RYAN N. ENGSTROM

Department of Geography
George Washington University
2036 H St., NW 210
Washington, DC 20052

Office: (202) 994-7979

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EDUCATION

Ph.D. in Geography, Joint Doctoral Program in Geography **July 2005**
San Diego State University / University of California, Santa Barbara

M.A. in Geography, San Diego State University **May 2000**

B.A. in Geography and Political Science, Villanova University **May 1995**
Membership in Gamma Theta Upsilon Honor Society

WORK EXPERIENCE

Director of Data Science Program, George Washington University **July 2020 –Present**

Associate Professor, Department of Geography **May 2011-Present**
George Washington University, Director of the Spatial Analysis Lab (SAL) and Center for Urban and Environmental Research (CUER)

Assistant Professor, Department of Geography **August 2005-May 2011**
George Washington University, Director of the SAL and CUER

Consultant, World Bank **May 2015-Present**

- Developing methods for estimating variations in poverty and population distributions using remotely sensed observations

Consultant, Fraym **June 2018-Present**

Consultant, Radiant.Earth Foundation **Dec. 2017-Dec. 2018**

Consultant, United States Census Bureau, Geographic Studies Branch **Sept. 2006-Oct. 2011**

- Developed methods for distributing census data over space using multi-scale, optical remotely sensed data for the countries of Haiti, Pakistan, and Rwanda

REFEREED JOURNAL PUBLICATIONS

1. **Engstrom, R**., Newhouse, D., and Soundararajan, V. (2020) Estimating Small Area Population Density Using Satellite Imagery: An Application to Sri Lanka, *PlosONE 15 (8) https://doi.org/10.1080/02681102.2020.1811945*

2. Hersh, J., **Engstrom, R.** and Mann, M. (2020) Open Data for Development: Mapping Poverty in Belize Using Open Satellite Derived Features and Machine Learning, *Information Technology for Development https://doi.org/10.1080/02681102.2020.1811945*

3. Kuffer, M., Thomson, D.R., Boo, G., Mahabir, R.; Grippa, T., Vanhuysse, S., **Engstrom, R**., Ndugwa, R., Makau, J., Darin, E., de Albuquerque, J.P., and Kabaria, C. (2020) The Role of Earth Observation in an Integrated Deprived Area Mapping "System" for Low-to-Middle Income Countries. *Remote Sensing*, **12**, 982. Doi: 10.3390/rs12060982

4. 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*. **41**, pages 209–234 doi.org/10.1007/s11111-019-00326-5

5. Nyland, K.E., Gunn, G.E., Shiklomanov, N.I., **Engstrom, R. N**., and Streletskiy (2018) Land Cover Change in the Lower Yenisei River Using Dense Stacking of Landsat Imagery in Google Earth Engine. *Remote Sensing* 10, 1226 DOI:10.3390/rs10081226

6. Olimb, S. K., Dixon, A.P., Dolfi, E., Anderson, K., and **Engstrom. R**. (2017) Prairie or pasture?: Using time series NDVI to monitor grassland phenology and characteristics in Montana. *Geojournal* 83 (819-834) https://doi.org/10.1007/s10708-017-9805-8

7. Qin, Y., Epstein, H., **Engstrom, R**. and Walker, D. (2017) Circumpolar arctic tundra biomass and productivity dynamics in response to projected climate change and herbivory. *Global Change Biology.* DOI 10.1111/gcb.13632

8. Toure, S., Stow, D., Shih, H.S., Coulter, L., Weeks, J. **Engstrom, R**., and Sandborn, A. (2016) An object-based temporal inversion approach to urban land use change analysis. *Remote Sensing Letters*. DOI 10.1080/2150704X.2016.1157640

9. Sandborn, A. and **Engstrom, R** (2016) Determining the Relationship Between Census Data and Spatial Features Derived From High Resolution Imagery in Accra, Ghana. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS)* Special Issue on Urban Remote Sensing. DOI 10.1109/JSTARS.2016.2519843

10. Yu, Q., Epstein, H., **Engstrom, R**., Shiklomanov, N. and Streletskiy, D. (2015) Land Cover and Land Use Changes in the Oil/Gas Regions of Northwestern Siberia under Changing Climatic Conditions. *Environmental Research Letters*. DOI:10.1088/1748-9326/10/12/124020

11. Gregory EF, Chamberlain JM, Teach S, **Engstrom R**, and Mathison DJ. (2015) Geographic Variation in the use of low acuity pediatric Emergency Medical Services. *Pediatric Emergency Care DOI:* 10.1097/PEC.0000000000000581

12. Mathison, D., Chamberlain, J., Cowan, N., **Engstrom, R.**, Fu, L., Shoo, A., and Teach, S. (2013) Association of Primary Care Spatial Density with Non-Urgent Visits to a Pediatric Emergency Department *Academic Pediatrics* 13 (3):278-285 DOI: 10.1016/j.acap.2013.02.006

13. **Engstrom, R.,** Ofiesh, C., Rain, D., Jewell, H., and Weeks, J. (2013) Defining Neighborhood Boundaries for Urban Health Research in Developing Countries: A Case Study of Accra, Ghana *Journal of Maps* DOI:10.1080/17445647.2013.765366

14. Azar,D., **Engstrom, R**., Graesser, J. and Comenetz, J. (2013) Generation of fine-scale population layers using multi-resolution satellite imagery and geospatial data *Remote Sensing of Environment* 130 219-232. DOI: 10.1016/j.rse.2012.11.022

15. Weeks, J., Getis, A., Stow, D., Hill, A., Rain, D., **Engstrom, R**., Stoler, J., Lippitt, C., Jankowska, M., Lopez, A.C., Coulter, L, and Ofiesh, C., Connecting the Dots between Health, Poverty, and Place in Accra, Ghana (2012) *Annals of the Association of American Geographers* DOI**:** 10.1080/00045608.2012.671132

16. Liljedahl, A., Hinzman, L., Harazano, Y., Zona, D., Tweedie, C., Hollister, R., **Engstrom, R**. and Oechel, W.C., (2011) Nonlinear controls on evapotranspiration in Arctic coastal wetlands. *Biogeosciences* 8, 3375-3389. doi:10.5194/bgd-8-6307-2011

17. Jankowska, M., Weeks, J., and **Engstrom, R.** (2011) Do the Most Vulnerable People Live in the Worst Slums? A Spatial Analysis of Accra Ghana. *Annals of GIS* 17:4, 221-235. DOI:10.1080/19475683.2011.625976

18. **Engstrom, R.** and Hope, A.S. Parameter Sensitivity of the Arctic BIOME BGC Model for Estimating Evapotranspiration in the Arctic Coastal Plain (2011) *Arctic, Antarctic, and Alpine Research* 43(3):380-388 DOI: 10.1657/1938-4246-43.3.380.

19. Azar, D., Graesser, J., **Engstrom, R**., Comenetz, J., Leddy, R., Schechtman, and Andrews, T. (2010) Spatial Refinement of census population distribution using remotely sensed estimates of impervious surface in Haiti. *International Journal of Remote Sensing*. 31: 21, 5635-5655 DOI: 10.1080/01431161.2010.496799.

20. Fu, L., Cowan, N., McLaren, R., **Engstrom, R,** and Teach, S. (2009) Is spatial accessibility to primary care providers associated with vaccination coverage among children with Medicaid insurance? *Pediatrics* 124(6) pp. 1579-1586; DOI: 10.1542/peds.2009-0233.

21. **Engstrom, R.N.,** Hope, A.S., Kwon, H. and Stow, D. (2008) The Relationship between Soil Moisture and NDVI near Barrow, Alaska, *Physical Geography*. 29(1), pp. 38-53; DOI: 10.2747/0272-3646.29.1.38.

22. Stow, D., Peterson, A., Hope, A., **Engstrom. R.** and Coulter L. (2007) Greenness Trends of Arctic Tundra Vegetation in the 1990s: Comparison of Two Normalized Difference Vegetation Index Data Sets from NOAA Advanced Very High Resolution Radiometer Systems *International Journal of Remote Sensing.* Vol. 28 Issue 21, p4807-4822, 16p; DOI: 10.1080/01431160701264284; (*AN 27217146*).

23. Sitch, S., McGuire, A. D., Kimball, J., Gedney, N., Gamon, J., **Engstrom, R.N.**, Wolf, A., Zhuang, Q. and Clein, J. (2007) Assessing the circumpolar carbon balance of arctic tundra with remote sensing and process-based modeling approaches. *Ecological Applications.* 17(1), pp. 213–234

24. **Engstrom, R.**, Hope, A.S., Kwon, H., Harazano, Y., Oechel, W.C., and Mano, M (2006) Modeling evaporation in Arctic coastal plain ecosystems using a modified version of BIOME BGC. *Journal of Geophysical Research Biogeosciences*- 111, G02021, doi:10.1029/2005JG000102

25. **Engstrom, R. N.**, Hope, A.S., Kwon, H., Stow, D.A. and Zamolodchikov, D. (2005) Spatial distribution of near surface soil moisture and its relationship to microtopography in the Arctic coastal plain. *Hydrology Research,* 36 (3): 219-234.

26. Hope, A.S., **Engstrom, R.**, and Stow, D.A. (2005) Relationship between AVHRR surface temperature and NDVI in Arctic Tundra Ecosystems. *International Journal of Remote Sensing,* 26:8, p. 1771-1776.

27. Vourlitis, G.L., Verfaille, J., Oechel, W.C., Hope, A.S., Stow, D.A. and **Engstrom, R.** (2003) Spatial variation in regional CO_2 exchange for the Kuparuk river basin, Alaska over the summer growing season. *Global Change Biology* 9, p. 930-941.

28. **Engstrom, R. N**., Hope, A. S., Stow, D.A., Vourlitis, G. L., and Oechel, W. C. (2002) Co-variability of the Priestley-Taylor alpha coefficient and regional NDVI in Arctic landscapes, *Journal of the American Water Resources Association (JAWRA)*, 38:6, p. 1647-1659.

BOOK CHAPTERS

1. **Engstrom, R.,** Ofiesh, C., Rain, D., Jewell, H. and Weeks, J. (2013). Defining Neighborhood Boundaries for Urban Health Research: A Case Study of Accra, Ghana. In Weeks, J., Hill, A., and Stoler, J. (Eds.), *Spatial Inequalities: Health, Poverty and Place in Accra, Ghana* (pp. 27-38). Netherlands, Springer. DOI: 10.1007/978-94-007-6732-4_2

2. Rain, D., **Engstrom, R.,** Ludlow C., and Antos, S. (2011). Accra Ghana: A City Vulnerable to Flooding and Drought-Induced Migration, in Global Report on Human Settlements 2011: Human Settlements Background Study for Chapter 4: UN Publications. https://mirror.unhabitat.org/downloads/docs/GRHS2011/GRHS2011CaseStudyChapter04Accra.pdf

REFEREED CONFERENCE PROCEEDINGS

1. **Engstrom, R**., Pavelesku, D., Tanaka, T., and Wambile, A. (2019) Mapping Poverty and Slums Using Multiple Methodologies in Accra, Ghana, Joint Urban Remote Sensing Event (JURSE 2019) Vannes, France. DOI: 10.1109/JURSE.2019.8809052

2. **Engstrom, R,** Harrison, R., Mann, M., and Fletcher, A. (2019) Evaluating the Relationship Between Contextual Features Derived from Very High Spatial Resolution Imagery and Urban Attributes: A Case Study in Sri Lanka, Joint Urban Remote Sensing Event (JURSE 2019) Vannes, France. DOI 10.1109/JURSE.2019.8809041

3. **Engstrom, R**., Copenhaver, A., Newhouse, D., Hersh, J., and Haldavanekar, V. (2017) Evaluating the Relationship between Spatial and Spectral Features Derived from High Spatial Resolution Satellite Data and Urban Poverty in Colombo, Sri Lanka. Joint Urban Remote Sensing Event (JURSE 2017) Dubai, UAE. DOI: 10.1109/JURSE.2017.7924590

4. **Engstrom, R**., Copenhaver, A. and Qi, Yang (2016) Evaluating the use of Multiple Imagery Derived Spatial Features to Predict Census Demographic Variables in Accra, Ghana. *International Geoscience and Remote Sensing Symposium (IGARSS)*, Beijing, China 10.1109/IGARSS.2016.7730909

5. Yu, Q., **Engstrom, R**., and Graesser, J. (2016) Contextural Feature Evaluation of Multi-Resolution Imagery. *International Geoscience and Remote Sensing Symposium (IGARSS)*, Beijing, China 10.1109/IGARSS.2016.7730770

6. **Engstrom, R**., Sandborn, A., Yu, Q. and Graesser, J. (2015) Assessing the Relationship Between Spatial Features Derived from High Resolution Satellite Imagery and Census Variables in Accra, Ghana. *International Geoscience and Remote Sensing Symposium (IGARSS)*, Milan, Italy, p. 2544-2547, DOI:10.1109/IGARSS.2015.7326330

7. **Engstrom, R.**, Sandborn, A., Yu, Q. Burgdorfer, J., Stow, D., Weeks, J., and Graesser, J. (2015) Mapping Slums Using Spatial Features in Accra, Ghana*. Joint Urban and Remote Sensing Event Proceedings (JURSE)*, Lausanne, Switzerland, DOI: 10.1109/JURSE.2015.7120494

8. **Engstrom, R.,** Ashcroft, E., Jewell, H., and Rain, D. (2011) Using Remotely Sensed Data to Map Variability in Health and Wealth Indicators in Accra, Ghana. *Joint Urban and Remote Sensing Event Proceedings,* Munich, Germany p. 145-148, DOI: 10.1109/JURSE.2011.5764740

WORKING PAPERS

1. Masaka, T., Newhouse, D., Silwal, A., Bedada, A, and **Engstrom, R.** (2020) Small Area Estimation of Non-Monetary Poverty with Geospatial Data. Policy Research working paper; https://doi.org/10.1596/1813-9450-9383

2. Hersh, Jonathan; **Engstrom, Ryan**; Mann, Michael; Martin, Lucia; Mejía, Alejandra. (2020) Mapping Income Poverty in Belize Using Satellite Features and Machine Learning: Inter-American Development Bank Monograph 108, http://dx.doi.org/10.18235/0002345

3. **Engstrom, Ryan**; Newhouse, David Locke; and Soundararajan, Vidhya. (2019). *Estimating Small Area Population Density Using Survey Data and Satellite Imagery : An Application to Sri Lanka (English)*. Poverty and Equity Global Practice Working Paper; no. 194. Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/256241552483977593/Estimating-Small-Area-Population-Density-Using-Survey-Data-and-Satellite-Imagery-An-Application-to-Sri-Lanka

4. **Engstrom, Ryan**; Hersh, Jonathan Samuel; Newhouse, David Locke. (2017). Poverty from space: using high-resolution satellite imagery for estimating economic well-being (English). Policy Research working paper; no. WPS 8284. Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/610771513691888412/Poverty-from-space-using-high-resolution-satellite-imagery-for-estimating-economic-well-being

PUBLICATIONS IN REVIEW

Engstrom, R., Hersh, J. and Newhouse, D. (In Review) Poverty from Space: Using High-Resolution Satellite Imagery for Welfare Estimation, *World Bank Economic Review (WBER)*

FUNDED GRANTS, and FELLOWSHIPS

CO-PI, UK Research and Innovation (UKRI), Caroline Kabaria, PI
Integrated Deprived Area Mapping System (IDEAMAPS) Network 2020

Co-I, USAID, Patricia Solis ASU PI 2018-2023
YouthMappers, Total Funding Amount $1,100,000: GWU Portion $550,000

PI, University Facilitating Fund (UFF) 2018-2019
Mapping Poverty from Space Using High Spatial Resolution Satellite Imagery
Total Funding: $19,569

Co-I, NSF, Robert Orttung PI, NSF Partnerships for International 2016-2020
Research and Education (PIRE) Promoting Urban Sustainability in the Arctic,
Total Amount: $3,020,645

Co-I, USAID, Patricia Solis TTU PI, 2015-2018
Mappers without Borders
Total Funding Amount: $999,000: GWU Portion: $96,000

Co-PI, GWU Deans Interdisciplinary Collaboration Excellence (DICE) 2015-2016
Differential Risk and Response to Community Violence Exposure among African American Youth, This project uses GIS and a mixed methods approach to look at the impacts of community violence in Washington, DC.-Total Funding: $20,000

Co-I, ROI Grant National Institute of Mental Health (NIMH) 2014-2017
Social-Structural Stressors, Resilience, and Black Men's Sexual Risk, The project is a collaboration between GWU Psychology, Public Health and Geography examining the spatial patterns of HIV in black males, Lisa Bowleg (GWU Psychology) is the lead PI, GWU Geography portion $158,000

PI, Dean's Research Chair 2014-2017
Mapping the Urban Environment using Multi-Scale Satellite Data
One Course Release and $6,000 for scholarly travel

CO-PI (GWU PI), NASA Land Cover and Land Use Change Interdisciplinary Studies, 2012-2015
The Urban Transition in Ghana and Its Relation to Land Cover and Land Use Change Through Analysis of Multi-scale and Multi-temporal Satellite Image Data, Total Award: $993,000 GWU portion: $134,000

Co-I, Jody Ganiban, GWU Psychology PI (CCFF) 2012-2013
Neighborhood determinants of BMI trajectories among ethnic minority youth: Total Award $11,000

Co-PI (GWU PI), RO1 Grant NICHD 2007-2012
Health, Poverty and Place: Modeling Inequalities in Accra Using RS and GIS,
National Institute of Child Health and Human Development,
The project is a collaboration between GWU, Harvard, and San Diego State where John Weeks is the lead PI: Total Award $3,000,000: GW portion: $650,000

Academic Advisor, Ford Foundation 2008-2009
Leadership Institute on Creative Responses to Global Climate Change
This work is with Linda Yarr in the GWU PISA, SIGUR Center
Total Two year budget $253,500

Data Award, GeoEye Foundation 2007
Estimating populations over space in Mozambique, Five High Resolution Satellite Images of different areas in Mozambique, M.A. Student Sarah Antos: $6,600 worth of imagery

Earth System Science Fellowship, NASA 2001-2004
Assessing the affects of variations in soil moisture on the surface energy balance and carbon balance of Arctic tundra ecosystems, Supervisor Allen Hope: $73,000

Doctoral Dissertation Enhancement Grant, National Science Foundation 2002-2004
Effects of sub-grid spatial and temporal variability on modeled evaporation fluxes in Arctic coastal plain ecosystems, Supervisor Allen Hope: $7,750

AWARDS

Ned H. Greenwood Award for Physical Geography SDSU 1999

Best Paper Award, Joint Urban Remote Sensing Event (JURSE) 2019
Engstrom, R., Pavelesku, D., Tanka, T., and Wambile, A. (2019) Mapping Poverty and Slums Using Multiple Methodologies in Accra, Ghana. Joint Urban Remote Sensing Event (JURSE), May 23- Vannes, France - Presentation

TEACHING EXPERIENCE

Geospatial Data for Good (Geo4Good) Honors 2054
Honors Program Class, George Washington University

Digital Image Processing and Analysis (GEOG 3198/6307)
Department of Geography, George Washington University

Water Resources (GEOG 2136)
Department of Geography, George Washington University

Introduction to Remote Sensing (GEOG 2107)
Department of Geography, George Washington University

Intermediate GIS (GEOG 2106)
Department of Geography, George Washington University

Field Methods in Geography (GEOG 3196)
Department of Geography, George Washington University

Physical Geography (GEOG 1002)
Department of Geography, George Washington University

Geospatial Techniques (GEOG 6221)
Department of Geography, George Washington University

Intermediate Remote Sensing of the Environment with Lab (GEOG 588)
Department of Geography, San Diego State University

INVITED PRESENTATIONS

1. Hersh, Jon, **Engstrom, R**., Mann, M., Mejia, A., and Rivero, L (2019) Mapping Poverty in Belize using Satellite Features and Machine Learning, Inter-American Development Bank, Washington, D.C. October, 18th

2. **Ryan Engstrom**, (2019) Using Contextual Features to Map the Human Modified Landscape, Université Libre de Bruxelles, Brussels, Belgium, Nov. 18th

3. Hersh, Jon, **Engstrom, R**., Mann, M., Mejia, A., and Rivero, L (2019) Mapping Poverty in Belize using Satellite Features and Machine Learning, Statistical Institute of Belize, Belmopan, Belize July, 24th

4. Ryan Engstrom, Dan Pavelesku, Tomomi Tanaka and Ayago Wambile (2017) Monetary and non-monetary poverty in urban slums in Accra: Combining geospatial data and machine learning to study urban poverty, World Bank, November 10th

5. **Engstrom, R.** (2017) Using Spatial Features calculated on High Spatial Resolution Imagery to map Human Variability in the Global South, University of Twente, Twente, Netherlands, July 19.

6. **Engstrom, R.** (2017) People and Pixels: Mapping Population Variability Using Remotely Sensed Data, National Geospatial Intelligence Agency (NGA), Springfield, VA, April, 26th.

7. **Engstrom, R.** Hersh, J. and Newhouse, D. (2017) Poverty from Space:
Using High-Resolution Satellite Imagery for Welfare Estimation, World Bank, February, 2.

8. **Engstrom, R**. (2016) Introduction to Remote Sensing and Mapping Poverty Using Satellite Data, Department of Census and Statistics, Colombo, Sri Lanka, January 11th.

9. **Engstrom, R.** (2015) The Urban Transition in Ghana and Its Relation to Land Cover and Land Use Change (LCLUC) Through Analysis of Multi-scale and Multi-Temporal Satellite Image Data, London School of Economics, London, UK, January 20th.

10. **Engstrom, R.** (2014) People and Pixels: Mapping Population Variability Using Remotely Sensed Data, San Diego State University Colloquium, San Diego, CA October 23rd.

11. **Engstrom, R.** (2014) Utilizing Geospatial Technology to Determine Climate Change Risk, Myanmar Leadership Institute at George Washington University, Washington, DC November 4th.

12. **Engstrom, R.** (2013) Introduction to Climate, Climate Change, Remote Sensing and GIS. Myanmar Leadership Institute on Climate Change (MLICC), Nay Pyi Taw, Myanmar, February 19th.

13. **Engstrom, R.** (2012) Health, Poverty and Place: Modeling Inequalities in Accra Using Remote Sensing and GIS. World-Wide Human Geography Data Working Group Meeting, Reston, VA November 27th.

14. **Engstrom, R.** (2012) People and Pixels: Mapping Population Distributions from Countries to Cities Using Satellite Data. Clark University, Department of Geography, March 2nd.

15. **Engstrom, R.** (2012) The contribution of satellite imagery to the study of urban differentiation. Understanding the Social, Economic and Spatial Dynamics of Health and Well Being in Accra. ISSER University of Ghana at Legon, January 16th.

16. **Engstrom, R.** (2010) Health, Poverty and Place: Modeling Inequalities in Accra Using Remote Sensing and GIS, Innovation in Environmental and Social Impact Assessment Meeting, World Bank, Washington, D.C.

17. **Engstrom, R.N.** (2008) Global Climate Change and Anticipated Effects on Vietnam's Physical Geography and Climate, Leadership Institute on Creative Responses to Global Climate Change, Hanoi, Vietnam

18. **Engstrom, R.N.** (2006) Modeling Evaporation in Arctic Tundra Ecosystems using a Modified BIOME BGC model, San Diego State University

19. **Engstrom, R. N**., Hope, A.S., and Stow, D.A. (2003) Evaporation modeling with BIOME BGC and remote sensing. Presentation: Synthesis Workshop of current and future status of C storage and ecosystem-atmosphere exchange in the circumpolar North; Processes, Budgets and Projections. Skogar, Iceland.

DISCUSSANT

Decision Making in a GeoEnabled World: Where Do We Go Now? USAID Digital Development Forum, March 9, 2018 Washington, D.C.

Understanding Human Settlements with Satellite Images, World Bank, July 10, 2013
Speaker, Anil M. Cheriyadat, Oak Ridge National Labs, Discussant Ryan Engstrom

PhD COMMITEES

Thomson, Dana (2020) Evaluating the accuracy and feasibility of gridded population sampling to overcome bias due to missing populations in household surveys. Department of Social Statistics and Demography. University of South Hampton

Kuffer, Monika (2017) Spatial patterns of deprivation in cities of the global south in very high resolution imagery. Enschede, University of Twente Faculty of Geo-Information and Earth Observation (ITC), 2017. ITC Dissertation 304, ISBN: 978-90-365-4369-9.

Cowan, Nuala, (2013) The use of Geographical Information Systems for Humanitarian Information Management, and the potential application of data models to that end. Doctor of Science in Engineering Management, The George Washington University

M.A. THESES SUPERVISED

1. Chao, Steven (2020) A Feature to Believe In: Evaluating the Ability to use Contextual Features Derived from Multi-Scale Satellite Imagery to Map Spatial Patterns of Urban Attributes and Population Distributions

2. Copenhaver, Andrew (2020) Combining Machine Learning and Contextual Image Features to Disaggregate Census Derived Population Counts in Two Ghanaian Cities

3. Sandborn, Avery (2015) Using High Spatial Resolution Imagery to Assess the Relationship between Spatial Features and Census Data: A Case Study of Accra, Ghana

4. Burgdorfer, Jason (2013) A Spatial and Statistical Analysis of Childhood Obesity in the District of Columbia

5. Ashcroft, Eric (2012) Using Remotely Sensed Data and Decision Tree Classifiers to Determine if the Changes in Accra, Ghana are Concentrated in the Most Vulnerable Areas

6. Colson, Lisa (2012) Using High Resolution Remotely Sensed Data to Assess the Relationship between Population Density and Impervious Surfaces in Accra, Ghana

7. Jewell, Henry (2010) Using GIS and Remotely Sensed Data to Map Variability in Health and Wealth Outcomes in the Neighborhoods of Accra, Ghana

8. McWilliams, Katie (2010) The influence of urbanization on tornado development in the central United States: A case study of 30 metropolitan statistical areas

9. Ludlow, Christianna (2009) Flood Modeling in a Data-Poor Region: A Satellite Data-Supported Flood Model for Accra, Ghana

10. Antos, Sarah (2008) Sizing up Settlements in Mozambique: A Technique for Estimating Population Distribution using Remote Sensing

11. Fisherow, Michael (2006). An Examination of Severe Weather and Its Relationship with Atmospheric and Oceanic Circulation Patterns along the Coast of the Mid-Atlantic United States

M.A. THESES READER

Nyland, Kelsey (2015) Climate- and Human- Induced Land Cover Change and its effects on the Permafrost System in the Lower Yenisei River of the Russian Arctic

Voge, Maianna (2012) Understanding the Patterns & Consequences of Foreclosure in Stockton, California

Guthe, Emiko (2012) Mapping Impacts of Foreign Aid: Spatial Methods for Measuring Humanitarian Performance in Haiti

CAPSTONE ADVISED

Amanda Fletcher (2018)
Adane Bedade (2019)

STUDENT AWARDS

Shields, Chloe - George Gamow Undergraduate Research Fellowship (GWU) Spring 2010
Shields, Chloe – Elliot School Scholar Spring 2011

Stuhlmacher, Michelle- Udall Scholar Spring 2013
Stuhlmacher, Michelle- Undergraduate Research Enhancement Fund (UREF) Spring 2013
Stuhlmacher, Michelle – NOAA Hollings Scholarship Summer 2014
Sandborn, Avery – Campbell Summer Research Grant Summer 2014

DEPARTMENTAL/UNIVERSITY SERVICE

Director Center for Urban and Environmental Research (CUER) Fall 09-Present
Co-Director Center for Urban and Environmental Research (CUER) Spring 08-Fall 09
Director of the Spatial Analysis Lab-GWU, Department of Geography Fall 05-Present
Undergraduate Advisor, GWU, Department of Geography Fall 08-Present
Columbian College Research Advisory Committee Fall 2013-2015
GIS Minor Advisor, GWU, Department of Geography Spring 12 -Present
Chair of Hire Committee, GWU Geography Fall 2011, 2016, Spring 2018
Hiring Committee Member, GWU Geography Fall 2008, 09, 12
Speaker Series Coordinator, GWU Geography Fall 07-Spring 08
Member of the Center for Urban and Environmental Research (CUER) Fall 07-Spring 08
Member of the CCAS General Curriculum Requirement Committee – Science Spring 2010
Member of Tenure Review Committee Fall 2012, 2013
GIS Certificate Committee, GWU Geography Fall 2013-Present
BASE Committee Spring 2015
OVPR Workflow Committee Fall 2014
Multiple CCAS Research Committee Reviews Spring 2015, 2016
Campbell Review Committee, GWU Geography Spring 2015
Mid-Tenure Reviews, GWU Geography Spring 2016
Elliot School Practice Committee Fall 2016
RISE Committee Member Fall 2016
CCAS Data Science Major Committee Spring 2019

PROFESSIONAL SERVICE

Committee Member, CSIS Future of Earth Observations Fall 2007-08
Student representative and Ph.D. group coordinator: SDSU Geography Dept. 1999-2000
Student Volunteer: California Geographical Society Annual Meeting, SDSU May 2000
Peer Reviewer: Journal of Vegetation Science, Geojournal (2 Articles), Landscape Ecology Natural Environment Research Council of the UK (IPY), National Science Foundation (NSF) Arctic Natural Sciences (2), Blackwell Publishing Book Proposal, Civilian Research and Development Foundation (CRDF) (2), Physical Geography, NSF Geography and Regional Science Program (3), Water Resources Research, International Journal of Remote Sensing (3), National Institute of Health (NIH), Ecosystems, Tree Physiology Book Chapter, Hydrologic Processes (2), Canadian Journal of Remote Sensing, Remote Sensing of Environment (2), Photogrammetric Engineering and Remote Sensing (PE&RS), Geocarto, International Society for Photogrammetry and Remote Sensing (ISPRS), Remote Sensing (5), Computers, Environments and Urban Systems (4), Proceedings of the National Academy of Sciences (PNAS) (2), European Journal of Remote Sensing, Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS) (2), International Journal of Geographic Information (IJGI), Nature Communications
IEEE Geoscience and Remote Sensing Society (IGARRS) Conference Reviewer 2015,2016

Mid-Tenure Reviews: Colgate University, Geography	Fall 2014
Panel Reviewer: NASA Interdisciplinary Studies (IDS)	2014
JURSE Conference Reviewer	2016
Danish Government Research Grant Reviewer	2017
Belgium Government Research Grant Reviewer	2018
Steering Committee Member: SLUMAP project	2019-2021
Tenure Review – U. Louisville	2019
Tenure Review – Colgate University	2017

MEMBERSHIPS

Association of American Geographers
Member: Remote Sensing and Climate Specialty Groups
American Geophysical Union
IEEE