

Giorgos Mountrakis

Professor

Department of Environmental Resources Engineering

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1.1 Education

PostDoctoral (2004-2005) United States Geological Survey, Fort Collins, CO

Research topic: *Synergetic Use of Satellite Imagery and Ancillary Data for Impervious Surface Estimation in the contiguous US.*

Ph.D. (2004) Department of Spatial Information Science and Engineering, University of Maine, Orono, ME

Dissertation topic: *Similarity Learning in Geospatial Environments using a Neuro-Fuzzy System.*

M.Sc. (2000) Department of Spatial Information Science and Engineering, University of Maine, Orono, ME

Master Thesis topic: *Image-Based Change Detection Using an Integrated Spatiotemporal Gazetteer.*

Dipl. Eng. (1998) Surveying Engineering, National Technical University of Athens, Greece

Diploma Thesis topic: *Determination and Correction of Radial Distortion in Super-wide Angle Lenses of Non-metric Cameras.*

1.2 Employment

Assistant Professor (2005-2013), Associate Professor (2013-2018), Full Professor (2018-current)

State University of New York College of Environmental Science and Forestry, Syracuse, NY.

National Academy of Sciences Postdoctoral Fellow (2004-2005)

U.S. Geological Survey, Fort Collins, CO

National Academies of Science funded project on "*Synergetic Use of Satellite Imagery and Ancillary Data for Impervious Surface Estimation in the contiguous US*".

Research Assistant (1998-2004)

National Center for Geographic Information Analysis (NCGIA), University of Maine, Orono, ME

National Science Foundation funded project on "*Enabling the Creation and Use of GeoGrids for Next Generation Geospatial Information*". NSF Division of Information and Intelligent Systems (2001-2004).

National Imagery and Mapping Agency funded project on "*A Spatio-Temporal Model for Integrated Information Management*" (1998-2001).

Teaching Assistant (2002)

Department of Spatial Information Science and Engineering, University of Maine, Orono, ME

Assisted with an advanced level course on Digital Image Processing.

GIS Database Engineer (1998)

Kotouzas Co., Athens, Greece

Acted as a consultant on database issues focusing on the Greek Cadastre.

1.3 Courses taught

ERE 797 Graduate Seminar (1cr)
ERE 622 Digital Image Analysis (3cr)
ERE 621 Spatial Analysis (3cr)
ERE 365/565 Principles of Remote Sensing (4cr)
ERE 371 Surveying for Engineers (4cr)
ERE 566 Introduction to Global Positioning Systems (1cr)
ERE 553 Introduction to Spatial Information (1cr)
ERE 796 Artificial Intelligence in Geography (1cr)

1.4 Research Grants

Cumulative award amount as lead PI or Co-PI: \$3.6M (as lead PI: \$2.4M).

“A decision-making activity to guide archipelago-wide rewilding of Galapagos giant tortoises”

National Aeronautics and Space Administration, Ecological Forecasting Program

Role: **Co-PI** with James Gibbs (Lead PI), Amount: **\$797,000** , Duration: 2021-2025.

“Spearheading new economic development while protecting tourism and access to potable water: Satellite-based harmful algal bloom detection in Onondaga County”

Onondaga County Economic Development.

Role: **Lead PI**, Amount: **\$100,000** , Duration: 2019-2021.

“Developing advanced scientific capabilities and new economic opportunities from harmful algal bloom detection using remotely-sensed imagery”

Healthy Water Solutions Center of Excellence.

Role: **Lead PI** with Tyler Smith, Amount: **\$10,000** , Duration: 2020-2021.

“Management of social-ecological grazing systems in the Altai Mountain transboundary zone”

National Aeronautics and Space Administration, Land Cover Land Use Change Program

Role: **Lead PI** with James Gibbs, Amount: **\$779,000** , Duration: 2015-2018.

“Developing advanced accuracy metrics for satellite-derived forestry products”

USDA – Forest Service, McIntire-Stennis Program

Role: **Lead PI** with Steve Stehman , Amount: **\$128,386** (50% ESF match), Duration: 2014-2016.

“Engaging climber-scientists and local herders as research collaborators to address grazing, poaching, and climate change issues in the Altai Mountain Region of Russia”

United States Agency International Development

Role: **Co-PI** with James Gibbs (Lead PI), Jennifer Castner, Mikhail Paltsyn, Amount: **\$99,655**, Duration: 2012-2014.

“Using LIDAR to assess the roles of climate and land-cover dynamics as drivers of change in biodiversity”

National Aeronautics and Space Administration, Biodiversity Program

Role: **Lead PI** (Co-Pis: Bill Porter, Colin Beier, Lianjun Zhang, Ben Zuckerberg, and Brian Blair) , Amount: **\$809,682** , Duration: 2009-2014.

“Satellite-derived anthropogenic land use/land cover changes: Integrating detection, modeling and educational approaches”

National Aeronautics and Space Administration, New Investigator Program

Role: **Sole PI** , Amount: **\$359,341** , Duration: 2008-2012.

“Establishing a Novel Forest Assessment Method: The Forestless Volume Indicator”

USDA – Forest Service, National Urban and Community Forestry Advisory Council

Role: **Sole PI**, Amount: **\$59,954**, Duration: 2008-2010.

“Bridging the temporal mismatch between remotely-sensed land use changes and field-based water quality/quantity observations”

Syracuse Center of Excellence, Collaborative Activities for Research and Technology Innovation

Role: **Lead PI** (Co-Pis: Karin Limburg, Myrna Hall and Bongghi Hong), Amount: **\$100,000**,

Duration: 2008-2009.

“Incorporating Spatially-Explicit Uncertainty Metrics in Image-Derived Classification of Impervious Surfaces”

National Science Foundation, Geography and Regional Science Program

Role: **Sole PI**, Amount: **\$50,000**, Duration: 2007-2008.

“An Integrated Monitoring/Modeling Framework for Assessing Human-Nature Interactions in Urbanizing Watersheds: Wappinger and Onondaga Creek Watersheds”

Syracuse Center of Excellence, Collaborative Activities for Research and Technology Innovation

Role: **Co-PI** with Karin Limburg (Lead PI), Myrna Hall, Bongghi Hong and Peter Groffman

Amount: **\$300,000**, Duration: 2006-2008.

“Monitoring Human-Induced Land Use Changes along the Great Lakes”

Great Lakes Research Consortium

Role: **Sole PI**, Amount: **\$10,000**, Duration: 2006-2007.

1.5 Publications

Note: + identifies current or former advisees.

Peer-Reviewed Book Chapters

5. **G. Mountrakis** (2019). Support Vector Machines in Remote Sensing Analysis. Contribution to book chapter in Manual of Remote Sensing, 4th Edition. M. Madden, Sergio Bernardes (eds.).
4. Q. Weng, P. Gamba, **G. Mountrakis**, M. Pesaresi, L. Lu, T. Kemper, J. Heinzl, G. Xian, H. Jin⁺, H. Miyazaki, B. Xu, S. Quresh, I. Keramitsoglou, Y. Ban, T. Esch, A. Roth, and C. D. Elvidge (2014). Urban Observing Sensors. Book chapter in Global Urban Monitoring and Assessment through Earth Observation, Q. Weng (ed.), CRC Press.
3. **G. Mountrakis** (2009). Geographic Data Mining: An Introduction. Invited chapter in the ASPRS Manual of Geographic Information Systems. M. Madden (ed.), Chapter 27, pp. 495-508.
2. R. Watts, **G. Mountrakis** (2009). Transportation Spatial Indicators: Relating the Transportation Network to the Land. Invited chapter in the ASPRS Manual of Geographic Information Systems. M. Madden (ed.), Chapter 34, pp. 659-676.
1. **G. Mountrakis**, P. Agouris, A. Stefanidis (2004). Similarity Learning in GIS: An Overview of Definitions, Prerequisites and Challenges. M. Vassilakopoulos, A. Papadopoulos and Y. Manolopoulos (eds.) Spatial Databases: Technologies, Techniques and Trends, Idea Group Co, pp. 294-321.

Peer-Reviewed Journal Papers (published or in press)

[Papers available for download at: <http://www.aboutgis.com/publications-list/>]

52. Pede*, T., G. Mountrakis, S. Shaw (2019). Improving corn yield prediction across the US Corn Belt by replacing air temperature with daily MODIS land surface temperature. Agricultural and Forest Meteorology, 276, 10761.

51. Paltsyn, M.Y. , J. Gibbs ,L.V. Iegorova, G. Mountrakis (2019). Integrating Traditional Ecological Knowledge and Remote Sensing for Monitoring Rangeland Dynamics in the Altai Mountain Region, *Environmental Management*, 64 (1), 40-51.
50. **Mountrakis, G.**, Li, J. ,Lu, X., Hellwich, O. (2018). Deep learning for remotely sensed data. *ISPRS Journal of Photogrammetry and Remote Sensing*, 145, 1-2.
49. Gibbs, J., L.V. Iegorova, G. Mountrakis, et al. (2019). Rangeland vegetation dynamics in the Altai Mountain region of Mongolia, Russia, Kazakhstan and China: Effects of climate, topography, and socio-political context for livestock herding practices, *Environmental Research Letters*.
48. Heydari+ S., **G. Mountrakis** (2019). A meta-analysis of deep neural networks in remote sensing: A comparative study to support vector machines, *ISPRS Journal of Photogrammetry and Remote Sensing*, 152, 192-210.
47. Pede+, T., **G. Mountrakis** (2018). An empirical comparison of interpolation methods for MODIS 8-day land surface temperature composites across the conterminous United States, *ISPRS Journal of Photogrammetry and Remote Sensing*, 142, 137-150.
46. Khatami+ R., **G. Mountrakis** (2018). The interacting effects of image acquisition date, number of images, classifier, and number of training samples on accuracy of binary classification of impervious cover. *Remote Sensing Letters*, 9(2):189-198.
45. Heydari+ S., **G. Mountrakis** (2018). Effect of classifier selection, reference sample size, reference class distribution and scene heterogeneity in per-pixel classification accuracy using 26 Landsat sites. *Remote Sensing of Environment*, 204, 648-658 (IF=6.27).
44. Khatami+ R., **G. Mountrakis**, S. Stehman (2017). Predicting individual pixel error in remote sensing soft classification. *Remote Sensing of Environment*, 199, 401-414 (IF=6.27).
43. **G. Mountrakis**, Y. Lee+, (2017). A Linearly Approximated Iterative Gaussian Decomposition Method for waveform LiDAR processing. *ISPRS Journal of Photogrammetry and Remote Sensing*, 129, 200-211. (IF=6.39).
42. M.Y. Paltsyn, J. Gibbs ,L.V. Iegorova, **G. Mountrakis** (2017). Estimation and Prediction of Grassland Cover in Western Mongolia using MODIS-derived Vegetation Indices. *Rangeland Ecology & Management*. (IF=1.94).
41. M.A. Petrov, T.Y. Sabitov, I.G. Tomashevskaya, G.E. Glazirin, S.S. Chernomorets, E.A. Savernyuk, O.V. Tutubalina, D.A. Petrakov, L.S. Sokolov, M.D. Dokukin, **G. Mountrakis**, V. Ruiz-Villanueva, M. Stoffel (2017). Glacial lake inventory and lake outburst potential in Uzbekistan, *Science of The Total Environment*, 592, 228-242. (IF=4.90).
40. S. Yang+, **G. Mountrakis** (2017). Forest dynamics in the U.S. indicate disproportionate attrition in western forests, rural areas and public lands. *PloS ONE* 12(2): e0171383. Doi:10.1371/journal.pone.017138. See NY Times and Washington Post coverage [here](#). (IF=2.81).
39. R. Khatami+, **G. Mountrakis**, S. Stehman (2017). Mapping per-pixel predicted accuracy of classified remote sensing images. *Remote Sensing of Environment*, 191, 156-167 (IF=6.27).
38. Z. Xu+, **G. Mountrakis** and L.J. Quackenbush (2017). Impervious surface extraction in imbalanced datasets: integrating partial results and multi-temporal information in an iterative one-class classifier. *International Journal of Remote Sensing*, 38(1), 43-63, (IF=1.72).
37. G. Grekousis+, **G. Mountrakis**, M. Kavouras (2016). Linking MODIS-derived forest and cropland land cover 2011 estimations to socioeconomic and environmental indicators for the European Union's 28 countries. *GIScience and Remote Sensing*, 53(1), 122-146, (IF=3.05).
36. I. Manakos, E. Technitou, Z. Petrou, C. Karydas, V. Tomaselli, G. Veronico, and **G. Mountrakis** (2016). Multi-modal knowledge base generation from very high resolution satellite imagery for habitat mapping. *European Journal of Remote Sensing*, 49, 1033 – 1060, (IF=1.53).

35. R. Khatami⁺, **G. Mountrakis**, S. Stehman (2016). A meta-analysis of remote sensing research on land-cover image classification processes: A guide for practitioners and directions for future research. *Remote Sensing of Environment*, 177, 89–100, (IF=6.27).
34. K. Pandit, E. Bevilacqua, **G. Mountrakis**, R. W. Malmshemer (2016). Spatial Analysis of Forest Crimes in Mark Twain National Forest, MI. *Journal of Geospatial Applications in Natural Resources*, 1(1), 3 (No IF yet).
33. A. Endres⁺, **G. Mountrakis**, H. Jin⁺, W. Zhuang⁺, I. Manakos, J.J. Wiley Jr and C.M. Beier (2016). Relative importance analysis of Landsat, waveform LIDAR and PALSAR inputs for deciduous biomass estimation. *European Journal of Remote Sensing*, 49, 795-807, (IF=1.53).
32. G. Grekousis⁺, **G. Mountrakis**, M. Kavouras (2015). An overview of 21 global and 43 regional land cover mapping products. *International Journal of Remote Sensing*, 36(21), 5309-5335, (IF=1.72).
31. S. Yousefi, R. Khatami⁺, **G. Mountrakis**, S. Mirzaee, H.R. Pourghasemi, M. Tazeh (2015). Accuracy assessment of land cover/land use classifiers in dry and humid areas of Iran. *Environmental Monitoring and Assessment*, October 2015, 187:641, (IF=1.02).
30. G. Grekousis⁺, **G. Mountrakis** (2015). Sustainable development under population pressure: Lessons from Developed Land Consumption in the Conterminous U.S. *PLoS ONE*, 10(3): e0119675. Doi:10.1371/journal.pone.0119675, (IF=2.80).
29. W. Zhuang⁺, **G. Mountrakis**, J. Wiley Jr, C. Beier (2015). Biomass Estimation from Waveform Lidar using Gaussian Area Indices. *International Journal of Remote Sensing*, 36(7), 1871-1889, (IF=1.72).
28. H. Jin⁺, **G. Mountrakis**, S. Stehman (2014). Assessing integration of intensity, polarimetric scattering, interferometric coherence and spatial texture metrics in PALSAR-derived land cover classification. *ISPRS Journal of Photogrammetry and Remote Sensing*, 98:70–84, (IF=6.39).
27. L.M. Giencke, M. Dovčiak, **G. Mountrakis**, J.A. Cale, M.J. Mitchell (2014). Beech bark disease: Spatial patterns of thicket formation and disease spread in an aftermath forest in the northeastern United States. *Canadian Journal of Forest Research*, 44:1042–1050, (IF=1.83).
26. W. Zhuang⁺, **G. Mountrakis** (2014). An accurate and computationally efficient algorithm for ground peak identification in large footprint waveform lidar data. *ISPRS Journal of Photogrammetry and Remote Sensing*, 95:81-92, (IF=6.39).
25. W. Zhuang⁺, **G. Mountrakis** (2014). A Partial Curve-Fitting Method for Ground Peak Identification in Dense Shrub Areas using Large Footprint Waveform LiDAR. *International Journal of Digital Earth*, 1-44, (IF=2.29).
24. H. Jin⁺, S. Stehman, **G. Mountrakis** (2014). Assessing the impact of training sample selection on accuracy of an urban classification: a case study in Denver, Colorado. *International Journal of Remote Sensing*, 35(6): 2067-2081, (IF=1.72).
23. **G. Mountrakis**, B. Xi⁺ (2013). Assessing reference dataset representativeness through confidence metrics based on information density. *ISPRS Journal of Photogrammetry and Remote Sensing*, 78: 129-147, (IF=6.39).
22. H. Jin⁺, **G. Mountrakis** (2013). Integration of urban growth modeling products to image-based urban change analysis. *International Journal of Remote Sensing*, 34(15): 5468-5486, (IF=1.72).
21. R. Khatami⁺, **G. Mountrakis** (2012). Implications of Classification Methodological Decisions in Flooding Analysis from Hurricane Katrina. *Remote Sensing*, 4(12): 3877-3891, (IF=3.24).
20. D. Triantakoustantis⁺, **G. Mountrakis** (2012). Urban growth prediction: A review of computational models and human perceptions. *Journal of Geographic Information System*, 4(6): 555-587, (IF=0.95).

19. **G. Mountrakis**, W. Zhuang⁺ (2012). Integrating Local and Global Error Statistics for Multi-Scale RBF Network Training: An Assessment on Remote Sensing Data. *Public Library of Science (PLOS One)*, 7(8): e40093. Doi:10.1371/journal.pone.0040093, (IF=2.81).
18. H. Jin⁺, **G. Mountrakis**, P. Li (2012). A super-resolution mapping method using local indicator variograms. *International Journal of Remote Sensing*, 33(24): 7747–7773, (IF=1.72).
17. **G. Mountrakis**, D. Triantakonstantis⁺ (2012). Inquiry-based learning in remote sensing: A space balloon educational experiment. *Journal of Geography in Higher Education*, 36(3): 385-401, (IF=0.53).
16. B. Hong, K. Limburg, M. Hall, **G. Mountrakis**, P. Groffman, K. Hyde, L. Luo⁺, V. Kelly, S. Myers (2012). An integrated monitoring/modeling framework for assessing human-nature interactions in urbanizing watersheds: Wappinger and Onondaga Creek watersheds, New York, USA. *Environmental Modelling & Software*, 32:1-15, (IF=4.40).
15. L. Luo⁺, **G. Mountrakis** (2012). A multi-process model of adaptable complexity for impervious surface detection. *International Journal of Remote Sensing*, 33(2):365-381, (IF=1.72).
14. L. Luo⁺, **G. Mountrakis** (2011). Converting local imperviousness information into knowledge through a multi-step partial classification process. *ISPRS Journal of Photogrammetry and Remote Sensing*, 66(5): 579–587, (IF=6.39).
13. **G. Mountrakis**, A. Stefanidis (2011). Moving Towards Personalized Geospatial Queries. *Journal of Geographic Information System*, 3(4): 334-344, (IF=0.95).
12. D. Triantakonstantis⁺, **G. Mountrakis**, J. Wang⁺ (2011). A Spatially Heterogeneous Expert Based (SHEB) Urban Growth Model using Model Regionalization. *Journal of Geographic Information System*, 3(3):195-210, (IF=0.95).
11. **G. Mountrakis**, L. Luo⁺ (2011). Enhancing and replacing spectral information with intermediate structural inputs: A case study on impervious surface detection. *Remote Sensing of Environment*. 115(5): 1162-1170, (IF=6.27).
10. **G. Mountrakis**, J. Im, C. Ogole⁺, (2011). Support Vector Machines in remote sensing: A review, *ISPRS Journal of Photogrammetry and Remote Sensing*, 66(3):247-259, (IF=6.39).
9. K. Gunson⁺, **G. Mountrakis**, L. Quackenbush (2011). Spatial wildlife-vehicle collision models: A review of current work and their application to transportation mitigation projects. *Journal of Environmental Management*, 92(4):1074-1082, (IF=4.01).
8. J. Wang⁺, **G. Mountrakis** (2011). Developing a multi-network urbanization (MuNU) model: A case study of urban growth in Denver, CO. *International Journal of Geographical Information Science*, 25(2):229-253, (IF=2.50).
7. B. Gong, J. Im, **G. Mountrakis** (2011). An artificial immune network approach to multi-sensor land use/land cover classification, *Remote Sensing of Environment*, 115(2):600-614, (IF=6.27).
6. L. Luo⁺, **G. Mountrakis** (2010). Integrating intermediate inputs from partially classified images within a hybrid classification framework: An impervious surface estimation example. *Remote Sensing of Environment*, 114(6):1220-1229, (IF=6.27).
5. **G. Mountrakis**, K. Gunson⁺ (2009). Multi-scale spatiotemporal analyses of moose-vehicle collisions: A case study in northern Vermont. *International Journal of Geographical Information Science*, 23(11):1389-1412, (IF=2.50).
4. **G. Mountrakis**, R. Watts, L. Luo⁺, J. Wang⁺ (2009). Developing Collaborative Classifiers using an Expert-based Model. *Photogrammetric Engineering and Remote Sensing*, 75(7):831-844, (IF=2.49).
3. **G. Mountrakis**, P. Agouris, A. Stefanidis, (2005). Adaptable User Profiles for Intelligent Geospatial Queries. *Transactions in GIS*, 9(4), 561-583, (IF=2.25).
2. **G. Mountrakis**, P. Agouris, I. Schlaisich, A. Stefanidis, (2004). Supporting Quality-Based Image Retrieval Through User Preference Learning. *Photogrammetric Engineering and Remote Sensing*, 70(8), 973-981, (IF=2.49).

1. P. Agouris, K. Beard, **G. Mountrakis**, A. Stefanidis, (2000). Capturing and Modeling Geographic Object Change: A Spatio-Temporal Gazetteer Framework. *Photogrammetric Engineering and Remote Sensing*, 66(10), 1224-1250, (IF=2.49).

Other Journal Papers

2. **G. Mountrakis**, A. Stefanidis (2008, not peer reviewed). Foreword for Special Issue: Artificial Intelligence in Remote Sensing. *Photogrammetric Engineering and Remote Sensing*, 74(10):1199, (IF=2.49).
1. **G. Mountrakis** (2008, not peer reviewed). Next generation classifiers: Focusing on integration frameworks. Highlight article for *Photogrammetric Engineering and Remote Sensing*, 74(10), 1178-1180, (IF=2.49).

1.6 Presentations

[Keynote/Invited]

- 01.Mountrakis, G. (2016 **Keynote** Talk). Incorporation of accuracy metrics in remote sensing products. General Assembly, EU Ecopotential Project, Texel, Netherlands, June, 29, 2016. [Ecopotential is one of the largest environmental projects connecting 17 institutions and more than 250 participants – see <http://www.ecopotential-project.eu>]
- 02.Mountrakis, G. (2016, Oral, Invited). GeoEnvironmentalism: Advocating environmental sustainability through satellite-derived geoinformatics. IEEE GRSS chapter meeting, Rochester, NY, February, 23, 2016.
- 03.Mountrakis, G. (2016, Oral, Invited). GeoEnvironmentalism: Engineering an Equitable and Sustainable Future. ESF presentation for the Exemplary Researcher Award, Syracuse, NY, February, 11, 2016.
- 04.Mountrakis, G. (2012 **Keynote** Talk). Developing Confidence Metrics for Remote Sensing Applications, 32nd Annual European Association of Remote Sensing Laboratories Symposium, Mykonos, Greece.
- 05.Mountrakis, G. (2010, Oral, Invited). Trees Outside the Forest Assessment in the U.S., United Nations Food and Agriculture Organization , FRA 2010 Thematic Study on Trees outside Forest, Rome, Italy.
- 06.Mountrakis, G. (2010, Oral, Invited). Forest consolidation dynamics in the contiguous United States of the 1990s, Global Land Project Open Science Meeting, Tempe, AZ.

[Other Presentations]

- 07.Heydari+, S., G. Mountrakis (2020, Poster). Optimizing Spatial-Spectral-Temporal Neural Network Models for Large-Scale Landcover Classification Based on Landsat Data Archive, AGU Fall Meeting 2020.
- 08.Mountrakis, G (2019, Oral). Interacting effects of socio-political and environmental factors on rangeland dynamics in the Altai Mountains in Central Asia. NASA's Annual Land Cover Land Use Change Program Meeting, Rockville, MD, April 11, 2019.
- 09.Mountrakis, G (2019, Oral). Satellites from Space. Fayetteville-Manlius Wellwood Middle School, Fayetteville, NY, October, 2019.
- 10.Mountrakis, G., R. Khatami+, S. Stehman (2017, Oral). Per-pixel accuracy estimation of classified remote sensing images, Earth Observation Summit 2017, Montreal, Canada June 20, 2017.
- 11.Mountrakis, G., J. Gibbs, L. Iegorova, M. Paltsyn, S. Heydari (2017, Oral). Management of social-ecological grazing systems in the Altai Mountain transboundary zone. NASA's Annual Land Cover Land Use Change Program Meeting, Rockville, MD, April 12, 2017.
- 12.Yang+, S., G. Mountrakis (2017, Poster). Forest dynamics in the conterminous U.S. indicate disproportionate attrition in western forests, rural areas and public lands, Poster presentation at ESF's Spotlight on Research, Syracuse, NY, April, 25, 2017.

13. Heydari⁺, S., G. Mountrakis (2017, Poster). Effect of classifier selection, reference sample size and scene heterogeneity in per-pixel classification accuracy using 26 Landsat sites, Poster presentation at ESF's Spotlight on Research, Syracuse, NY, April, 25, 2017.
14. Pede⁺, T., G. Mountrakis (2017, Poster). Quantifying spatiotemporal trends in corn, wheat, and soybean production across the conterminous United States from 1972-2015, Poster presentation at ESF's Spotlight on Research, Syracuse, NY, April, 25, 2017.
15. Mountrakis, G., J. Gibbs, L. Iegorova, M. Paltsyn, S. Heydari (2016, Poster). Management of social-ecological grazing systems in the Altai Mountain transboundary zone. Poster presentation at NASA's Annual Land Cover Land Use Change Program Meeting, Washington, DC, April 20, 2016.
16. Khatami⁺, R., G. Mountrakis, S. Stehman (2016, Poster). Per-pixel accuracy estimation of classified remote sensing images, Poster presentation at ESF's Spotlight on Research, Syracuse, NY, April, 19, 2016.
17. Endres, A., G. Mountrakis (2016, Poster). Evaluating Hotspots Using Global MODIS and Biodiversity Data, Poster presentation at ESF's Spotlight on Research, Syracuse, NY, April, 19, 2016.
18. Heydari, S., G. Mountrakis (2016, Poster). Study of land cover classifiers' performance utilizing big datasets and deep neural networks, Poster presentation at ESF's Spotlight on Research, Syracuse, NY, April, 19, 2016.
19. Pede, T., G. Mountrakis (2016, Poster). A Comprehensive Review and Comparison of Cloud Interpolation Techniques for Satellite-Derived Land Surface Temperature (LST) Images, Poster presentation at ESF's Spotlight on Research, Syracuse, NY, April, 19, 2016.
20. Yang, S., G. Mountrakis (2016, Poster). Forest dynamics in the conterminous U.S. indicate disproportionate attrition in western forests, rural areas and public lands, Poster presentation at ESF's Spotlight on Research, Syracuse, NY, April, 19, 2016.
21. Doctor, R., G. Mountrakis (2015, Poster). Spatio-temporal Analysis of Linear Trend in Temperature over Coastal areas, Terrestrial Biomes, and different Elevations. ESF's Spotlight on Research, Syracuse, NY, April 15th 2015.
22. Endres⁺, A., G. Mountrakis (2015, Poster). Evaluation of sensor fusion for biomass estimation employing the random forest regression algorithm. ESF's Spotlight on Research, Syracuse, NY, April 15th 2015.
23. Khatami⁺, R., G. Mountrakis (2015, Poster). Implications of Classification Methodological Decisions in Flooding Analysis from Hurricane Katrina. ESF's Spotlight on Research, Syracuse, NY, April 15th 2015.
24. Pede⁺, T., G. Mountrakis (2015, Poster). The effects of urbanization on land surface temperature in the Austin Metropolitan Region. ESF's Spotlight on Research, Syracuse, NY, April 15th 2015.
25. Yang⁺, S., G. Mountrakis (2015, Poster). Forest Consolidation Analysis in the Conterminous U.S. ESF's Spotlight on Research, Syracuse, NY, April 15th 2015.
26. Bailey⁺, M., G. Mountrakis (2015, Poster). Spatial Trends of Tornadoes and Possible Relations to ENSO. ESF's Spotlight on Research, Syracuse, NY, April 15th 2015.
27. Grekousis⁺, G., K. Kavouras, G. Mountrakis (2015, Oral). Land cover accounts for European Union 2001-2011. Third International Conference on Remote Sensing and Geoinformation of Environment, Cyprus, March 16th 2015.
28. Mountrakis, G., Beier, C., Porter, B., Zuckerberg B., and Blair, B. (2014, Oral). Using LIDAR to assess the roles of climate and land-cover dynamics in biodiversity changes, NASA Biodiversity Science Meeting, Silver Spring, MD.
29. Zhuang⁺, W., G. Mountrakis, J. J. Wiley Jr., C.M. Beier (2013, Oral). Biomass Estimation from Waveform Lidar using Gaussian Area Indices. ASPRS Annual Conference, Baltimore, MD.
30. Bloom⁺, H., G. Mountrakis (2013, Oral). Assessing Vegetation Change from MODIS Data using Volcanoes as Climate Change Proxies. ASPRS Annual Conference, Baltimore, MD.
31. Khatami⁺, R., G. Mountrakis (2013, Oral). Environmental Disaster Damage Assessment: Hurricane Katrina Case Study. ASPRS Annual Conference, Baltimore, MD.

32. Yang⁺, S., G. Mountrakis (2013, Oral). Application of Landsat-derived Landcover Maps in Assisting U.S. Nationwide Forest Management. ASPRS Annual Conference, Baltimore, MD.
33. Jin⁺, H., G. Mountrakis (2013, Oral). Integration of Urban Growth Prediction Models to Image-based Urban Change Classification. ASPRS Annual Conference, Baltimore, MD.
34. Grekousis⁺, G., G. Mountrakis (2013, Poster). Socio-economic characteristics of high/low developed land consumption areas in the conterminous US. NASA Land Cover Land Use Change Science Meeting, Maryland, MD.
35. Wiley, J., Beier, C., Mountrakis, G., Porter, B., Zuckerberg B., Zhang, L., and Blair, B. (2012, Oral). Using LIDAR to assess the roles of climate and land-cover dynamics in biodiversity changes, NASA Biodiversity Science Workshop, Seattle, WA.
36. Mountrakis, G., and Luo⁺, L. (2012, Oral). Replacing degraded spectral information with context-based knowledge: A case study on impervious surface detection. ASPRS Annual Conference, Sacramento, CA.
37. Mountrakis, G., Jin⁺, H., and Li, P. (2012, Oral). A Super-resolution Mapping Method using Local Indicator Variograms. ASPRS Annual Conference, Sacramento, CA.
38. Mountrakis, G., Xi⁺, B., and Khatami⁺, R. (2012, Oral). Developing Confidence Metrics for Training Dataset Selection in Remote Sensing Classification. ASPRS Annual Conference, Sacramento, CA.
39. Mountrakis, G., Triantakoustantis⁺, D. and Ang⁺, P. (2012, Oral). Inquiry-based learning in remote sensing: A space balloon educational experiment, ASPRS Annual Conference, Sacramento, CA.
40. Jin⁺, H., and Mountrakis, G. (2012, Oral). Integrating Multi-temporal PALSAR and Landsat Imagery Land Cover Classification, Association of American Geographers Conference, New York, NY.
41. Xi⁺, B., Mountrakis, G., and Khatami⁺, R. (2012, Oral). Developing Confidence Metrics for Training Dataset Selection in Remote Sensing Classification, Association of American Geographers Conference, New York, NY.
42. Yang⁺, S. and Mountrakis, G. (2012, Oral). Spatial Analyses of Forest Consolidation Dynamics in the Conterminous U.S., Association of American Geographers Conference, New York, NY.
43. Zhuang⁺, W., and Mountrakis, G. (2012, Oral). A novel method to characterize forest structures using large-footprint LVIS waveform data, Association of American Geographers Conference, New York, NY.
44. Ang⁺, P., Mountrakis, G., and Quackenbush, L. (2012, Oral). Examining Temperature Variability in Continental US using MODIS data, Association of American Geographers Conference, New York, NY.
45. Mountrakis, G., Triantakoustantis⁺, D. and Ang⁺, P. (2012, Oral). Inquiry-based learning in remote sensing: A space balloon educational experiment, Association of American Geographers Conference, New York, NY.
46. Bloom⁺, H., and Mountrakis, G. (2012, Oral). Assessing vegetation dynamics under observed climatic events from volcanic activity, Association of American Geographers Conference, New York, NY.
47. Xi⁺, B., Mountrakis, G., and Khatami⁺, R. (2012, Poster). Developing Confidence Metrics for Training Dataset Selection in Remote Sensing Classification, SUNY ESF Spotlight, Syracuse, NY.
48. Bloom⁺, H., and Mountrakis, G. (2012, Poster). Assessing vegetation dynamics under observed climatic events from volcanic activity, SUNY ESF Spotlight, Syracuse, NY.
49. Jin⁺, H., and Mountrakis, G. (2012, Poster). Integrating Multi-temporal PALSAR and Landsat Imagery for Land Cover Classification, SUNY ESF Spotlight, Syracuse, NY.
50. Ang⁺, P., Mountrakis, G., and Quackenbush, L. (2012, Poster). Examining Temperature Variability in the Continental U.S. using MODIS data, SUNY ESF Spotlight, Syracuse, NY.
51. Yang⁺, S. and Mountrakis, G. (2012, Poster). Spatial Analyses of Forest Consolidation Dynamics in the Conterminous U.S., SUNY ESF Spotlight, Syracuse, NY.
52. Zhuang⁺, W., and Mountrakis, G. (2012, Poster). Estimating Forest Attributes By A Novel Metric Using A Large Footprint LiDAR Data, SUNY ESF Spotlight, Syracuse, NY.
53. Jin⁺, H. and Mountrakis, G. (2011 Poster). Super-resolution reconstruction using indicator variograms and local spatial structure, SUNY ESF Spotlight, Syracuse NY.

54. Jin⁺, H. and Mountrakis, G. (2011, Poster). Investigating land cover signatures on multitemporal ALOS/PALSAR and Landsat TM datasets, SUNY ESF Spotlight, Syracuse NY.
55. Yang⁺, S. and Mountrakis, G. (2011, Poster). Assessing spatial uniqueness of forest changes in the conterminous US, SUNY ESF Spotlight, Syracuse NY.
56. Mountrakis, G., and Xi⁺ B. (2011, Oral). Developing Confidence Metrics for Remote Sensing Classifiers, Central New York ASPRS Chapter meeting, Syracuse, NY.
57. Beier, C., Mountrakis, G., Porter, B., Zuckerberg B., Zhang, L., and Blair, B. (2011, Oral). Using LIDAR to assess the roles of climate and land-cover dynamics in biodiversity changes, NASA Carbon Cycle & Ecosystems Joint Science Workshop, Washington, DC.
58. Zhuang⁺, W., and Mountrakis, G. (2011, Oral). Satellite-derived anthropogenic land use/land cover changes: Integrating detection, modeling and educational approaches, NASA Land Cover Land Use Change Science Meeting, Washington, DC.
59. Wiley, J.J., Beier C.M., McGee G.G. and Mountrakis G. (2011, Oral). Using LIDAR to Model Forest Regeneration: Preliminary Model Development. 2011 New York Society of American Foresters Meeting, Syracuse, NY.
60. Ang, P., Nicholson, B., Plonka, Z., and Mountrakis, G. (2011, Oral). ESF goes to space. National Conference on Undergraduate Research, Ithaca, NY.
61. Zhuang⁺, W., and Mountrakis, G. (2011, Oral). A Novel Decomposition Method Based on Differential Evolution Algorithm for LVIS Waveform Data, ASPRS Annual Conference, Milwaukee, WI.
62. Mountrakis, G. (2010, Oral). ESF goes to Space, Celebration of GIS day on ESF's campus, Syracuse, NY.
63. Yang⁺ S. and Mountrakis, G. (2010, Oral). Assessing forest changes in the U.S., Association of American Geographers Conference, Washington, DC.
64. Luo⁺ L. and Mountrakis, G. (2010, Oral). Incorporating intermediate results in remote sensing classifiers, Association of American Geographers Conference, Washington, DC.
65. Zhuang⁺ W. and Mountrakis, G. (2010, Oral). Evaluation of a Novel Multi-scale Radial Basis Function Networks for Impervious Surface Classification, Association of American Geographers Conference, Washington, DC.
66. Xi⁺ B. and Mountrakis, G. (2010, Oral). Developing confidence metrics for remote sensing classification, Association of American Geographers Conference, Washington, DC.
67. Triantakoustantis⁺, D. and Mountrakis, G. (2010, Oral). An expert-based urban growth model, capturing the spatial heterogeneity, Association of American Geographers Conference, Washington, DC.
68. Jin⁺, H. and Mountrakis, G. (2010, Oral). Super-resolution reconstruction using indicator variograms and local spatial structure, Association of American Geographers Conference, Washington, DC.
69. Mountrakis, G. and Yang⁺, S. (2010, Oral). A decadal spatial analysis of nationwide forest change NYS Geographic Information Systems Conference, Lake Placid, NY.
70. Mountrakis, G. (2010, Poster). Integration of urban growth models in urbanization monitoring, NASA Land Cover Land Use Change Science Meeting, Washington, DC.
71. Mountrakis, G., Porter, B., Beier, C., Zuckerberg B., Zhang, L., and Blair, B. (2010, Oral). Using LIDAR to assess the roles of climate and land-cover dynamics in biodiversity changes, NASA Biodiversity Science Meeting, Washington, DC.
72. Gunson⁺, K., and Mountrakis, G. (2010, Oral). Spatial wildlife-vehicle collision models: A review of current work and recommendation for their application to transportation mitigation projects, 2010 IENE International Conference on Ecology and Transportation: Improving connections in a changing environment, Velence, Hungary.
73. Jin⁺, H. and Mountrakis, G. (2010, Poster). Super-resolution reconstruction using indicator variograms and local spatial structure, SUNY ESF Spotlight, Syracuse NY.
74. Luo⁺, L. and Mountrakis, G. (2010, Poster). Incorporating intermediate results in remote sensing classifiers, SUNY ESF Spotlight, Syracuse NY.

75. Yang⁺, S. and Mountrakis, G. (2010, Poster). Assessing forest changes in the U.S., SUNY ESF spotlight, Syracuse, NY.
76. Zhuang⁺, W. and Mountrakis, G. (2010, Poster). Evaluating a novel multi-scale radial basis function network in image classification, SUNY ESF Spotlight, Syracuse, NY.
77. Xi⁺ B. and Mountrakis, G. (2010, Poster). Developing confidence metrics for remote sensing classification, SUNY ESF Spotlight, Syracuse, NY.
78. Mountrakis, G., Porter, B., Beier, C., Zuckerberg B., Zhang, L., and Blair, B. (2009, Poster). Using LIDAR to assess the roles of climate and land-cover dynamics as drivers of change in biodiversity, NASA Biodiversity Meeting, New York, NY.
79. Mountrakis, G., Porter, B., Beier, C., Zuckerberg B., Zhang, L., and Blair, B. (2009, Poster). Using LIDAR to assess the roles of climate and land-cover dynamics as drivers of change in biodiversity, 8th Annual CNY ASPRS New York State Remote Sensing Symposium, Syracuse, NY.
80. Luo⁺, L. and Mountrakis, G. (2009, Poster). Impervious surface area detection in the Onondaga Creek watershed using satellite imagery, SUNY ESF Spotlight, Syracuse NY.
81. Luo⁺, L. and Mountrakis, G. (2009, Poster). Impervious surface area detection in the Onondaga creek watershed using satellite imagery, 8th Annual CNY ASPRS New York State Remote Sensing Symposium Syracuse, NY.
82. Gunson⁺, K., and Mountrakis, G., (2009, Oral). Tools used to identify spatial and temporal patterns of wildlife-vehicle collisions along roads and their application for mitigation planning, 19th Canadian Multidisciplinary Road Safety Conference, Saskatoon, Saskatchewan, Canada.
83. Luo⁺, L. and Mountrakis, G. (2009, Oral). Using an Expert-based system for satellite-derived change detection of impervious surfaces in central New York, Association of American Geographers Conference, Las Vegas, NV.
84. Luo⁺, L. and Mountrakis, G. (2009, Poster). Great Lakes goes to Albany. Presentation to legislature on urbanization changes, Albany, NY.
85. Luo⁺, L. and Mountrakis, G. (2008, Poster). Impervious surface area detection in the Onondaga creek watershed using satellite imagery, 8th Annual Symposium on Environmental & Energy Systems Syracuse, NY.
86. Luo⁺, L. and Mountrakis, G. (2008, Oral). Satellite-derived impervious surface detection with spatially-explicit uncertainty metrics, NYS Geographic Information Systems Conference, Syracuse, NY.
87. Gunson⁺, K., and Mountrakis, G. (2008, Oral). Multi-scale spatiotemporal analyses of moose-vehicle collisions: A case study in northern Vermont, Northeastern Transportation and Wildlife Conference, Meredith, NH.
88. Luo⁺, L. and Mountrakis, G. (2008, Oral). Satellite-derived impervious surface detection with spatially-explicit uncertainty metrics, Association of American Geographers Conference, Boston, MA.
89. Mountrakis, G. and Gunson⁺, K. (2008, Oral). Spatiotemporal analyses of moose-vehicle collisions in Vermont, Association of American Geographers Conference, Boston, MA.
90. Wang⁺, J. and Mountrakis, G. (2008, Oral). Modeling land use changes in Colorado over a 60-year period, Association of American Geographers Conference, Boston, MA.
91. Gunson⁺, K., and Mountrakis, G. (2007, Oral). Paving the road towards the future: developing valid spatial models to predict wildlife-vehicle collision locations, Toronto Zoo Ecopassages Forum, Toronto, Ontario, Canada.
92. Luo⁺, L. and Mountrakis, G. (2007, Oral). A novel approach for impervious surface detection using satellite imagery, Great Lakes Research Consortium, Syracuse NY.
93. Mountrakis, G. (2007, Oral). Moving Towards Collaborative Remote Sensing Analyses: An Impervious Surface Detection Paradigm, Association of American Geographers Conference, San Francisco, CA.
94. Limburg, K., Groffman, P., Myrna, H., Hong, G., Mountrakis, G., Hyde, K., Luo⁺, L., (2006, Poster). An Integrated Monitoring/Modeling Framework for Assessing Human-Nature Interactions in

Urbanizing Watersheds: Onondaga and Wappinger Creeks, 6th Annual Symposium on Environmental & Energy Systems Syracuse, NY.

*Note: Presenter is listed first, * denotes current or former advisee.*

1.7 Patents and licenses

G. Mountrakis (Inventor). A novel multi-scale radial basis function neural network. Full patent (#7,577,626) issued on August 18, 2009 by the United States Patent and Trademark Office.

1.8 Department, College, and University service

Member, ESF Vice President for Research Search Committee (2016).

Member, ERE Ecological Eng. Faculty Search Committee (2016).

Chair, ERE Remote Sensing Faculty Search Committee (2013).

Poster Judge for ESF's Spotlight on Research (2012, 2013, 2015, 2017).

Member, College-wide Committee on Student Life (2011-2013).

Panelist, ESF Graduate Grant Writing Workshop (2011).

Member, Empire Faculty Search Committee (2010).

Member, College-wide Committee on Research (2009-2011).

ERE Geospatial Area of Study, website development (2008-now).

Member, Two Departmental Faculty Search Committees (2007-2008).

Assessing annually ABET's learning outcome b (an ability to design and conduct experiments, as well as to analyze and interpret data) in the Principles of Remote Sensing course to maintain our ABET Accreditation (2007-now).

Assisted with NY State Fair Booth (2007-now).

Reviewer, ERE Graduate student applications (2005-now). Introduced new video evaluation.

Member, Council for Geospatial Modeling and Analysis (2005-now).

Chairing PhD Candidacy Exams when requested by Graduate Office (1~2 per year).

1.9 Professional and scientific society service

Associate Editor, ISPRS Journal of Photogrammetry and Remote Sensing (2015- now)

Chair, ASPRS National Committee on Academic Engagement (2012- now).

Guest Editor, ISPRS Journal of Photogrammetry and Remote Sensing, Special Issue on Deep Learning for Remotely Sensed Data (2017-now).

Reviewer for proposals submitted to the Romanian National Council for Development and Innovation (2012, 2013, 2014, 2015, 2016)

Reviewer for proposals submitted to the Cariplo Foundation, Italy (2014, 2015, 2016).

Reviewer for proposals submitted to the Belgian Earth Observation Programme (2014).

Program Committee member for the third International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2014).

Program Committee member for the IEEE Geoscience and Remote Sensing Symposium (2012, 2014, 2015).

Assistance to Liverpool Middle School Space Balloon Team (2014).

Session Chair at AAG 2012, two topics:

LiDAR Remote Sensing Applications.

Land Cover Land Use Change: Remote Sensing Perspectives.

Program Committee member for International Conference on Computer and Communication Technology (ICCCT2012).

Reviewer for Netherlands Organisation for Scientific Research (2011).

Reviewer for two 2011 conferences: The International Geoscience and Remote Sensing Symposium and the Second International Conference on Computer and Communication Technology.

Reviewer and Panel member for NASA, Reviewer for NSF.

Participated in the United Nations Food and Agriculture Organization , FRA 2010 Thematic Study on Trees outside Forest (attended Workshop in June 2010 in Rome, Italy and now member of the reviewing committee).

Assistance to the Fayetteville-Manlius High School Science Olympiad Team (2010).

Guest Editor for a Special Issue on “Artificial Intelligence in Remote Sensing” for the Photogrammetric Engineering & Remote Sensing Journal (2008).

Team Leader for Reviewing material for the Association of American Geographers, “Enhancing Departments and Graduate Education (EDGE) in Geography”, a project to study the process of professional development in graduate geography (2008).

Workshop participant by invitation for the Mellon Interface of Humanities with Science and Technology workshop organized by Syracuse University (2007).

Reviewer for numerous scientific journals averaging 10-15 reviews annually. The high quality of my reviews was recognized by the ISPRS Journal of Photogrammetry and Remote Sensing Excellent Reviewer Award.

1.10 Administrative service

Graduate Coordinator, ERE Department (2013-now)

Departmental Review Committee, Chair, ERE Department (2019-now)

1.11 Awards and honors received

EU Ecopotential Project, Scientific Advisor (2016- now)

SUNY ESF's Exemplary Research Award (2015) Syracuse, NY

EU Ecopotential Project, General Assembly Meeting, Texel, Netherlands (2016)

Invited Keynote Speaker

Associate Editor, ISPRS Journal of Photogrammetry and Remote Sensing (2015-)

European Association of Remote Sensing Laboratories (2012) Mykonos, Greece

Invited Keynote Speaker at the 32nd EARSeL Symposium

ISPRS Journal of Photogrammetry and Remote Sensing Excellent Reviewer Award (2012)

Global Land Project Conference (2010) Tempe, AZ

Travel award to present a national forest consolidation study

NASA New Investigator Program (2008) Syracuse, NY

Prestigious research/education award from NASA's Earth Science division

National Academies of Science, National Research Council (2004) Fort Collins, CO

Postdoctoral Award based on a national competition to perform research in one of their accredited agencies

Graduate Researcher Award (2004) Orono, ME

University of Maine Graduate Student Award

SPIE Travel Award (2000) Orlando, FL

Travel award by conference organizers to present research paper

Scholarship Award by the Evgenidion Foundation (1998) Athens, Greece

Competitive scholarship to study in the USA

Outstanding Thesis Award by the National Technical Chamber of Greece (1998) Athens, Greece.