of Geographers. April 9, 2013. Los Angeles, CA.

Gaughan, A.E., Stevens, F.R., Linard, C., Jia, P., and A.J. Tatem. High resolution population distribution maps for Southeast Asia in 2010 and 2015. Presented at the Southeastern Association of American Geographers, November 20th, 2012. Asheville, NC.

Gaughan, A.E., Holdo, R.M. Using short-term MODIS time-series to reconstruct the dynamics of tree cover in the Serengeti ecosystem Tanzania. Presented at the American Association of Geographers, February 26, 2012. New York City, New York.

Gaughan, A.E., Holdo, R.M., Anderson, M.T. Quantifying tree cover in an African savanna using a multi-scale remote sensing approach. Presented at the Ecological Society of America, August 11, 2011.

Gaughan, A.E., Binford, M.W. Detecting for long-term vegetation trends by adjusting for seasonality in a savanna landscape. Presented at the American Association of Geographers. April 16, 2011.

Gaughan, A.E., Stevens, F.R., Gibbes, C. Linking climate to landscape: Investigating the response of vegetation to precipitation variability in the Okavango-Kwando-Zambezi catchment of southern Africa. Presented at the American Association of Geographers. April 22, 2010. Washington, D.C.

Gaughan, A.E. and Waylen, P.R. Spatial and temporal precipitation dynamics: Variability in the Kavango-Zambezi Transboundary Conservation Area of Southern Africa. Presented at the American Association of Geographers. March 26, 2009. Las Vegas, Nevada.

Gaughan, A.E. and Waylen, P.R. Spatial and temporal precipitation dynamics: Variability in the Kavango-Zambezi Transboundary Conservation Area of Southern Africa. Presented at the Conference Pathways to Success: Integrating Human Dimensions into Fisheries and Wildlife Management. October 1, 2008. Estes Park, Colorado.

Gaughan, A.E., Binford, M.W., and Southworth, J. Spatiotemporal patterns of land-use and land-cover change: analysis of landscape dynamics in Angkor Basin, Cambodia. Presented at the American Association of Geographers. April 17 2007. San Francisco, CA.

Gaughan, A.E. Land-cover change in Angkor basin. Presented at the American Association of Geographers. March 16 2006. Chicago, IL.

Gaughan, A.E. Land-cover change in Angkor basin. Presented to Florida Society of Geographers. February 19, 2006. St. Petersburg, FL

POSTERS

Gaughan, A.E., Holmes, E., Hadizadeh, J., Stevens, F.R., Boyle, A.P., and D.J. Biddle. Complementing Chemical Elemental Maps with Cathodoluminescence Imagery using Remote Sensing Techniques: A San Andreas Fault Observatory at Depth Case Study. Presented at AGU Fall Meeting, **December 2021**.

Hadizadeh, J., Boyle, A.P., Embree, G.M., Holmes, E., **Gaughan, A.E.**, Stevens, F.R., and D.J. Biddle. A geochemical and Cathodoluminescence study of fluid overpressure microstructures in damage zone and the actively creeping core of the San Andreas Fault Zone. Presented at AGU Fall Meeting, **December 2021**.

Jia, S., Nghiem, S.V., Kim, S.H., Krauser, L., **Gaughan, A.E.**, Stevens, F.R., Kafatos, M., and K.D. Intense development of Dragon Fruit agriculture detected by nighttime light in Southern Vietnam. Presented at AGU Fall Meeting, **December 2021**.

*Kolarik, N., **Gaughan, A.E.**, and F.R. Stevens. Crown delineation using multispectral point cloud data. Presented at the American Association of Geographers. April 13, 2018.

*Nieves, J., **Gaughan, A.E.**, and F.R. Stevens. WorldPop Global Population and Urban Extents Using Google Compute Engine. Presented at the American Association of Geographers. April 24, 2015. Chicago, IL.

Pricope, N., S. Shukla, C., Linard, and **A.E. Gaughan**. Identifying water hotspots in the greater African horn. Presented at the American Geophysical Union, December 15-19th, San Francisco, CA.

Tatem, A.J., **Gaughan, A.E.**, Stevens, F.R., Patel, N., Jia, P., Waugh, S., Pandey, A., and C. Linard. Mapping the denominator: The AfriPop, AsiaPop, and AmeriPop projects and the effects of using detailed spatial demographic data on health metrics. Presented at the Global Health Metrics and Evaluation conference, June 17-19, 2013. Seattle, WA.

Gaughan, A.E. and Binford, M.W. Detecting long-term vegetation trends by adjusting for seasonality in a savanna landscape. Presented at the Global Land Project Open Science Meeting: Land Systems, Global Change, and Sustainability. October 19, 2010. Tempe, AZ.

Gaughan, A.E. and Waylen, P.R. Spatial and temporal precipitation variability in the Okavango-Kwando Zambezi catchment. Presented at the American Meteorological Society Student Conference. January 17, 2010. Atlanta, GA.

Gaughan, A.E. and Waylen, P.R. Spatial and temporal precipitation variability in the Okavango-Kwando Zambezi catchment. Presented at the Interdisciplinary Research Symposium, Graduate Student Council. University of Florida.. February 24-25, 2010.

Gibbes, C., **Gaughan, A.E.**, Stevens, F.R., J. Southworth. Linking climate to landscape: Investigating the response of vegetation to precipitation variability in the Okavango-Kwando-Zambezi catchment of southern Africa. Presented at the University of Florida Water Institute Symposium. February 24, 2010. Gainesville, FL.

Gaughan, A.E. Spatial and temporal variability of precipitation within the Okavango-Kwando-Zambezi catchment area of southern Africa. Poster presented at Latin American Studies Field Research Clinic, February 22, 2009. University of Florida, Gainesville, FL. 2nd-place runner-up in poster competition.

Gaughan, A.E., Gibbes, C. The Exploration of Adaptive Management Processes applied to a Socio-Biophysical System in Caprivi, Namibia and northeastern Botswana. Poster presented at the Graduate Student Council Forum, April 4, 2007. University of Florida, Gainesville, FL.

Cathey, A., Kiker, G., Munoz-Carpena, R. and **Gaughan, A.E.** Incorporating uncertainty in adaptive, transboundary water challenges: a conceptual design for the Okavango basin. Poster presented at NSF IGERT Conference for Sustainability, 3, November, 2007. Fairbanks, Alaska.

Gaughan, A.E. Importance of landscape position in the Angkor basin, Siem Reap, Cambodia: Spatial and temporal change in a tropical watershed. Poster presented at the Land Use and Environmental Change Institute forum, 1, November, 2006. Gainesville, FL.

SERVICES AND OTHER ACTIVITIES

University of Louisville

Education and Sustainability Research Committee, College of Arts and Sciences, UofL – Chair **(2022-present)**

A&S Distinguished Faculty Awards in Scholarship, Research, and Creative Activity Committee, 2022
Department of Geographic and Environmental Sciences, Director, Undergraduate Program (2020-present)
Education and Sustainability Research Committee, College of Arts and Sciences, UofL – member (2021-2022)
Faculty Advisor for University of Louisville's Undergraduate Summer Research Opportunity Program (SROP),
 Advisor to Mr. Jacob Foushee on his study of Pyrophytic Tree Classification in Berea Forest using Unmanned Aerial Systems. Summer, 2021.

Organizer of the UofL Department of Geography and Geosciences seminar series (2016-2021)
Member. Teaching Evaluation Assessment Committee for University of College of Arts and Sciences, 2018-2019.
Panelist for UofL's Graduate Student Grant Writing Academy, Fall 2015.
Fulbright Interview and Application Reviewer, University of Louisville internal process. Fall 2015.
Presenter at UofL's Accolade program, representing the Department of Geography and Geosciences in the Natural Sciences division, Fall 2015, 2016, 2017, 2018
Presenter at the Kentucky Association of Mapping Professionals quarterly meeting, August 2015.
Faculty Advisor for University of Louisville's Undergraduate Summer Research Opportunity Program (SROP),
 Advisor to Ms. Laura Krasuer on her study of the Tobacco Transition Payment Program and its effects on Kentucky farmers. Summer, 2015,
Representative in Tech Savvy by the Association of University Women at Kentucky State University. May, 2015.
Faculty member, participation and involvement in the Center for Geographic Information Science (CGIS), University of Louisville.
Faculty Advisor for University of Louisville's Undergraduate Summer Research Opportunity Program (SROP),
 Advisor to Mr. Isaiah Kinsberry on his study of the associations between climate and vegetation dynamics in semi-arid Southern African landscapes. 2017.
Member of departmental curriculum committee (2013-14, 2015-2016, 2020-current)
Member of departmental personnel committee (2019-2020)
Member of departmental budget committee (2016-17, 2016-2017)
Member of departmental graduate committee (2014-15, 2017-2018, 2018-2019, 2020-2021)
Co-coordinator for independent, weekly lab meetings with faculty and students
Reviewer for *Remote Sensing of Environment, Remote Sensing, Scientific Data (Nature), Environmental Research Letters, Global Change Biology, Population and Environment, Applied Geography, Journal of Arid Environments, The Professional Geographer, PLoS One, Journal of Land Use Science, Sustainability Science, International Journal of Remote Sensing, Remote Sensing Letters, Nature Communications and Nature Ecology and Evolution*

Profession

Co-Organizer for American Geophysical Union 2022 session Integrating Earth Observations and Socioeconomic Data for a Sustainable Human Planet: Challenges, Opportunities, and Priorities, December 2022, Chicago, IL.
Earth Observation Toolkit for Sustainable Cities and Human Settlements ([EO4SDG](#)) collaborator (2020-present).
NSF panel participant, April 2021, November 2021
Co-Organizer for American Association of Geographers 2021 joint sessions, Series title: Change and Adaptation in Socio-Ecological Systems: A Coupled Human-Environment Perspective, April 2021. Virtual.
Co-Organizer for American Geophysical Union 2019 joint session, Series title: IN051 - Who's at Risk? Assessing Population and Infrastructure Exposure and Vulnerability for Hazard, Climate, and Health Applications, December 2019. San Francisco, CA
Co-organizer for the Global Land Program Open Science Meeting interactive session: Gridded population and settlement data and models for integrative analysis of land systems. Bern, Switzerland, April 2019.
NSF Reviewer for a Faculty Early-Career Development (CAREER) proposal for consideration by the Geography and Spatial Sciences Program, September of 2018.
Co-Organizer for American Association of Geographers 2018 joint session, Series title:

High resolution population modeling. Paper sessions, April 2018. New Orleans, LA

Co-Organizer for American Geophysical Union 2017 joint session, Series title:

Where We Live and Work: Improving Data and Models for Human Settlements, Infrastructure, and Population Distribution. Two paper sessions and one poster session, December, 2017. New Orleans, LA

Co-Organizer for American Association of Geographers 2017 joint session, Series title:

Modelling human populations, demographics, and movements at regional to global scales Paper session, April 2017. Boston, MA

Co-Organizer for Global Land Programme session, Series title: Global High Resolution Population Denominators and Urban Spatial Dynamics, October, 2016. Beijing, China.

Co-Organizer for American Association of Geographers 2016 joint sessions, Series title:

Degradation and Greening in Dry Lands – Two Sides of the Same Coin? Paper and Panel sessions, April 2016. San Francisco, CA

Organizer for the American Geophysical Union session, Series title: Understanding the extent and impacts of land-use/land-cover change on hydrology. December 2014.

Organizer for American Association of Geographers 2013 session, Series title: The AfriPop and AsiaPop Projects: Methods and Applications for Human Population Distribution Mapping. 2012-2013.

Co-organizer for American Association of Geographers 2010 session, Series title: Coupled human environment interactions in dryland regions. 2009-2010.

IGERT Seminar Series, Main coordinator for initiating and organizing a campus-wide, student led IGERT seminar series entitled: "Integrative Science for a Complex World" - An Interdisciplinary Seminar Series Exploring Coupled Human-Environment Systems. 2008-2010.

African Studies Quarterly, Member of the editorial committee. Internal review of manuscripts, copy-editing, assistance with management of webpages. 2006-2008.

University Scholars Program Mentor, Provided guidance and assistance to undergraduate for application process, field work, and write up stages of the University of Florida Scholars program for research training for undergraduates. 2007-2008.

Organizer for American Association of Geographers 2015 session, Series title: WorldPop – Techniques and Applications. April 2015.

Graduate Student Senior Seminar Panelist, UF Dept. of Geography

Community

Representative at the Presidential Outreach and Info Fair at Manual High School, 10/24/2018

RELATED EXPERIENCE

RESEARCH

2013-Present **Research Collaborator, WorldPop project** (<http://www.worldpop.org.uk/>)

- Generate open access archive of spatial demographic datasets for Central and South America, Africa and Asia to support development and health applications.

2012-2013 **Post-Doctoral Research Associate for the AsiaPop project**

Dr. Andy Tatem, advisor, University of Florida

- Directed population mapping project in Asia including geostatistical modeling and collaboration on high resolution age and sex spatial population datasets

2011-2012 **Post-Doctoral Research Scholar for tree-grass dynamics in Serengeti, Tanzania**

Dr. Ricardo Holdo, advisor, University of Missouri

- Utilization and processing of multi-scale datasets (MODIS, IKONOS, Google Earth) to develop tools for characterizing spatiotemporal variation in savanna tree cover

2009-2010

Co-Author and Non-PI Contributor, NASA Land-Use/Land-Cover Change Program:

Understanding and predicting the impact of climate variability and climate change on land use and land cover change via socio-economic institutions in Southern Africa.

2007-2009

NSF Human and Social Dynamics Program: Collaborative Research: Parks as Agents of Social and Environmental Change in Eastern and South Africa.

2007-2008

NSF START PACOM: Landscape processes and biodiversity change along the Kwando River in Caprivi, Namibia.

Dr. Alfonse Mosimane (PI), Dr. John Mfune, University of Namibia, Dr. Michael W. Binford, University of Florida

- Co-wrote grant for research on land use change and biodiversity patterns in Namibia and conducting in-field coordination and logistics.

2004-2006

NSF SES-HSD Agents of Change Program: Economic Growth, Social Inequality, and Environmental Change in Thailand and Cambodia.

A. Kolata and R. Townsend, University of Chicago, National Opinion Research Center.
Dr. Michael W. Binford, University of Florida, (PIs)

- Completed field work and data collection in Cambodia as well as acquisition, pre-processing and analysis of Landsat satellite imagery

2006

Graduate Research Assistant for online conversion of Physical Geography Lab course in the Department of Geography, University of Florida.

2001

Undergraduate Research Assistant for Ocean Mammal Institute monitoring the effects of engine noise on behaviors of humpback whales, Maui, HI

PROFESSIONAL MEMBERSHIP

American Association of Geographers
American Geophysical Union
Kentucky Academy of Sciences

MEDIA

UofL Thinker Annual News Letter. (2016, June). Big Data for Big Impact.
<http://louisville.edu/artsandsciences/news/all/big-data-for-a-big-impact>

UofL Today With Mark Hebert. (2016, May 30). Radio interview regarding WorldPop population modelling.
<https://soundcloud.com/uofl/05-30-16-uofl-today-stevensgaughan-chlebowymcgrew-seldon>

Science Magazine. (2015, March 6). Asia's cities swell as population surges.
<http://www.sciencemag.org/content/347/6226/1048.full>

New Scientist. (2014, October 27). Phone call pulse shows millions hitting the beach. <http://www.newscientist.com/article/dn26460-phone-call-pulse-shows-millions-hitting-thebeach.html#.VNfgCmjF8gW>

Science Magazine. (2014, October 27) Taking the census, with cellphones. <http://news.sciencemag.org/math/2014/10/taking-census-cellphones?rss=1>

The Conversation (2013, December) Natural disasters put Haiti and Philippines on the map. <http://theconversation.com/natural-disasters-put-haiti-and-philippines-on-the-map-20879>

Science Daily. (2013, November 27). World Population Mapping Helps Combat Poverty, Poor Health. <http://www.sciencedaily.com/releases/2013/11/131127110347.htm>

Earthzine: Fostering Earth Observation and Global Awareness (2013, November 27). Igniting the Power Grid in Rwanda using NASA EOS. <http://www.earthzine.org/2013/11/17/igniting-the-power-grid-in-rwanda-usingnasa-eos/>