Kevin Sparks

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kevinsparks.io
fall, 2016

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Education

2013 – 2015 **M.S. in Geography** | *The Pennsylvania State University*

Thesis: Citizen Science Land Cover Classification Based on Ground and Aerial Imagery

2009 – 2013 **B.Sc. in Geography** | *The Pennsylvania State University*

Emphasis in geographic information science (GIS), with a minor in Climatology

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Work Experience

2015 – Present **Research Associate** | *Oak Ridge National Laboratory*

Development of scalable big data infrastructure and analysis of social media data

Computational Sciences and Engineering Division in the Geographic Information Science and Technology group

2011 – 2015 **Research Assistant** | *The Pennsylvania State University*

- Dr. Alexander Klippel: Research projects relating to spatial information theory and environmental cognition

- Dr. Cynthia Brewer: Research project for cartographically redesigning The National Map (USGS) entailing land cover representation and processing of remotely sensed data

2013 – 2015 **Teaching Assistant** | *The Pennsylvania State University*

Geog 464: Advanced Spatial Analysis
Geog 364: Spatial Analysis
Geog 363: Geographic Information Systems
Geog 362: Image Analysis
*Programming Spatial Statistics to Evaluate Data (*Instructor*)
     Summer class for statewide high school students

Summer 2011 **Research Intern** | *NASA Langley Research Center*

Used hyperspectral remote sensing data to create agricultural monitoring methods for tillage practices

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Publications

2016   **Sparks**, **K.A.**, R.G. Li, G.S. Thakur, R.N. Stewart, M.L. Urban (submitted) "Facility Detection and Popularity Assessment from Large-scale Text Classification of Social Media and Crowdsourced Data", In *GIR '16*.

2016   Thakur, G.S., **K.A. Sparks**, R.G. Li, R.N. Stewart, M.L. Urban, B. Bhaduri (accepted) "Demo: PlanetSense: Gathering Geo-spatial Intelligence from Crowd-sourced and Social-media Data", In *Proceedings of the 24th International Conference on Advances in Geographic Information Systems. ACM, 2016.*

2016   Thakur, G.S., **K.A. Sparks**, R.G. Li, R.N. Stewart, M.L. Urban, B. Bhaduri (accepted) "Curating Transient Population in Urban Dynamics Systems", In *Extended Abstract Proceedings of the GIScience 2016*. Montreal, Canada.

2016   Thakur, G.S., **K.A. Sparks**, R.G. Li, R.N. Stewart, M.L. Urban, B. Bhaduri (accepted) "Landuse Classification and Occupancy Estimation form Fine Grained Social Media Analysis", In *GeoSocial: Social Media & GIScience*.

2015   **Sparks, K.A.**, A. Klippel, J.O. Wallgrün, D. Mark (2015) "Citizen Science Land Cover Classification Based on Ground and Aerial Imagery", In S. I. Fabrikant, M. Raubal, M. Bertolotto, C. Davies, S. M. Freundschuh, & S. Bell (Eds.), *Proceedings, Conference on Spatial Information Theory (COSIT 2015), Santa Fe, NM, USA, Oct. 12-16, 2015. Berlin: Springer.*

2015   Klippel, A., **K.A. Sparks**, J.O. Wallgrün (2015) "Pitfalls and potentials of crowd science: A meta analysis of contextual influences", *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*.

2015   **Sparks, K.A.**, A. Klippel, J.O. Wallgrün, D. Mark (2015) "Crowdsourcing landscape perceptions to validate land cover classifications", In O. Ahlqvist, K. Janowicz, D. Varanka, S. Fritz (Eds.), *Land Use and Land Cover Semantics - Principles, Best Practices and Prospects*, CRC Press / Taylor & Francis*.*

2015   Klippel, A., J. Yang, J.O. Wallgrün, **K.A. Sparks** (2015) "Intuitive direction concepts", *The Baltic International Yearbook of Cognition, Logic and Communication*.

2014 **Sparks, K.A.**, A. Klippel, J.O. Wallgrün, D. Mark, (2014). Crowdsourcing landscape perceptions to validate land cover classifications. In K. Stewart, E. Pebesma, G. Navratil, P. Fogliaroni, & M. Duckham (Eds.), *Extended Abstract Proceedings of the GIScience 2014* (pp. 147–152). Vienna: Hochschülerschaft, TU Vienna.

2013 Brewer, C.A., L.V. Stanislawski, B.P. Buttenfield, P. Raposo, **K.A. Sparks**, J. McGilloway, and M. Howard (2013) "Automated thinning of road networks and road labels for multiscale design of *The National Map* of the United States", *Cartography and Geographic Information Science, Vol. 40, No. 4, pp. 259-270*.

2012 Brewer, C.A., L.V. Stanislawski, B.P. Buttenfield, P. Raposo, **K.A. Sparks**, and M. Howard (2012) "Multiscale Design for The National Map of the United States: Road Thinning for Topographic Mapping", *Proceedings, AutoCarto 2012,* Columbus OH, September.

2011 Makar, N., K. Rooks, S. Archer, **K.A. Sparks**, C. Trigg, J. Lourie, K. Wilkens (2011) "Monitoring Agricultural Tillage Practices with NASA Hyperspectral Satellite Imagery", *IEEE's Earthzine.org*.

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Presentations

2016 Thakur, G.S., **K.A. Sparks**, R.N. Stewart, M.L. Urban, B. Bhaduri (2016) "The Efficacy of Applying Open and Crowd Source Data in Urban Dynamics Research", In *Conference on Data Analysis 2016*. CoDA, 2016.

2015 Klippel, A., **K.A. Sparks,** J.O. Wallgrün (2015) "Pitfalls and Potentials of Crowd Science: A Meta-Analysis of Contextual Influences" ISSDQ 2015, La Grande Motte, France, September.

2015 **Sparks**, **K.A.**, A. Klippel, J.O. Wallgrün, D. Mark (2015) "Assessing Environmental Information Channels for Citizen Science Land Cover Classification" AAG Annual Meeting, Chicago, Illinois, April.

2015 Klippel, A., J.O. Wallgrün, D. Mark, R. Purves, **K.A. Sparks** (2015) "Cognition of the Top of the World: Investigating Humans' Conceptions and Linguistic Expressions of Mountain Peaks" AAG Annual Meeting, Chicago, Illinois, April.

2015 **Sparks**, **K.A.**, A. Klippel, J.O. Wallgrün, D. Mark (2015) "Ground and Aerial Based Land Cover Classification for Citizen Science" 2nd Pennsylvania Spatial Cognition Symposium, State College, PA, May.

2014 Klippel, A., A. Robinson, **K.A. Sparks** (2014) "Sketch-based Geospatial Learning Objects," COIL Research Symposium, The Pennsylvania State University, October.

2014 **Sparks**, **K.A.**, A. Klippel, J.O. Wallgrün, D. Mark (2014) "Crowdsourcing landscape perceptions to validate land cover classifications" Pennsylvania Spatial Cognition Symposium, State College, PA, May.

2014 Klippel, A., A. Robinson, **K.A. Sparks** (2014) "Enhancing Online Geospatial Education with Sketch-based Geospatial Learning Objects," Symposium for Teaching and Learning with Technology, The Pennsylvania State University, March.

2013 **Sparks**, **K.A.**, J. Yang, A. Klippel (2013) "Day and night: Analyzing cultural differences through perceived similarities of lighting patterns" Conference on Spatial Information Theory (COSIT), Scarborough UK, September.

2012 Raposo, P., **K.A. Sparks**, and C.A. Brewer (2012) "Techniques for Cartographic Presentation of Upsampled Raster Land Cover Data" North American Cartographic Information Society (NACIS) annual meeting, Portland OR, October.

2012 Brewer, C.A., L.V. Stanislawski, B.P. Buttenfield, P. Raposo, **K.A. Sparks**, and M. Howard (2012) "Multiscale design for The National Map of the United States: Road Thinning for Topographic Mapping," AutoCarto 2010, Columbus OH, September.

2012 *Three invited presentations*—Center of Excellence for Geospatial Information Science (CEGIS) meeting, U.S. Geological Survey (USGS), Rolla MO, June 2012:
   Brewer, C.A., **K.A. Sparks** and P. Raposo (2012), "Multiscale Design for *The National Map.*"
   Sparks, **K.A.**, P. Raposo, and C.A. Brewer (2012) "Multiscale Land Cover Design for *The National Map.*" (presenter).
   Raposo, P., **K.A. Sparks**, and C.A. Brewer (2012) "Multiscale Land Cover Processing for *The National Map.*"

2012 Raposo, P., and **K.A. Sparks** (2012) "A Feathered-Edge Technique for Cartographic Presentation of Upsampled Raster Land Cover Data," no)Boundaries Interdisciplinary Conference, The Pennsylvania State University, March.

2011   Makar, N., K. Rooks, S. Archer, **K.A. Sparks**, C. Trigg, J. Lourie, K. Wilkens (2011) "Midwest Climate and Agriculture - Monitoring Tillage Practices with NASA Remote Sensors" American Geophysical Union, Fall Meeting 2011, San Francisco, December.

2011   Makar, N., K. Rooks, S. Archer, **K.A. Sparks**, C. Trigg, J. Lourie, K. Wilkens (2011) "Monitoring Agricultural Tillage Practices with NASA Hyperspectral Satellite Imagery," NASA Applied Sciences DEVELOP National Program Headquarters Annual Close Out Meeting, Washington D.C., August.

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Honors

2012   **Jeff Gockley Memorial Award** - given to the top rising senior in the Pennsylvania State Geography program in the Geographic Information Science Option

2011   **Gamma Theta Upsilon Honor Society** - inducted member spring 2011 (honor society for academic achievement)