

# Kevin Sparks

kevinsparks.io

## Curriculum Vitae, Summer 2015

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### Education

**MS** Department of Geography with emphasis in geographic information science  
(GIS), Pennsylvania State University, 2013 to 2015.

**BS** Geography with emphasis in geographic information science (GIS), climatology minor,  
Pennsylvania State University, 2009 to 2013.

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### Work Experience

#### Oak Ridge National Laboratory:

Research Intern, August 2015 to Present

Research intern under the Advanced Short Term Research Opportunity (ASTRO)  
program

#### The Pennsylvania State University, Department of Geography:

Research Assistant/Data Analyst, Summer 2013 to Summer 2015

*Dr. Alexander Klippel*, research projects relating to spatial information theory and  
environmental cognition

Teaching Assistant, Fall 2013 to Summer 2015

*Geog 464: Advanced Spatial Analysis*

*Geog 364: Spatial Analysis*

*Geog 363: Geographic Information Systems*

*Geog 362: Image Analysis*

Teaching Instructor, Summer 2014

*Summer Research Experience in Earth and Mineral Sciences (SEEMS)*

*Making Sense of Chaos: Programming Spatial Statistics to Evaluate Data*

Research Assistant/Cartographer, Fall 2011 to Summer 2012

*Dr. Cynthia Brewer*, research project for redesigning *The National Map* (USGS)  
entailing land cover representation and processing of remotely sensed data

Research Assistant, Fall 2011 to Spring 2012

*Dr. Derrick Lampkin*, remote sensing research, modeling glacial activity in Greenland

Teaching Intern, Fall 2010 and Fall 2012

*Geog 160: Mapping Our Changing World*

*Geog 120: Urban Geography: A Global Perspective*

## NASA Langley Research Center:

Research Intern, Summer 2011

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

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## Publications

**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. Freundsuh, & S. Bell (Eds.), *Proceedings, Conference on Spatial Information Theory (COSIT 2015), Santa Fe, NM, USA, Oct. 12-16, 2015*. Berlin: Springer.

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*.

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

**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.

**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.

Brewer, C.A., L.V. Stanislawski, B.P. Battenfield, 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.

Brewer, C.A., L.V. Stanislawski, B.P. Battenfield, 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.

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***

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.

**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.

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.

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

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

**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.

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.

**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.

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.

Brewer, C.A., L.V. Stanislawski, B.P. Battenfield, 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.

*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*."

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.

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.

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**

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

**National Geospatial Intelligence Agency**, accepted to 2012 summer internship

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

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## **Other**

**GIScience Workshop**, *Role of Volunteered Geographic Information in Advancing Science: Effective Utilization*.

**Conference on Spatial Information Theory (COSIT) Workshop**, *Spatio-temporal theories and research for environmental, urban and social sciences: Where do we stand?*