

An-Min Wu

Spatial Sciences Institute
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CURRENT FULL-TIME APPOINTMENT

University of Southern California

2016 – Lecturer, Spatial Sciences Institute

Teach in Population, Health, and Place program (Ph.D. degree), online Graduate Information Science and Technology Program (M.S. degree and post-graduate certificate), and undergraduate general education.

Courses taught: Principles of Spatial Data Analysis, Concept of Spatial Thinking, Spatial Databases, Spatial Analysis, The Water Planet (laboratory).

EDUCATION

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|------|-------|---|
| 2014 | Ph.D. | Land and Atmospheric Science, Geographic Information Science minor, University of Minnesota
Dissertation title: Hillslope redistribution of soil organic carbon in the depressional landscape in Minnesota |
| 2004 | M.S. | Soil Science, The Pennsylvania State University
Thesis title: Development of a vineyard site assessment model for Southeastern Pennsylvania using geospatial technologies |
| 2002 | M.EPC | Environmental Pollution Control, The Pennsylvania State University
Paper title: Distribution of soil test phosphorus in Pennsylvania |
| 1998 | B.S. | Horticultural Science, Landscape Design and Planning division, National Taiwan University, Taiwan |

PROFESSIONAL APPOINTMENTS

University of Minnesota

2014 – 2016 Postdoctoral Research Associate, Department of Soil, Water, and Climate

PUBLICATIONS

Refereed Article Published

- 2017 Fissore, C., Dalzell, B.J., Berhe, A.A., Voegtle, M., Evans, M., and **Wu, A.**
Influence of topography on soil organic carbon dynamics in a Southern California grassland. CATENA, 149, 140-149.

Conference and Symposium Proceedings

- 2015 **Wu, A.**, Nater, E.A., Perry, C.H., Dalzell, B.J., and Wilson, B.T. 2015. Change detection for soil carbon in the forest inventory and analysis, In: *Pushing Boundaries - New Directions in Inventory Techniques & Applications*. Proceedings of FIA Science Symposium 2015, Portland, Oregon.
- 2015 Nater, E.A., Fissore, C., Perry, C.H., **Wu, A.**, Dalzell, B., and Wilson, B.T. 2015. Extrapolating existing soil organic carbon data to estimate soil organic carbon stocks below 20cm. In: *Pushing Boundaries - New Directions in Inventory Techniques & Applications*. Proceedings of FIA Science Symposium 2015, Portland, Oregon.

Refereed Article Under Review

Wu, A. Global measures of spatial association. *GIS&T Body of Knowledge 2.0*. University Consortium of Geographic Information Science (UCGIS).

Manuscripts In Preparation

Wu, A. Local measures of spatial association. GIS&T Body of Knowledge 2.0. University Consortium of Geographic Information Science.

Wu, A., Bell, J.C., and Nater, E.A. Spatial predictive models for post-settlement alluvium using local and regional terrain attributes. *Geoderma*.

Wu, A., Nater, E.A., Perry, C.H., Dalzell, B.J., and Wilson, B.T. Change detection of soil organic carbon in the Forest Inventory and Analysis database. Soil Science Society of America.

AWARDS AND HONORS

- 2014 Wilford Gardner Fellowship, World Congress of Soil Science Travel Fellowship, funded by National Science Foundation via Soil Science Society of America.
- 2009 Graduate Fellowship, University of Minnesota
- 2004 Graduate Student Ambassador, American Congress on Survey and Mapping (ACSM) & Cartography and Geographic Information Society (CaGIS)
- 2004 Member, Gamma Sigma Delta, Agricultural Honor Society, PennState Chapter

GRANTS

- 2018 – 2019 Assessing residential soil lead contamination using geospatial analysis in Southeast Los Angeles County, California. University of Southern California Undergraduate Research Associates Program (URAP); PI; Co-PI: Dr. Jill Johnston at USC Keck School of Medicine; \$3,300
- 2017 – 2018 Upscaling effects on soil carbon prediction in the depression landscapes in Minnesota. University of Southern California Undergraduate Research Associates Program (URAP); PI; \$2,400
- 2013 Baker and Kuehnast Endowment Travel Grant; \$1,500
- 2013 Howe Graduate Scholarship, University of Minnesota; semester tuition & stipend

- 2010 Martin Travel Grant, Department of Soil, Water, and Climate, University of Minnesota; \$800
- 2010 Professional Travel Grant, Graduate and Professional Student Assembly, University of Minnesota; \$500
- 2004 Tuition Grant-in-aid, The Pennsylvania State University; semester tuition & stipend

PRESENTATIONS

Conference Activities

- 2018 **Wu, A.**, Hansen, A., LaBine, K., and Jelinski, N. Spatial distributions of soil lead across scales in the Twin Cities Metropolitan Areas, United States. 21st World Congress of Soil Science. Rio de Janeiro, Brazil. August 12-17, 2018. (Poster Presentation)
- 2018 **Wu, A.** and Swift, J. Approaches to today's spatial database education challenges. Association of American Geographers Annual Meeting. New Orleans, LA. April 10-14, 2018. (Oral Presentation)
- 2018 Gilmore, A. and **Wu, A.** Modelling soil carbon in depressional landscapes of Minnesota. Los Angeles Geospatial Summit. Los Angeles, CA. February 23, 2018. (Poster Presentation)
- 2017 **Wu, A.** Identifying terrain attribute effects on soil organic carbon stocks in US Forests. Association of American Geographers Annual Meeting. Boston, MA. April 5-9, 2017. (Oral Presentation)
- 2015 **Wu, A.**, Nater, E.A., Perry, C.H., Dalzell, B.J., and Wilson, B.T. Minimum detectable change of soil carbon in the U.S. Forest Inventory and Analysis database. American Geophysical Union Fall Meeting. San Francisco, CA. December 14-18, 2015. (Poster Presentation)
- 2015 Fissore, C., Dalzell, B.J., Berhe, A.A., Voegtle, M., Evans, M., and **Wu, A.** Soil organic carbon relationships with terrain attributes in a southern California hillslope system. American Geophysical Union Fall Meeting. San Francisco, CA. December 14-18, 2015. (Poster Presentation)
- 2015 **Wu, A.**, Nater, E.A., Perry, C.H., Dalzell, B.J., and Wilson, B.T. Change detection for soil carbon in the FIA database. FIA Science Symposium. Portland, Oregon. December 8-10, 2015. (Oral Presentation)
- 2014 **Wu, A.**, Nater, E.A., Dalzell, B.J., and Perry, C.H. Soil carbon variability and change detection in the forest inventory analysis database of the United States. American Geophysical Union Fall Meeting. San Francisco, CA. December 15-19, 2014. (Poster Presentation)
- 2014 **Wu, A.**, Bell, J.C., and Nater, E.A. Soil carbon storage potential under the impact of post-settlement deposition in depressional landscapes in Minnesota. 20th World Congress of Soil Science. Jeju, South Korea. June 8-13, 2014. (Poster Presentation)
- 2013 Dalzell, B.J., Nater, E.A., Yoo, K., Fissore, C., and **Wu, A.** Terrain influences

on soil organic carbon translocation and burial: Applications of high-resolution digital elevation models. American Geophysical Union Fall Meeting. San Francisco, CA. December 9-13, 2013. (Poster Presentation)

- 2013 **Wu, A.** and Bell, J.C. Spatial prediction of post-settlement deposition in depressional landscapes of Minnesota. 10th Biennial Meeting of Commission 1.5 Pedometrics, Division 1 of the International Union of Soil Science (Pedometrics 2013). Nairobi, Kenya. August 26-31, 2013. (Oral Presentation)
- 2012 **Wu, A.**, Bell, J.C., and Nater, E.A. Understanding the spatial distribution and quantity of soil organic carbon in depressional landscape of Minnesota. American Geophysical Union. San Francisco, CA. December 3-7, 2012. (Poster Presentation)
- 2012 Nater, E.A., Dalzell, B.J., Fissore, C., **Wu, A.**, Yoo, K., and Ginakes, P. Legacy of topography and land use on erosion and soil organic carbon burial. American Geophysical Union. San Francisco, CA. December 3-7, 2012. (Oral Presentation)
- 2011 Dalzell, B.J., Fissore, C., Nater, E.A., Yoo, K., and **Wu, A.** Redistribution of soil organic carbon in agricultural soils. Geological Society of America Annual Meeting, Minneapolis, MN. October 9 – 12, 2011. (Oral Presentation)
- 2011 **Wu, A.**, Bell, J. & Nater, E. Upslope influencing area terrain analysis – For landscape soil carbon modeling. MN GIS/LIS Consortium Annual Conference, St. Cloud, MN. October 5 – 7, 2011. (Poster Presentation)
- 2010 **Wu, A.**, Bell, J. & Nater, E. Spatial variability of soil carbon and post-settlement alluvium in the glaciated landscape of Minnesota. ASA-CSSA-SSSA Annual Meetings, Long Beach, CA. October 31 – November 3, 2010. (Poster Presentation)
- 2004 **Wu, A.**, Day, R.L. & Petersen, G.W. A vineyard site assessment model for Southeastern Pennsylvania using GIS. ASA-CSA-SSSA Annual Meeting, Seattle, WA. October 31 – November 4, 2004. (Poster Presentation)
- 2004 **Wu, A.** Vineyard suitability analysis for Southeastern Pennsylvania. American Society of Enology and Viticulture – Eastern Section Annual Meeting, Roanoke, VA. July 13-16, 2004. (Oral Presentation)

Invited Presentations

- 2017 Using spatial modeling to link soil organic carbon changes to anthropogenic effects and efforts. USC Spatial Sciences Institute Brown Bag Series. November 7, 2017.
- 2004 Grape vineyard site selection. Vineyard Soil Workshop, Lancaster, PA. May 2004.

TEACHING EXPERIENCE

Courses Taught

University of Southern California

SSCI 265Lg: The Water Planet - laboratory (Spring 2017)
SSCI 581 (online): Concept of Spatial Thinking (Fall 2016)
SSCI 582 (online): Spatial Databases (Fall 2016, Summer 2017, Fall 2017, Spring 2018)
SSCI 583 (online): Spatial Analysis (Spring 2017, Summer 2017, Spring 2018)
SSCI 594b (online): Master's Thesis (Summer 2018)
SSCI 683: Principles of Spatial Data Analysis (Spring 2017, Spring 2018)

Graduate Teaching Assistantships

University of Minnesota

SOIL 4511: Field Study of Soils (Summer, 2013 - 2014)
SOIL 2125: Basic Soil Science (Spring 2009)

The Pennsylvania State University

SOILS 450: Environmental GIS (Fall, 2000 - 2003)
SOILS 510: GIS Applications (Spring, 2001 - 2003)

Other Teaching Activities

University of Minnesota Soil Judging Team, Assistant Coach (Fall 2013)
Land Analysis Curriculum Development Workshop (for K-12), McVeytown, PA.
Assistant Instructor (Summer 2002)

STUDENT ADVISEMENT

Doctoral

Noha Najem, Petroleum Engineering, Viterbi School of Engineering, University of Southern California. PhD Committee.

Master's

M.S., Geographic Information Science and Technology, University of Southern California.

Chair, Thesis Committee:

Marisa McGinnis, Robert Williams, Tori Ouile, Ray Calnan

Member, Thesis Committee:

2018 Alexandra Motyka, Phillip Connor, Christine Schuarel, Michael Thibodaux
2017 Ryan Mock, Samantha Bamberger, Quentina Borgic, Trevor Denson, Julia Goldsworth

Bachelor's

2017- 2018 Amanda Gilmore, BS, Geodesign. Undergraduate Research Associates Program (URAP), University of Southern California. Advisor.

RESEARCH EXPERIENCE

University of Minnesota

2014 – 2016 Postdoctoral Research Associate
Evaluated spatial and temporal sampling strategies for soil organic carbon stocks and stocks changes in the Forest Inventory Analysis (FIA) database

2011 – 2013 Graduate Research Assistant

- Supervised field crews in soil sample collection, laboratory analysis and GIS analysis for N and C in grassland and agricultural landscapes in Minnesota
- 2008 Graduate Research Assistant
Mapped regional land use and agricultural census data for terrestrial carbon sequestration projection in Midwest, USA
- The Pennsylvania State University
- 2004 – 2005 Research Project Assistant (full-time), Geospatial Technology Program
Prepared spatial databases for web-based GIS in Pennsylvania vineyard suitability
- 2004 Graduate Research Assistant
Coordinated with growers and grape experts for regional site selection criteria and developed spatial climatic datasets critical for Pennsylvania's vineyard *terroir*

PROFESSIONAL SERVICE

International

- 2014 – 2018 Advisory Board Member, Pedometrics Commission, International Union of Soil Sciences

National / Regional

- 2018 Chair and Co-Organizer, GI Science Education: Advancements in Teaching Spatial Databases, American Association of Geographers Annual Meeting. New Orleans, LA.
- 2017 – 2019 Board of Directors, California Geographic Information Association
- 2017 – 2018 Membership Committee, California Geographic Information Association
- 2017 GISCorps volunteer
- 2017 Reviewer, GIS&T Body of Knowledge, University Consortium for Geographic Information Science (UCGIS)
- 2015 Judge, Geoscience Projects, Los Angeles County Science Fair
- 2014 Judge, Twin Cities Regional Science Fair

University

University of Southern California

- 2018 Moderator, the Environment and Food panel, China: Finding Solutions conference, USC U.S.-China Institute
- 2017 Member, USC Libraries Visualization Specialist Search Committee

Dana and David Dornsife College of Letters, Arts, and Sciences

- 2018 – 2020 Member, Dornsife Faculty Council.
- 2017 – 2018 Member, Dornsife Faculty Council; Research, Policy and Documentation Caucus

Spatial Sciences Institute

- 2018 Member, Population, Health, and Place PhD Admission Committee
- 2018 Member, Thesis Prize Committee
- 2017 Member, Thesis Prize Committee

University of Minnesota

- 2013 – 2014 Board member, Minnesota-China Academic and Agricultural Program
- 2012 Interim Senate, Council of Graduate Students
- 2012 Student Representative Alternative, Graduate Education Committee
- 2009 – 2011 Departmental Representative, Council of Graduate Students

PROFESSIONAL DEVELOPMENT

- 2017 – 2018 New Faculty Institute, USC Center for Excellence in Teaching
- 2013 – Professional Soil Scientist In-Training (SSIT#143692)
- 2013 Boreas Leadership Program: Communication and Media, Systems Thinking, Interactive Leadership. Institute on the Environment, University of Minnesota
- 2012 Professional Development Workshop, Earth Science Women Network (ESWN), Boulder, CO
- 2011 Preparing Future Faculty Program Core Course I: Teaching in Higher Ed. University of Minnesota
- 2010 Leadership Development Workshop I and II, American Society of Agronomy. Long Beach, CA
- 2009 ESRI International User Conference Student Assistant. San Diego, CA
- 2007 Project Management Training, American Management Association. San Francisco, CA

NON-ACADEMIC WORK

- Magellan Navigation (Formerly Thales Navigation), San Dimas, California
- 2006 – 2008 Project Manager, Mapping
- 2005 – 2006 Mapping Engineer / GIS Analyst

PROFESSIONAL MEMBERSHIPS

American Association of Geographers
Association for Women Geoscientists
American Geophysical Union
California Geographic Information Association
Minnesota GIS/LIS Consortium
Soil Science Society of America

LANGUAGES

English (excellent command/highly proficient)
Mandarin Chinese (native)
Taiwanese (native)