Sean C. Ahearn, Ph.D.

a) Professional Preparation

Institution	Major	Degree
Syracuse University/ SUNY-ESF	Natural Resource Management	'78 B.S.
University of Wisconsin Madison.	Environmental Remote Sensing	'82 M.S.
University of Wisconsin Madison.	Environmental Remote Sensing	'86 Ph.D.

b) Appointments

Year	Appointment
2002 - present	Professor, Department of Geography Hunter College – CUNY
2018-present	Director, Master of Science in GeoInformatics Program
1994 - present	Director, Center for Advanced Research of Spatial Information
1998 – present	Earth and Environmental Sciences Ph.D. program
1986-90	Assistant Professor School of Natural Resources, Univ. of Minnesota - TC

c) Publications (selected)

Smith, S., D.M. Brown, J.R. Oliveras, P.L. Sieswerda, **S.C. Ahearn**, D. Reiss. Preliminary Study on Humpback Wales Lunge Feeding in the New York Bight. *Frontiers in Marine Science*. Vol 9, 2022.

Dodge, S.,R. Su, J. Johson, A. Simcharoen, K. Goulias, J.L.D. Smith. **S. C. Ahearn (**2021)**.** ORTEGA: An object-oriented time-geographic analytical approach to trace space-time contact patterns in movement data. *Computer, Environment and Urban System*. Vol 88, July 2021, 101630

Ahearn, S.C., S. Dodge. 2018. "Recursive multi-frequency segmentation of movement trajectories (ReMuS). Methods in Ecology and Evolution. Vol. 9, Issue 4, April 2018.

Ahearn, S. C., A. Skupin. (2016) *From BoK to Base Map: Managing Domain Knowledge Through Collaboration and Computation.* In Onsrud, H. and Kuhn, K., (Eds.), Advancing Geographic Information Science: The Past and Next Twenty Years.

Ahearn, S. C., A. Skupin. (2016) *From BoK to Base Map: Managing Domain Knowledge Through Collaboration and Computation.* In Onsrud, H. and Kuhn, K., (Eds.), Advancing Geographic Information Science: The Past and Next Twenty Years.

Ahearn, S.C., S. Dodge, A. Simcharoen, G. Xavierc and J. L.D. Smith. 2016. "A context-sensitive correlated random walk: a new simulation model for movement. *International Journal of Geographical Information Science*. 31:5, 867-883, 2016.

Green, G., S. **Ahearn**, W. Ni-Miester. (2016). "Downscaling On Demand: Examples in Forest Canopy Mapping". In Why Scale Still Matters: Applications That Advance GIScience and Remote Sensing, Ed. D. A. Quattrochi, from CRC press.

Dodge, S., Weibel, R., **Ahearn**, S. C., Buchin, M., & Miller, J. A. (2016). Analysis of movement data. *International Journal of Geographical Information Science*, 1-10.

Green, G., S. C. **Ahearn**. (2015). Modeling forest canopy trends with on-demand spatial simulation*. International Journal of Geographical Information Science*, 2015.

Green, G., S. **Ahearn**, W. Ni-Miester, (2013), "A multi-scale approach to Mapping Canopy Heights", *Photogrammetric Engineering and Remote Sensing*, February 2013 Vol. 79, # 2.

Ahearn, S., I. Icke, R. Datta, B. Plewe, M. DeMere, A. Skupin. (2013). "Re-engineering the Geographic Information System Body of Knowledge" Special Issue on GIS-Cyber-Infrastructure. *International Journal for Geographic Information Science* Vol. 27 Issue 11.

DeMeres, M., A. Klimaszewski-Patterson, R. Richman, S.C. **Ahearn**, B. Plewe, A. Skupin, (2013) "Toward an Immersive 3D Virtual BoK Exploratorium: A Proof of Concept". *Transactions on GIS*.

Ahearn, S., I. Icke, R. Datta, B. Plewe, M. DeMere, A. Skupin. (2013). "Re-engineering the Geographic Information System Body of Knowledge" Special Issue on GIS-Cyber-Infrastructure. *International Journal for Geographic Information Science* Vol. 27 Is 11.

Carney, R., S. **Ahearn**, A. McConchie, C. Glaser, C. Jean, C. Barker, B. Park, K. Padgett & V. Kramer. 2011. DYCAST early warning system for West Nile virus". *Journal of Emerging Infectious Disease*, Vo. 17, issue 8.

Ahearn, S.C., Ahn, Y.J. 2011. "Quality Assurance and potential applications of high density LiDAR data for the City of New York" , *Proceedings American Society of Photogrammetry and Remote Sensing*, Milwaukee Wisconsin.

Ahearn, S. C., A., J.L.D. Smith, A. Simchareon, S. Simchareon, and J. Garcia, 2010. "Modeling the relationship between patterns of movement of Panthera tigris and its behavioral states." Ed. B. Gottfried, P. Laube, A. Klippel, N. Van de Weghe & R. Billen. Proceedings of the *1st Workshop on Movement Pattern Analysis*, MPA'10, Zurich Switzerland, September 14, 2010. Pg. 143-146.

Carney, R., S. **Ahearn**, A. McConchie, C. Glaser, C. Jean, C. Barker, B. Park, K. Padgett & V. Kramer. 2011. DYCAST early warning system for West Nile virus". *Journal of Emerging Infectious Disease*, Vo. 17, issue 8.

Theophilides, C. N., Binkowski, E. S., **Ahearn**, S. C., & Paul, W. S. (2008). A Comparison of two Significance Testing Methodologies for the Knox Test. *International Journal of Geoinformatics*, *4*(3).

Theophilides, C.; S. C. **Ahearn**; S. Grady; M. Merlino. 2003. "DYCAST: System for Identifying West Nile Virus Risk Areas". *American Journal of Epidemiology*, Vol. 157, No. 9, 843-854.

Theophilides, C.; **S. C. Ahearn**; E. Binkowski; W. S Paul; and K. Gibbs. 2006. "First Evidence of West Nile virus amplification and relationship to human infections" *International Journal for Geographic Information Science* Vol 20, No. 1, January 2006, 103-115.

Theophilides, C.; S. C. **Ahearn**; S. Grady; M. Merlino. 2003. "DYCAST: System for Identifying West Nile Virus Risk Areas". *American Journal of Epidemiology*, Vol. 157, No. 9, 843-854.

Theophilides, C.; **S. C. Ahearn**; E. Binkowski; W. S Paul; and K. Gibbs. 2006. "First Evidence of West Nile virus amplification and relationship to human infections" *International Journal for Geographic Information Science* Vol 20, No. 1, January 2006, 103-115.

Ahearn, S. C., and J. L. D. Smith. 2006. "Modeling the interaction between humans and animals in multiple-use forests: a case study of Panthera tigris." *GIS, Spatial Analysis, Modeling. ESRI Press, Redlands, California, USA* (2005): 358-387.

Ahearn, S. C.; J.L.D. Smith; A. R. Joshi; and J. Ding "TIGMOD: an individual-based spatially explicit model for simulating tiger/human interaction in multiple use forests". *Ecological Modeling* 140 (2001) 81-97.

Smith, J. L. D., McDougal, C., **Ahearn**, S. C., Joshi, A., & Conforti, K. (1999). Metapopulation structure of tigers in Nepal. *Riding the tiger: tiger conservation in human dominated landscapes. Cambridge University Press, Cambridge, UK*, 176-189.

Smith, J.L.D., S.C. **Ahearn**, and C. McDougal. 1998. Landscape analysis of tiger distribution and habitat quality in Nepal . *Conservation Biology* 12:1-9.

Henderson, D. B., **S. Ahearn**, 1998. Evolution of a municipal landbase from layers to objects, *URISA Annual Conference Proceedings*, Charlotte, NC.,pp. 320-330

Ahearn, S. C., & De Rooy, C. (1996). Monitoring the effects of dracunculiasis remediation on agricultural productivity using satellite data. *International Journal of Remote Sensing*, *17*(5), 917-929.

Robbins, Michael L., and Sean C. **Ahearn**. "The price of wilderness and scenic beauty: a methodology for the inventory and appraisal of wilderness and scenic land." Appraisal, market analysis, and public policy in real estate (1994): 150-201.

Ahearn, S. C., & Wee, C. (1991). Data space volumes and classification optimization of SPOT and Landsat TM data. *Photogrammetric engineering and remote sensing*, *57*(1), 61-65.

Joria, P. E., & **Ahearn**, S. C. (1991). A comparison of the SPOT and Landsat Thematic Mapper satellite systems for detecting gypsy moth defoliation in Michigan. *Photogrammetric Engineering and Remote Sensing*, *57*(12), 1605-1612.

Ahearn, S. C., James L. David Smith, and Catherine Wee. "Framework for a geographically referenced conservation database: case study Nepal." *Photogrammetric engineering and remote sensing* 56.11 (1990): 1477-1481.

Ahearn, S.C. 1988. "Combining Laplacian images of different spatial frequencies (scales): implications for image analysis. *IEEE Geoscience and Remote Sensing*. vol. 26, issue 6, pp. 826-831.

e) Grants (selected: Total > $21M since 1995 in over 75 grants)

1. Department of Information Technology and Telecommunications New York City. (**PI)** Quality Assurance of the City-wide Planimetric Update. (2022) $440,000
2. US Dept. of Energy (sub of Sustainable CUNY). (2015 -18) "NYS Solar Map" Manage data analysis and system development for solar mapping, $220,000.
3. The National Science Foundation. 2010-13. (**PI)**. "Geographic Information Science and Technology BoK2: Foundational Research". $409,000.
4. US Department of Energy. 2010-11. (**Co-PI)**. "NYC Solar Map", Directed development. $212,000
5. New York Department of City Services (DCAS). 2010. (**PI)**. "High Density Lidar acquisition and quality assurance". $ 450,000.
6. California Department of Health. 2005 -2008. (**PI**). Implemented a real-time warning system for West Nile Virus.. ~ $ 200,000

7. New York City Department of Environmental Protection. (**PI**.) 2002 – 2012. "Quality control for the New York City Sewer GIS Compilation", ~ $ 8,000,000
8. City of Chicago Dept. of Health (2003) **(PI)** Implemented a real-time warning system for West Nile Virus. ~ $100,000
9. New York City Department of Information Technology and Telecommunications. 1996 – 2004. (**PI)**. "Update and Maintenance of the New York City Base-map (NYCMap)", Funding: ~$9,000,000
10. NYCDOITT, 2001-02. Emergency Mapping and Data Center. Response to 911. $ 276,460
11. New York City Department of Health**. (PI)** Implemented a real-time warning system for West Nile Virus. ~ $ 50,000

f) Synergistic Activities

1. Invited Speaker: National Academy of Sciences: Mapping Science Committee: *Modeling Covid-19 using an imbedded recursive model for SIR parameterization*. June 2020 http://carsimodel.com/06/
2. Invited Speaker: National Academy of Sciences: Mapping Science Committee: *A Scale of One*. April 30, 2015.
3. Led a NSF funded consortium of four Universities to create a set of computational systems for domain ontologies for the creation of Bodies of Knowledge. (2010-2013)
4. State-wide implementation of the DYCAST spatial-temporal model for detecting West Nile Virus hotspots in California funded by the California, DoH. Model was run every day for each ¼ by ¼ mile of the state for 3 years from May to October (2005-2008) and reported out the Vector Control Units in California for targeted remediation.
5. Citywide-wide implementation of the DYCAST spatial-temporal model for the City of Chicago for detecting West Nile Virus hotspots funded by the Chicago DoH (2004)
6. Played a key role in implementing geo-spatial technologies in response to the 911 crisis. Work was chronicled in the **History Chanel** documentary: *The Twin Towers: rise and fall of an American Icon*.
7. Citywide-wide implementation of the DYCAST spatial-temporal model for the City of New York for detecting West Nile Virus hotspots funded by the New York City DoH (2000)

g) Notable

1. US Patent US2015024847A1 Knowledge reference system and methods 2022 (https://patents.google.com/patent/US20150248478)
2. IBM Faculty Award for 2013
3. Appointment by US Secretary of Interior Kempthorne to the National Geospatial Advisory Committee (NGAC) as a *founding member* (2008- 2011).
4. President of the University Consortium of Geographic Information Science. February (2007 -2008).

5. American Geographical Society, Commendation for meritorious services in the applications of geospatial technologies in response to the World Trade Center Crisis, November 2001.
6. Smallworld (now GE Network Solutions) Innovation Award for 1998, for development of an object-oriented model using Smallworld GIS to model tiger behavior and interaction.

h) Presentations & Lectures (select)

1. Invited Speaker: Workshop on "Digital Twins". Arizona State University. February 2023.
2. Invited Speaker: Workshop on Scale. Arizona State University. February 2020
3. Invited Participant: Workshop on Spatial Data Science. Dec. 2019.
4. Invited Speaker: Lorentz Workshop on "Movement: New Sensors, New Data, New Challenges'. Leiden, The Netherlands. 21 August – 25 August 2017.
5. Invited Speaker: Schloss Dagstuhl Seminar 17282, "From Observation to Prediction of Movement". July 8, 2017 to July 14, 2017. Wadern, Germany.
6. Invited Speaker: NSF workshop on Movement Interaction, Ohio State University, Columbus, Oh May 11-12, 2017.
7. Invited Speaker: NSF workshop on Movement Interaction, University of Texas-Austin. Nov. 9-10, 2016.
8. Invited Speaker, The National Academies of Science, Mapping Science Committee, May 2015.
9. Transactions on Geographic Information Science Plenary Speaker. The American Association of Geographers, Tampa, Fl. 2014.
10. Presentation. The International Cartography Conference. The GIS & T Body of Knowledge: foundational research. Paris 2011.
11. Keynote. International Conference on Geographic Information Science, Istanbul, Turkey, 2008
8. Invited Speak, The University of Southern California, October 2007
9. Invited Speaker, Rutgers University October 2006.
10. Keynote. West Virginia Annual Geographic Information Systems Conference; June 2006.
11. Invited Speaker, The CIA February 2004.
12. Invited Speaker, The NSA, February 2004.
13. Invited Speaker, The NGA, February 2004.
14. Invited speaker, Harvard School of Design 2003