

Jennifer A Miller, PhD

Professor, Department of Geography
University of Oregon

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<https://cas.uoregon.edu/directory/geography-faculty/all/jamiller>

EDUCATION

San Diego State University / University of California at Santa Barbara, San Diego CA

Ph.D., Geography, 2003.

Dissertation: "Incorporating spatial dependence in predictive vegetation models"

Committee: Janet Franklin (chair), Mike Goodchild, Joel Michaelsen, and Serge Rey

The Ohio State University, Columbus, Ohio

M.A., Geography (Spatial Analysis Methods), 1997

Thesis: "A Biogeographic Investigation of Raccoon Rabies in the Mid- Atlantic States"

Committee: Duane Marble (chair), Randy Jackson, Carolyn Merry

The University of Miami, Coral Gables, Florida

B.A., Geography, (Chemistry minor), with honors, 1992

ACADEMIC POSITIONS

Professor, Department of Geography, University of Oregon, (Dec.) 2025 - present

Professor & Chair, Department of Geography and the Environment, The University of Texas at Austin, 2022 – 2025.

Professor, Department of Geography and the Environment, The University of Texas at Austin, 2021 –present.

Associate Professor, Department of Geography and the Environment, The University of Texas at Austin, 2013 –2021.

Assistant Professor, Department of Geography and the Environment, The University of Texas at Austin, 2007-2013.

Assistant Professor, Department of Geology and Geography, West Virginia University, 2003-2007.

PUBLICATIONS

(**denotes advisees, *denotes students on whose committees I served)

Peer-Reviewed Articles

Wang, H.**, J. Miller, and S. Jha (2025), Search space reduction using species distribution modeling with simulated pollen signatures. *Leibniz International Proceedings in Informatics (LIPIcs)*, Volume 346, *GIScience* 2025

Melhado, C., Hancock, C., Wang, H., Eldin, M.M., George, N., Miller, J.A., Remick, K.E., Patel, B., Yorkgitis, B.K., Gray, L. and Dingeldein, M.W., (2025). Pediatric Readiness and Trauma Center Access for Children. *JAMA pediatrics*, 179(4), pp.455-462.

Helderop, E., T. Grubestic, E. Bienenstock, S. Smith-Heisters. H. Wang**, and J. Miller (2025), Geoforensic palynology search models and human-mediated secondary pollen deposition. *The Professional Geographer*, 77(2):91-103.
<https://doi.org/10.1080/00330124.2024.2434473>.

Wang, H.**, and J. Miller. (2023) How to improve joint suitability mapping for search space reduction? (Short Paper). In *12th International Conference on Geographic Information Science (GIScience 2023)*. Schloss Dagstuhl-Leibniz-Zentrum für Informatik

Mu, W., Tong, D., Grubestic, T.H., Liu, H.C., Helderop, E., Miller, J. and Bienenstock, E.J. (2023). Improving geoforensics with pollen quantification: A spatial perspective. *Annals of the American Association of Geographers*
DOI:10.1080/24694452.2023.2211155

Wang, H.**, Miller, J. Grubestic, T., and Jha, S. (2023). Using habitat suitability models for multi-scale forensic geolocation analysis. *Transactions in GIS* 27(3), pp.777-796 <https://doi.org/10.1111/tgis.13052>

Pardee, G.L., Ballare, K.M., Neff, J.L., Do, L.Q., Ojeda, D., Bienenstock, E.J., Brosi, B.J., Grubestic, T.H., Miller, J. Tong, D. and Jha, S., (2023). Local and landscape factors influence plant-pollinator networks and bee foraging behavior across an urban Corridor. *Land*, 12(2), p.362.

Franklin, R.S., Delmelle, E.C., Andris, C., Cheng, T., Dodge, S., Franklin, J., Heppenstall, A., Kwan, M.P., Li, W., McLafferty, S. and Miller, J.A., (2023). Making space in geographical analysis. *Geographical Analysis*, 55(2), pp.325-341.

Helderop, E., Bienenstock, E., Grubestic, T., Miller, J., Tong, D., Brosi, B., Jha, S. (2021). Network-based geoforensics: Connecting pollen and plants to place. *Ecological Informatics*. 66:101433

J. Miller (2021). Exploring the utility of movement parameters to make inferences about dynamic interactions in moving objects. *Transactions in GIS*. 25(5), pp.2701-2720 <https://doi.org/10.1111/tgis.12789>

Nelson, J.R., Grubestic, T.H., Miller, J. and Chamberlain, A.W., (2021). The equity of tree distribution in the most ruthlessly hot city in the United States: Phoenix, Arizona. *Urban Forestry & Urban Greening*, 59, p.127016.

Miller, J. and Grubestic, T.H., (2021). A spatial exploration of the halo effect in the 2016 US presidential election. *Annals of the American Association of Geographers*, 111(4), pp.1094-1109 <https://doi.org/10.1080/24694452.2020.1785271>

Tong, D., Grubestic, A., Mu, W., Miller, J, Helderop, E., Jha, S., Brosi, B.J. and Bienenstock, E.J., (2021). Identifying the spatial footprint of pollen distributions using the Geoforensic Interdiction (GOFIND) model. *Computers, Environment and Urban Systems*, 87, p.101615.

B. Hoover**, J. Miller, and J. Long (2020) Mapping areas of asynchronous-temporal interaction in animal telemetry data. *Transactions in GIS* 24(3):573-586.

J. Miller, Laffan, S., Skidmore, A., and Franklin, J. (2020). Modeling movement, distribution, diversity, and disturbance: introduction to the fifth special issue on spatial ecology. *International Journal of Geographical Information Science* 34:8, 1503-1507,

Schank, C.J**, Cove, M.V., Arima, E.Y., Brandt, L.S., Brenes-Mora, E., Carver, A., Diaz-Pulido, A., Estrada, N., Foster, R.J., Godínez-Gómez, O., Harmsen, B.J., and **Miller, J.** (2020). Population status, connectivity, and conservation action for the endangered Baird's tapir. *Biological Conservation*, 245, 108501.

Meyer, T., Holloway, P**, Christiansen, T.B*, **Miller, J.**, D'Odorico, P. and Okin, G.S., (2019). An assessment of multiple drivers determining woody species composition and structure: A case study from the Kalahari, Botswana. *Land*, 8(8): 122-136

Schank CJ**, Cove MV, Kelly MJ, Nielsen CK, O'Farrill G, Meyer N, Jordan CA, González-Maya JF, Lizcano DJ, Moreno R, Dobbins M, Montalvo V, Cruz Díaz JC, Pozo Montuy G, de la Torre JA, Brenes-Mora E, Wood MA, Gilbert J, Jetz W, and **Miller J.** (2019) A sensitivity analysis of the application of integrated species distribution models to mobile species: A case study with the endangered Baird's Tapir. *Environmental Conservation* 46 (3), 184-192

Miller, H.J., Dodge, S., **Miller, J.** and Bohrer, G., (2019). Towards an integrated science of movement: converging research on animal movement ecology and human mobility science. *International Journal of Geographical Information Science*: 33 (5), 855-876. <https://doi.org/10.1080/13658816.2018.1564317>

Rorres, C., Romano, M., **Miller, J.**, Mossey, J.M., Grubestic, T.H., Zellner, D.E. and Smith, G., (2018). Contact tracing for the control of infectious disease epidemics: Chronic Wasting Disease in deer farms. *Epidemics* 23(71-75).

Schank CJ**, Cove, M.V., Kelly, M.J., Mendoza, E., O'Farrill, G., Reyna-Hurtado, R., Meyer, N., Jordan, C.A., González-Maya, J.F., Lizcano, D.J. Moreno, R., Dobbins, M., Montalvo, V., Sáenz-Bolaños, C., Jimenez, E.C., Estrada, N., Díaz, J.C.C., Saenz, J., Spínola, M., Carver, A., Fort, J., Nielsen, C., Botello, F., Montuy, G.P., Rivero, M., de la Torre, J., Brenes-Mora, E., Godínez-Gómez, O., Wood, M., Gilbert, J., and **Miller, J.** (2017). Using a novel model approach to assess the distribution and conservation status of the endangered Baird's tapir. *Diversity & Distributions*. 23:1459–1471.

P. Holloway** and **J. Miller** (2017). A quantitative synthesis of the movement concepts used within species distribution modelling. *Ecological Modelling* 356(91-103) <https://doi.org/10.1016/j.ecolmodel.2017.04.005>

Shatz, A.J*, Rogan, J., Sangermano, F., **Miller, J.** and Elmes, A., (2016). Modeling the risk of spread and establishment for Asian longhorned beetle (*Anoplophora glabripennis*) in Massachusetts from 2008-2009. *Geocarto International*, 31(8), pp.813-831.

Dodge, S., Weibel, R., Ahearn, S.C., Buchin, M. and **Miller, J.**, (2016). Analysis of movement data. *International Journal of Geographical Information Science*, 30(5), pp.825-834.

Holloway, P**, **Miller, J.** and Gillings, S., (2016). Incorporating movement in species distribution models: how do simulations of dispersal affect the accuracy and uncertainty of projections? *International Journal of Geographical Information Science*, 30(10) pp.1-25 <https://doi.org/10.1080/13658816.2016.1158823>

J. Miller (2015), Towards a better understanding of dynamic interaction metrics for wildlife: a null model approach. *Transactions in GIS*, 19: 342–361.

J. Miller and P. Holloway** (2015). Incorporating movement in species distribution

models. *Progress in Physical Geography*. 39(6) 837-849.

N. Mishra*, K. Crews, J. **Miller**, and T. Meyer (2015) Mapping vegetation morphology types in Southern Africa savanna using MODIS time-series metrics: a case study of Central Kalahari, Botswana. *Land* 4(1):197-215.

Holloway, P**, & **Miller**, J. (2015). Exploring spatial scale, autocorrelation and nonstationarity of bird species richness patterns. *ISPRS International Journal of Geo-Information*, 4(2), 783-798.

T. Grubestic, J. **Miller**, and A.T. Murray (2014). Geospatial and geodemographic insights for diabetes in the United States. *Applied Geography* 55: 117-126.

P. Holloway** and J. **Miller** (2014) Uncertainty analysis of step-selection functions: the effect of model parameters on inferences about the relationship between animal movement and the environment. *Lecture Notes in Computer Science* 8728, 48-63

J. **Miller** (2014). Virtual species distribution models: using simulated data to evaluate aspects of model performance. *Progress in Physical Geography* 38:1, 117-128.

S. McCauley*, J. Rogan, and J. **Miller** (2013). Modeling forest species distributions in a human-dominated landscape in Northeastern, USA. *International Journal of Applied Geospatial Research* 4:3, 39-57.

J. **Miller** (2012). Species distribution models: Spatial autocorrelation and nonstationarity. *Progress in Physical Geography* 36:5, 681-692.

J. **Miller** (2012). Using spatially explicit simulated data to analyze animal interactions: a case study with brown hyenas in Northern Botswana. *Transactions in GIS* 16(3):271-291.

J. **Miller** and R.Q. Hanham (2011). Spatial nonstationarity and the scale of species-environment relationships in the Mojave Desert, CA. *International Journal of Geographical Information Science* 25:3, 423-438.

J. **Miller** (2010). Species distribution modeling. *Geography Compass* 4(6):490-509.

B. Ghimire, J. Rogan, and J. **Miller** (2010). Contextual land-cover classification: incorporating spatial dependence in land-cover classification models using random forests and the Getis statistic. *Remote Sensing Letters* 1:1, 45-54.

R. Aspinall, J. **Miller**, and J. Franklin (2009). Calculations on the back of a climate envelope: addressing the geography of species distributions. *Proceedings of the National Academy of Sciences* 106(16): E44.

J. Rogan, J. Franklin, D. Stow, J. **Miller**, C. Woodcock, and D. Roberts (2008). Mapping land cover modifications over large areas: A comparison of machine learning algorithms. *Remote Sensing of Environment* 112(2272-2283).

J. **Miller**, J. Franklin, and R. Aspinall (2007). Incorporating spatial dependence in predictive vegetation models. *Ecological Modelling* 202(225-242).

A. Hessel, J. **Miller**, J. Kernan*, and D. McKenzie (2007). Mapping paleo-fire boundaries from binary point data: comparing interpolation methods. *The Professional Geographer* 59(1):87-104.

J. **Miller** and J. Franklin (2006). Explicitly incorporating spatial dependence in

predictive vegetation models in the form of explanatory variables: a Mojave Desert case study. *Journal of Geographical Systems* 8:411-435.

J. Miller (2005). Incorporating spatial dependence in predictive vegetation models: residual interpolation methods. *The Professional Geographer* 57(2): 169-184.

J. Rogan, **J. Miller**, D. Stow, J. Franklin, L. Levien and C. Fischer, (2003). Land-cover change monitoring with classification trees using Landsat TM and ancillary data. *Photogrammetric Engineering and Remote Sensing* 69(7): 793-804.

J. Miller and J. Franklin (2002). Modeling the distribution of vegetation alliances using generalized linear models and classification trees with spatial dependence. *Ecological Modelling*, 157: 227-247.

Peer-reviewed book chapters

J. Miller and E. Dodge** (in review). GIS & Technology for conservation. Solicited for GIS Book of Knowledge (J. Wilson & D. Sinton, eds)

Wang, H.** and **Miller, J.A.**, 2025. Geoforensic Search Space Modeling: Applications to Documented Cases. In *New Research in Crime Modeling and Mapping Using Geospatial Technologies* (pp. 63-80). Cham: Springer Nature Switzerland.

Jordan, C., B. Hoover**, A. Dans, C. Schank**, and **J. Miller** (2019) The Impact of Hurricane Otto on Baird's Tapir Movement in Nicaragua's Indio Maíz Biological Reserve, pgs 5-19 in Movement Ecology of Neotropical Forest Mammals (R. Reyna and C. Chapman, eds.)

J. Miller and B. Hoover** (2018). An exploratory analysis of the effects of spatial and temporal scale and transportation mode on anonymity in human mobility trajectories. Human Dynamics Research in Smart and Connected Communities (S-L Shaw and D. Sui, eds). Pgs. 149-162. Springer

P. Holloway** and **J. Miller** (2018). Analysis and modeling of movement. Comprehensive Geographic Information Systems: Vol. 1 GIS Methods and Techniques (T. Cova and M. Tsou, eds). Pgs 162-180. Elsevier

J. Miller and P. Holloway** (2017). Niche theory and models, in The International Encyclopedia of Geography: People, the Earth, Environment, and Technology, D. Richardson, ed. Wiley & Sons.

KA Crews and **J. Miller** (2016). The amended Tobler's Law of GIS for STEM for higher education: Both near and distant things matter. Ed DJ Cowen. GIS and STEM in Higher Education. ESRI Press: Redlands, California.

J. Miller and J. Franklin (2010). Incorporating spatial autocorrelation in species distribution models, in Handbook of Applied Spatial Analysis, M. Fischer and A. Getis, eds. Springer Pubs, pgs. 685-702.

J. Franklin and **J. Miller** (2009). Statistical methods- Modern Regression, in Spatial Inference and Prediction with Biogeographical Data, J. Franklin, author. Cambridge University Press, pgs. 113-153.

J. Miller and J. Rogan (2007). Using GIS and remote sensing for ecological mapping and monitoring, in Integration of GIS and Remote Sensing, V. Mesev, Ed. Wiley & Sons, pgs. 233-268.

J. Rogan and **J. Miller** (2006). Integrating GIS and remotely sensed data for

mapping forest disturbance and change, in Understanding Forest Disturbance and Spatial Pattern: Remote Sensing and GIS Approaches, M. Wulder and S. Franklin, Eds., CRC Press, Boca Raton, FL, pgs. 133-171.

J. Franklin, T. Keeler-Wolf, K. Thomas, D. Shaari, P. Stine, J. Michaelsen, and **J. Miller** (2001). Stratified sampling for field survey of environmental gradients in the Mojave Desert Ecoregion, in GIS and Remote Sensing Applications in Biogeography and Ecology, A. Millington, S. Walsh and P. Osborne, Eds., Kluwer Academic Publishers, Netherlands, pgs. 229-253

Peer-reviewed extended abstracts

Wang, H.,** **Miller, J.**, Grubestic, T.H. and Jha, S. (2022) November. A Framework for Using Ensemble Species Distribution Models for Geographic Attribution in Forensic Palynology. In 2022 IEEE International Symposium on Technologies for Homeland Security (HST) (pp. 1-7). IEEE.

J. Miller (2019) Using movement parameters to infer dynamic interactions between moving object pairs. GeoComputation Conference, Queenstown, New Zealand

J. Miller, M. Puotinen, and B. Radford (2019) Using local maps of spatial accuracy for benthic habitat models. GeoComputation Conference, Queenstown, New Zealand.

J. Miller (2017). A computational movement analysis approach for modelling interactions between pairs of moving objects. GeoComputation Conference, Leeds, UK.

J. Miller (2015) Using a null model approach to explore how dynamic interactions in wildlife are analyzed. GeoComputation conference, Richardson, Texas.

J. Miller (2014). Towards a better understanding of dynamic interaction metrics for wildlife: a comparison of null models. GIScience Meeting, Vienna, Austria.

P. Holloway** and **J. Miller** (2012). A novel modeling technique to incorporate regular movement into species distribution models. Workshop on Time-GIScience, Columbus, Ohio.

J. Miller (2011). To what extent are Brown Hyena pairs in Northern Botswana interacting? An exploration using spatially explicit simulated movement patterns. Council on Spatial Information Theory (COSIT) Meeting, Belfast, Maine.

J. Miller and G. Maude (2010). Using correlated random walks to analyze interaction between Brown Hyena pairs in Northern Botswana, GIScience Meeting, Zurich, Switzerland.

J. Miller (2009). Spatial non-stationarity and scale of species-environment relationships in the Mojave Desert, CA. International GeoComputation Conference, Sydney, Australia.

J. Miller (2007). Using simulated data to explore the effects of spatial structure, sampling strategy, and statistical methods on species distribution models. GeoComputation Conference, Maynooth, Ireland.

J. Miller (2005). Incorporating spatial dependence in predictive vegetation models: Mojave Desert case study. GeoComputation Conference, Ann Arbor, MI.

EDITED BOOKS

J. Miller, D. O'Sullivan, and N. Wiegand, eds. (2016). *Geographic Information Science: 9th International Conference GIScience 2016*, Montreal, Canada, September 27-30, 2016, Proceedings (Vol. 9927). Springer. (338 pgs)

BOOK REVIEWS

J. Miller (2009). A Review of The Handbook of Geographic Information Science, *Annals of the Association of American Geographers* 99(3):637 — 639.

C. D'Alessandro-Scarpari, G. Elmes, **J. Miller**, D. Weiner (2006). A Review of Geography and Technology, *Progress in Human Geography* 30:675-677.

RESEARCH GRANTS

Awarded (total amount of external awards: ~\$7m. PI J. Miller total amount: ~\$3m)

Army/Department of Defense Multidisciplinary University Research Initiative (MURI), Networked Palynology Models of Pollen and Human Systems (NYMPHS). 2019-2023, total amount: \$6.2 million. **J. Miller** PI of UT sub-contract: \$2 million.

National Science Foundation Grant (#1560727) Advancing Movement and Mobility Science by Bridging Research on Human Mobility and Animal Movement Ecology workshop, Total award (through PI H.J. Miller, Ohio State) \$69,999/ 2 years (2016-2018); **J. Miller**: PI of UT subcontract \$28,535.

UT Center for Identity Summer Research Grant, A computational movement analysis framework for exploring anonymity in human mobility trajectories, July-August 2015 (\$23,100).

National Science Foundation Grant (#1424920), Developing a novel framework for analyzing dynamic interactions in animal movement data, **J. Miller**: Sole PI, 2014-2017 (no-cost extension to 2019) (\$264,988).

National Institutes of Health R21 Grant, Development and validation of novel prospective GPS/GIS based exposure measures, PI: Jacqueline Kerr (UC San Diego), **J. Miller**: consultant. 2012-2014.

UT Vice President of Research Grant, Developing a spatially explicit framework to analyze animal movement and interaction: a case study using brown hyena in Northern Botswana, 2011-2012.

National Science Foundation Grant (#0962198), Spatial Autocorrelation and Species Distribution Models: Analyzing the Effects of Spatial Structure, Sampling Strategy, Statistical Methods, and Scale Using Simulated Data, **J. Miller**: Sole PI, 2010-2013 (no-cost extension to 2015) (\$266,863).

WVU Eberly College of Arts and Sciences Research Proposal Preparation Mini-Grant, June 2006.

National Science Foundation Grant (#0452389), Spatial inference and prediction with biogeographical data, **J. Miller**: Co-PI (with Janet Franklin, SDSU: \$250,000), 2005-2008 (with no-cost extension to 2009) (**J. Miller**: \$106,106).

Shared Visions Grant, San Diego State Foundation, San Diego, CA. Dec. 2000.

Pending

UT College of Natural Sciences Catalyst 2.0 Grant, Integrating genomics and AI to predict spatial patterns of species decline. M. Matz (PI). G. Mai (Co-PI), J. Miller (Co-PI), \$99,963.

HONORS/AWARDS/FELLOWSHIPS

1st Place, AAG SAM Student Paper Competition, Haoyu Wang, (Supervisor & co-author), Honolulu, HI April 2024

UT Faculty Research Assignment, Fall 2020.

Provost's FII Special Funding Retention Award, UT-Austin (2015-2017; 2017-2019).

Visiting Research Fellow at Australian Institute of Marine Science (AIMS), Perth, Australia, November-December 2015

UT Faculty Research Assignment, Fall 2015.

2nd place, Best paper. 2015 International Conference on GeoComputation. May 20-23. Richardson, TX.

UT Liberal Arts Summer Research Assignment, June-August 2013

Association of American Geographers (AAG) Biogeography Specialty Group Travel Grant, to attend the International Biogeography Society Meeting in Heraklion, Crete, Jan. 7-11, 2011.

UT College of Liberal Arts Research Fellowship, Fall 2009

UT Liberal Arts Summer Research Assignment, June-August 2008

AAG - NSF Travel Grant, to attend IGU conference in Brisbane, Australia, July 3-7, 2006.

ESRI-UCGIS Young Scholar Award, UCGIS Summer Meeting, Adelphi, MD, Oct. 20-23, 2004.

WVU Summer Grant for Course Development, for GEOG 150, "Digital Earth," June 2004. 1 month summer salary

J. Warren Nystrom Dissertation Award, AAG Centennial Meeting, Philadelphia, PA, March 14-19th, 2004.

Co-author, Leica Geosystems Award for Best Scientific Paper in Remote Sensing for "Land-Cover Change Monitoring with Classification Trees using Landsat TM Ancillary Data" (PE&RS; 69-7, pp 793-804). 2004

Best Student Presentation, 18th Annual Symposium, International Association for Landscape Ecology-US Chapter (US-IALE), Banff, Alberta, Canada, April 2 – 6, 2003.

NASA-MSU Professional Enhancement Award, 18th Annual Symposium, International Association for Landscape Ecology-US Chapter (US-IALE), Banff, Alberta, Canada, April 2 – 6, 2003.

1st Place, AAG GIS Specialty Group Honors Student Paper Competition, 99th Annual AAG Meeting, New Orleans, LA, March 4 - 8, 2003.

NCGIA Travel Grant, GIScience Conference, Boulder, CO, September 25 - 28,

2002.

Most Analytical Poster Award: ESRI User's Conference, San Diego, CA, July 8 - 12, 2002.

INVITED TALKS/WORKSHOPS

sessions I organized or co-organized

Specialist Meeting, Geographical Approaches to Conservation. UCSB, Santa Barbara, CA. Dec. 6-8, 2024.

Computing Geographically: Bridging GIScience and Geography, Author meets Critics session. Invited panelist, 2024 AAG meeting, April 19, 2024. Honolulu, Hawaii

Advances in GIScience Research. H. Wang**, J. Miller, T. Grubestic, and S. Jha. Using habitat suitability models for multiscale forensic geolocation analysis. Invited presenter, ESRI User Conference, San Diego, CA, July 2023

Dangermond Lecture, UCSB Geography Department, May 16, 2023, Santa Barbara, CA

Plenary Speaker, Spatial Analysis & Modeling (SAM) Specialty Group, American Association of Geographers Meeting March 26, 2023, Denver, CO (postponed from 2022).

Advances in GIScience Research. B. Hoover**, J. Miller, and J. Long. Mapping areas of asynchronous-temporal interaction in animal-telemetry data. Invited presenter, ESRI User Conference, July 2020 (virtual)

Career Routes in Movement Ecology: The Academic World and Beyond, Invited panelist, Gordon Research Seminar, Renaissance Tuscany Il Ciocco in Lucca (Barga), Italy March 2-4, 2019.

Smithsonian Mason School of Conservation Workshop on "Linking remote animal detection and movement data with macrosystem environmental datasets and networks" Oct. 21-23, 2018. Invited participant

Invited seminar, Institute of Biodiversity and Ecosystem Dynamics (IBED), University of Amsterdam (Amsterdam, Netherlands), April 26, 2018.

Emerging trends in movement analytics, from observation to prediction of movement, Invited panelist, 2018 AAG Meeting, New Orleans, LA

A Globe-Shaped Crystal Ball: The Next Fifty Years of Geographical Analysis, Invited panelist, 2018 AAG Meeting, New Orleans, LA.

Keynote speaker at Lorentz Workshop on Movement: New Sensors, New Data, New Challenges. Lorentz Center (Leiden, Netherlands), August 21-25, 2017.

Dagstuhl Seminar on "From Observations to Prediction of Movement" (17282). Schloss Dagstuhl (Wadern, Germany), July 9-14, 2017. Invited participant

Ohio State "Workshop on Analyzing Movement and Mobility within Geographic Context". Co-organizer. Columbus, Ohio May 11-12, 2017. (NSF #1560727)

UT-Austin "Workshop on measuring and analyzing interactions among mobile entities." Organizer. Austin, Texas Nov. 10-11, 2016. (NSF #1560727)

Advances in GIScience Research, J. Miller, "Towards a better understanding of

dynamic interaction metrics for wildlife: a null model approach". Invited presenter, ESRI User Conference, San Diego, CA. July 2015

Texas A&M University, Geography Seminar Series, "Towards a better understanding of dynamic interaction metrics for wildlife: a null model approach" Feb. 6, 2015.

University of Texas, LBJ School of Public Affairs Doctoral and Faculty Colloquium, "Some insights into using a null model approach for analyzing interactions between wildlife individuals." Oct. 16, 2014.

Workshop on Analysis of Movement Data, GIScience (Vienna, Austria), Sep. 23, 2014.

Clark University, Conservation seminar, Worcester, MA, "Spatial statistics in ecology," Mar. 21, 2014.

Clark University, Conservation seminar, Worcester, MA, "Using simulated data to analyze animal interactions: a case study with brown hyenas in Northern Botswana." Feb. 22, 2013.

University of North Texas Department of Geography, Denton, TX, "Using simulated data to analyze animal interactions: a case study with brown hyenas in Northern Botswana." Sep. 28, 2012.

Advances in GIScience Research. J. Miller, Analyzing movement & interaction of brown hyena in Northern Botswana. Invited presenter, ESRI User Conference, San Diego, CA, July 2012

DIMACS/MBI Workshop in Quantitative Landscape Ecology and Environmental Sustainability, University of KwaZulu-Natal, Durban, South Africa, "Using simulated data to quantify dynamic interactions between pairs of individuals", July 6, 2012.

Clark University Graduate School of Geography, Worcester, MA, "Virtual Biogeography: Using simulated data as a species modeling tool." Sep. 16, 2011.

Workshop on Identifying Objects, Processes, and Events from Spatio-temporal Data, COSIT (Belfast, ME). Sep. 12, 2011.

University of Texas Department of Geography and the Environment, Austin, TX, "Virtual Biogeography: Using simulated data as a species modeling tool." Feb. 18, 2011.

University of Utah Department of Geography, Salt Lake City, UT, "Virtual Biogeography: Using simulated data as a species modeling tool." Nov. 19, 2010.

Movement Pattern Analysis Workshop, University of Zurich, Switzerland, Sep. 14, 2010.

Arizona State University School of Geographical Sciences Colloquium Series, Tempe, AZ, "The impact of pattern and place on predictive vegetation models: A Mojave Desert case study." Feb. 2, 2007

Clark University Graduate School of Geography Colloquium, Worcester, MA, "Species and Space: The impact of pattern and place on predictive vegetation models." Nov. 17, 2005.

San Diego State University Department of Geography Colloquium, San Diego, CA, "Incorporating spatial dependence in predictive vegetation models," Nov. 12, 2004

Workshop on Generalized Regression Analysis and Spatial Prediction: Grasping ecological patterns from species to landscape, Riederalp, Switzerland, Aug. 16-20, 2004.

Workshop on Advances in GLM/GAM Modeling: from species' distribution to environmental management. Riederalp, Switzerland, Aug. 6 – 10, 2001.

CONFERENCE PRESENTATIONS

sessions I organized or co-organized; ** advisees, * students on whose committees I served

J. Miller Recent advances in computational movement analysis, 2 sessions. AAG Meeting, Detroit, MI March 2025.

J. Miller and M. Joo** “Trajectory simulation methods for modeling dynamic interactions” AAG Meeting, Detroit, MI, March 2025

M. Joo** and **J. Miller** “Assessing Joint Potential Path Areas (jPPA) for detecting dynamic interactions” AAG Meeting, Detroit, MI, March 2025

H. Wang** and **J. Miller** “Using Species Distribution Modeling for Geoforensic Analyses” AAG Meeting, Honolulu, HI, April 2024.

J. Miller “Using movement parameters to make inferences about dynamic interactions in moving objects”, GIScience Conference. September 2023, Leeds, U.K.

H. Wang** and **J. Miller** “How to Improve Joint Suitability Mapping for Search Space Reduction?” GIScience Conference. September 2023, Leeds, U.K.

H. Wang** and **J. Miller** “Habitat Suitability Modeling for Geoforensic Analyses”. AAG Meeting. Denver, CO. April 2023.

P. Holloway** and **J. Miller** “The effects of dispersal on projections of species distribution: a simulation approach“. Species on the Move Conference, Aug. 2019, Kruger National Park, South Africa.

D. Levine*, K. Crews, and **J. Miller** “Spatial autocorrelation analyses and species distribution modeling uncover biases in citizen science engagement patterns across Texas’ Blackland Prairies” AAG Conference, April 2019, Washington, D.C.

J. Miller “A hybrid point-path approach for investigating interactions between pairs of moving objects”. Analysis of Movement Data Workshop (in concert with GIScience conference). Melbourne, Australia, Aug. 2018.

J. Miller. “Measuring path-based dynamic interactions between moving objects”. AAG Meeting, Boston, MA. April 2017.

J. Miller. “Using movement parameters to characterize dynamic interactions in wildlife: a null model approach”. AAG Meeting, San Francisco, CA. April 2016.

J. Miller. “Towards a better understanding of dynamic interaction metrics for wildlife”. AAG Meeting, Chicago, IL. April 2015

J. Miller, “A novel framework for analyzing interactions between individuals: a case study using brown hyenas in northern Botswana’ International Statistical Ecology Conference, July 2014, Montpellier, France

J. Miller, Virtual Biogeography: A framework for analyzing dynamic interactions (between animals): a case study using brown hyenas in Botswana, AAG Meeting, Los

Angeles, CA April 11, 2013

J. Miller, Virtual Biogeography: Using simulated data as a species modeling tool, AAG Meeting, New York, NY Feb. 26, 2012.

P. Holloway and J. Miller**, Using simulated data to explore the effects of sampling strategy and density on species distribution models, AAG Meeting, New York, NY Feb. 26, 2012.

J. Miller, To what extent are Brown Hyena pairs in Northern Botswana interacting? An exploration using spatially explicit simulated movement patterns, Conference on Spatial Information Theory, Belfast, ME. Sep. 12-16, 2011.

J. Miller, Using spatial simulation to analyze dynamic interactions between Brown Hyena pairs in Northern Botswana, AAG Meeting, Seattle, WA April 12 – 16, 2011.

J. Miller and G. Maude, Using spatial simulation to analyze interaction between Brown Hyena pairs in Northern Botswana, International Biogeography Society Meeting, Heraklion, Greece, Jan. 7-11, 2011.

J. Miller and G. Maude, Using correlated random walks to analyze interaction between Brown Hyena pairs in Northern Botswana, GIScience Meeting, Zurich, Switzerland, Sep. 15-17, 2010.

J. Miller, Modeling Species' Distribution and Movement Roundtable, AAG Meeting, Washington D.C., Apr. 13-18, 2010.

J. Miller, Spatial non-stationarity and scale of species-environment relationships in the Mojave Desert, CA. International Geocomputation Conference, Sydney, Australia, Nov. 30-Dec. 2, 2009.

J. Miller, Species Distribution Modeling Roundtable, AAG Meeting, Las Vegas, NV, Mar 24-27, 2009.

J. Miller, Scale and spatial non-stationarity of species-environment relationships in the Mojave Desert, CA. International Biogeography Society, Merida, Mexico, Jan. 8-12, 2009.

J. Miller, Scale and spatial non-stationarity of species-environment relationships in the Mojave Desert, CA. GIScience Meeting, Park City, UT, Sep. 23-26, 2008.

J. Miller, Species distribution modeling roundtable, AAG Meeting, Boston, MA, Apr. 15-19, 2008

B. Gilmer and J. Miller**, Predictive vegetation models: a comparison of model combination approaches. AAG Meeting, San Francisco, CA, April 17-21, 2007.

B. Gilmer and J. Miller**, Predictive vegetation models: a comparison of model combination approaches. Landscape Ecology, Tucson, AZ, April 9-13, 2007.

J. Miller, Using simulated data to explore the effects of spatial structure, sampling strategy, and statistical methods on species distribution models. Geocomputation Meeting, Maynooth, Ireland, Sep 3-6, 2007.

J. Miller, How do spatial structure and sampling strategies affect modeling methods used with spatially autocorrelated binary species data? GIScience Meeting. Münster, Germany, Sep 20-23, 2006.

J. Miller, The influence of pattern and place on species distribution models.

International Geographical Union, Brisbane, Australia, July 3-7, 2006

J. Miller and B. Gilmer**, A comparison of statistical models and accuracy measures for species distribution models: a Mojave Desert case study. US-IALE Meeting. San Diego, CA, March 28-April 1, 2006.

J. Miller and B. Gilmer**, A comparison of statistical models and accuracy measures for species distribution models: a Mojave Desert case study. AAG Meeting. Chicago, IL, March 7-11, 2006.

P. Scull and **J. Miller**. Using multivariate adaptive regression splines to assess the extent to which climate controls landscape-scale soil carbon variability. AAG Meeting, Chicago, IL, March 7-11, 2006

J. Miller. A comparison of methods used to incorporate spatial dependence in predictive vegetation models. Geocomputation Meeting, Ann Arbor, MI, Aug 1-3, 2005.

J. Miller. A spatially explicit accuracy assessment of two predictive vegetation modeling methods. AAG Meeting, Denver, CO, April 4-10, 2005.

J. Miller and J. Rogan. A quantitative comparison of non-parametric change detection classification techniques for efficient large area map updating. American Society of Photogrammetric Engineering and Remote Sensing Conference, Baltimore, MD, Mar 7-11, 2005.

J. Miller and J. Franklin. A comparison of methods for incorporating spatial dependence in predictive vegetation models. Spatial Accuracy/Environmetrics Joint Meeting, Portland, ME, Jun 28 - July 1, 2004.

J. Miller and J. Franklin. Incorporating spatial dependence in predictive vegetation models. US-IALE Meeting, Las Vegas, NV, March 30 – April 2, 2004.

J. Miller and J. Franklin. Incorporating spatial dependence in predictive vegetation models: residual interpolation methods. AAG Nystrom Competition. Philadelphia, PA, March 14 - 19, 2004.

J. Miller and J. Franklin. A comparison of methods for incorporating spatial dependence in predictive vegetation models. US-IALE Meeting, Banff, Alberta, CA, April 2 – 6, 2003.

J. Miller and J. Franklin. Incorporating spatial dependence in predictive vegetation models. AAG-GIS SG Honors Student Paper Competition. New Orleans, LA, March 4 - 8, 2003.

J. Miller and J. Franklin. Incorporating spatial dependence in predictive vegetation maps. GIScience 2002, Boulder, CO. Sep. 25-28, 2002.

J. Miller and J. Franklin. Vegetation modeling in the Mojave Desert with spatial dependence. 22nd Annual ESRI International User Conference, San Diego, CA July 8 -12, 2002.

J. Miller and J. Franklin. Modeling vegetation alliances in the Mojave Desert with spatial dependence. 98th Annual AAG Meeting, Los Angeles, CA March 19-23, 2002.

J. Miller and J. Franklin. Modeling the distribution of vegetation alliances in the Mojave Desert Ecoregion. 97th Annual AAG Meeting, New York, NY Feb. 28 - Mar. 3, 2001.

J. Miller and J. Franklin. Predictive modeling in the Mojave Desert with spatial dependence. 96th Annual AAG Meeting, Pittsburgh, PA April 4-8, 2000.

J. Miller. A Biogeographical investigation of raccoon-borne rabies in the Mid-Atlantic States. 93rd Annual AAG Meeting, Ft. Worth, TX April 1-5, 1997

GRADUATE STUDENT SUPERVISION

University of Texas:

Minsoo Joo Ph.D, Geography, **Committee chair** (2024-present)
Erika Dodge, Ph.D, Geography, **Committee chair** (2023-present)
Haoyu Wang, Ph.D, Geography, **Committee chair** (2021-present)
Brendan Hoover, Ph.D., Geography, **Committee chair** (completed 2020) Geospatial Data Statistician, DOE
Cody Schank, Ph.D., Geography. **Committee chair** (completed 2018): Spatial Data Scientist, Linked in, Austin, TX
Paul Holloway, Ph.D., Geography, **Committee chair** (completed 2016): Lecturer (equivalent to tenured), University College Cork, Cork Ireland
Mattiyaahu Baron, M.A., Geography, **Committee chair** (completed 2022)
Jillian Ames, M.A., Geography, **Committee chair** (completed 2016)
Renata Ponte, M.A., Geography, **Committee chair** (completed 2012)

Abdulla Al Kafy, Ph. D, Geography, Committee member (2024-present)
Stephanie Zeller, Ph.D, Geography committee member (2023-present)
Pedro Vasconcelos, Ph.D, Geography, Committee member (2023-present)
Daniel Silva, Ph.D, Geography, Committee member (2022- present)
Sara Eshleman, Ph.D., Geography, Committee member (completed 2024)
Alex Marden, Ph.D., Geography, Committee member (completed 2023)
Dan Levine, Ph.D., Geography, Committee member (completed 2022)
Leila Donn, Ph.D., Geography, Committee member (completed 2022)
Dan Levine, M.A., Geography. Committee member (completed 2018)
Xuebin Yang, Ph. D., Geography, Committee member (completed 2018)
Justin Laue, M.A., Geography, Committee member (completed 2014)
Niti Mishra, Ph.D., Geography, Committee member (completed 2014)
Dylan Malcomb, M.A., Geography, Committee member (completed 2012)
Ophelia Wang, Ph.D., Geography, Committee member (completed 2011)
Othoniel Domínguez, M.A., Geography, Committee member (completed 2011)
Maria José LaRota, M.A., Geography, Committee member (completed 2011)
Lazarus Pomara, Ph.D., Geography, Committee member (completed 2009)

Other UT departments:

Rebecca Carden, Ph.D., Biology, Committee member (completed 2025)
Brian Stokes, Ph.D., Biology, Committee member (2022-present)
Deidre Zoll, Ph.D., Community and Regional Planning, Committee member (completed 2021)
Stavana Strutz, Ph.D., Biology, Committee member (completed 2018)
Christina Andruks, Ph.D., Biology, Committee member (completed 2014)
Kelly Pierce, Ph.D., Biology, Committee member (completed 2014)
Matthew Moskwik, Ph.D., Biology, Committee member (completed 2014)
Yubing Wang, Ph.D. Civil and Environmental Engineering, Committee member (completed 2014)
Alejandra Cuesta, Ph.D., Public Affairs, Committee member (completed 2012)

West Virginia University:

Ben Gilmer, M.A., Geography, **Committee chair** (completed May 2007)

Catalin Demian, M.A., Geography, **Committee chair** (completed May 2007)
Jim Kernan, Ph.D., Geography, Committee member (completed September 2008)

External:

Mae Lacey, M.S. Spatial Data Science, Penn State University, Committee member (2022)
Saeed Rahimi, Ph.D. University of Otago, External reviewer (2021)
Andrew Shatz, M.A., Clark University, Committee member (2013)
Shi Haijing, Ph.D. University of New South Wales, External reviewer (2012)
Steve McCauley, Ph.D., Clark University, Committee member (2009)
Cordelia Moore, Ph.D. University of Western Australia, External reviewer (2009)
Ashley Curtis, M.A., Clark University, Committee member (2008)
Frederique Olivier, Ph.D. University of Tasmania, External reviewer (2006)

UNDERGRADUATE STUDENT SUPERVISION

Arianna Gonzalez, B.A., Geography, **Capstone adviser** (completed 2025)
John Gallander, B.S., Environmental Science-Biology track, **Capstone adviser** (completed 2025)
Zhewei Chen, B.S., Environmental Science-Biology track, **Capstone adviser** (completed 2024)
Shakkhar Biswas, B.A., Geography & Computer Science, **Honors thesis adviser** (completed 2019)
Rachel Snaveley, B.A., Geography, **Honors thesis adviser** (completed 2015)
Maggie Houchen, B.A., Geography, Honors thesis reader (completed 2012)
Andrew Townsend, B.A., Geography, Honors thesis reader (completed 2012)
Allison Bullock, B.A., Geography, Honors thesis reader (completed 2010)
Isaac Sasson, Portfolio in Applied Statistical Modeling, **Adviser** (completed 2010)

PROFESSIONAL SERVICE

University of Texas

Department of Geography and the Environment:

Chair, Spatial data science search committee (2023-2024)
Graduate admissions committee (2007-2018; 2021-2022)
Honors program director (2010-2022)
Department representative at UT Spring Commencement (May 2010, May 2011, May 2013, May 2018, May 2024)
Human Geography faculty search committee (2013)
Undergraduate committee (2013 – 2014)
Colloquium chair (Spring 2009, 2014- 2016)
Merit committee (2009, 2014-2016)
External chair search committee (2012)
GIScience faculty search committee (2010)
Department representative at COLA Parents' Dinner (2007-2011)
Physical Geography faculty search committee (2008)
Department representative at COLA Commencement (2007, 2023)
Health Geography faculty search committee (2007)
Minority Liaison (2007-2010)
Chair, Department Computer committee (2008- 2013)

College/University:

Department Chair (2022-)
Reviewer, Ransom Fellows research awards (2022)

Member, Quantitative Reasoning (QR) Flag Committee (2016- 2019)
Reviewer, UT Vice Provost of Research awards (2013)
UT College of Liberal Arts Faculty IT Advisory Committee (2010 – 2013)
Associated Faculty, UT Division of Statistics and Scientific Computing (2009 – present)

International/Discipline Service:

Journals:

Editorial Board, *Computers, Environment and Urban Systems* (2019-present)
Associate Editor, *Geographical Analysis* (2017 – present)
Editorial Board, *International Journal of Geographical Information Science* (2022-present)
Associate Editor, *International Journal of Geographical Information Science*, (2018-2022)
Progress Reports editor, *Progress in Physical Geography*, (2014- 2020)

Conferences:

International GIScience Conference steering committee (2017- present)
Program committee, International GIScience Conference, 2025, Christchurch, New Zealand
Program committee, International GIScience Conference (~~2020~~ rescheduled 2021). Poznań, Poland
Program committee, Auto-Carto (2020). Redlands, California.
Program committee, International GIScience Conference (2018). Melbourne, AU
Program Co-Chair, International GIScience Conference (2016). Montreal, CA.
Site Selection committee, US Chapter of International Association of Landscape Ecology (2010-2017)
Programme committee, International Geocomputation Conference (2009). Sydney, AU

Other discipline service:

Elected, AAG Spatial Analysis & Methods (SAM) SG, Board member (2013-2016).
Selection committee, William L. Garrison Award for Best Dissertation in Computational Geography (2010).
Elected, AAG GIS Specialty Group Chair (2008-2009)
Elected, AAG GIS Specialty Group Vice-Chair (2007-2008)
Elected, AAG GIS Specialty Group Academic Councilor (2005-2007)
Judge, Sigma Xi Research Day, WVU, (April 2006)
Selection committee, UCGIS Young Scholar Awards, (May 2005)

Research review panel service:

National Science Foundation, Dynamics of Integrated Socio-Environmental Systems (DISES) panel (2021-2024)
National Science Foundation, Doctoral dissertation research improvement panel (2013- 2015).
National Science Foundation, Partnerships for International Research and Education (PIRE) Reverse Site Visit Panel (2014)

Proposal reviews:

(2018) The Leverhulme Trust
(2017) The Netherlands Organisation for Scientific Research (NWO, the Dutch Research Council), Accelerating Scientific Discovery (ASDI 2017) Enhancing Data- and Computer-Intensive Research.
(2016) Israeli Ministry of Science, Technology and Space Research Program,

(2014) DoD's Strategic Environmental Research and Development Program,
 (2010) Hungarian Scientific Research Fund (OTKA),
 (2008) Kansas State University Dept. of Geography,
 (2008 – present) National Science Foundation, ad hoc reviews

Manuscript/Book proposal reviews:

(2024) D. Lieske, *Species Distribution Modeling: A Primer*. Routledge
 (2019) C. Bone and A. Lobben, *Our Digital Earth*. Macmillan
 (2019) C. Brunsdon and L. Comber, *An Introduction to R for Spatial Analysis and Mapping*. Sage.
 (2011) E-book proposal for *Remote Predictive Mapping (RPM) of Northern Environments*. Bentham Science Publishers
 (2009) Franklin, J. *Spatial Inference and Prediction with Biogeographical Data* (with the exception of chapter 6, which I co-authored). Cambridge University Press
 (2009) Chang, *Introduction to Geographic Information Systems* (reviewed 5th ed for 6th ed). McGraw-Hill.
 (2008) McKenzie, D. et al., Scaling laws and complexity in fire regimes, Chapter 2 in *The Landscape Ecology of Fire*. Springer-Verlag.

Program reviews:

(10/2025) Department of Geography & Environmental Studies, University of New Mexico
 (2/2026) School of Environment, Society & Sustainability, University of Utah

Article reviews for the following journals

- *Annals of the AAG,*
- *Applied Geography,*
- *Applied Vegetation Science,*
- *BioScience,*
- *Biological Invasions,*
- *Canadian Journal of Remote Sensing,*
- *Computers, Environment & Urban Systems*
- *Diversity and Distributions,*
- *Ecography,*
- *Ecological Modelling,*
- *Ecological Monographs,*
- *Ecological Applications,*
- *Ecology,*
- *Ecological Monographs,*
- *Journal of Applied Ecology,*
- *Journal of Biogeography,*
- *Journal of Geographical Systems,*
- *Journal of Spatial Information Sciences,*
- *Journal of Vegetation Science,*
- *Geocarto International,*
- *Geographical Analysis,*
- *International Journal of Geographic Information Science,*
- *International Journal of Remote Sensing,*
- *Landscape Ecology,*
- *Marine Ecology Progress,*
- *Methods in Ecology & Evolution,*
- *Movement Ecology,*
- *Photogrammetric Engineering & Remote Sensing,*
- *PLOS One,*
- *Physical Geography,*
- *Proceedings of the National Academy of Sciences*
- *The Professional Geographer,*
- *Progress in Physical Geography,*
- *Remote Sensing of the Environment,*
- *Remote Sensing Letters,*
- *Transactions in GIS,*
- *Transactions on Spatial Algorithms and Systems*