An-Min Wu, Ph.D.

Lecturer of Spatial Sciences
Spatial Sciences Institute, University of Southern California
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EDUCATION

PhD	University of Minnesota, Twin Cities, Minnesota Land and Atmospheric Science, Geographic Information Science minor Dissertation Title: Hillslope redistribution of soil organic carbon in the depressional landscape in Minnesota Co-advisers: Dr. Jay Bell and Dr. Ed Nater	2014
MS	The Pennsylvania State University, University Park, Pennsylvania Soil Science Thesis: Development of a vineyard site assessment model for Southeastern Pennsylvania using geospatial technologies Co-advisers: Dr. Gary W. Petersen and Dr. Rick Day	2004
MEPC	The Pennsylvania State University, University Park, Pennsylvania Environmental Pollution Control Paper: Distribution of soil test phosphorus in Pennsylvania Adviser: Dr. Gary W. Petersen	2002
BS	National Taiwan University, Taipei, Taiwan Horticultural Science, Landscape Design & Planning Division	1998

CURRENT FULL-TIME APPOINTMENT

Lecturer of Spatial Sciences, University of Southern California since Aug 2016
Courses taught: *Concept of Spatial Thinking, Principles of Spatial Data Analysis, Spatial Analysis, Spatial Databases, The Water Planet laboratory*

- Teaching in the interdisciplinary PhD program in Population, Health and Place
- Teaching in online MS and graduate certificate programs in Geographic Information Science & Technology (GIST)
- Teaching the laboratory sessions in the undergraduate General Education (GE) course The Water Planet

PREVIOUS TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Minnesota
Course: *Field Study of Soils* 2013 – 2014
Course: *Basic Soil Science (undergraduate GE)* 2009

- Managed course contents, attendance and grades on the online Moodle system
- Lectured the class when instructor was absent (~80 students)
- Assisted student learning and discussions in recitation sessions (7-15 students)
- Supervised field soil sampling and descriptions in small groups (3-7 students)

PREVIOUS TEACHING EXPERIENCE (Continued:)

Assistant Coach, U of Minnesota Soil Judging Team, Springfield, MO 2013

- Prepared the undergraduate student team for soil judging competition in the fields
- Co-Led the students to the regional competition (the 4th place in Region V)

Graduate Teaching Assistant, The Pennsylvania State University 2000 – 2003

Graduate-level classes: *Environmental Geographic Information Systems (GIS) & GIS Applications*

- Supervised students in GIS learning during laboratory sessions and office hours
- Updated, prepared and graded weekly laboratory assignments

Assistant Instructor, Land Analysis Curriculum Development, McVeytown, PA 2002

- Assisted local k-12 teachers in Geography/GIS curriculum development

RESEARCH EXPERIENCE

Postdoctoral Research Associate, University of Minnesota 2014 – 2016

Department of Soil, Water, and Climate

- Evaluated national soil sampling strategy in the FIA database
- Built a spatial-explicit model to estimate soil carbon storage in main forest types
- Published and presented in the national conferences

Project: *Change detection of soil organic carbon in the Forest Inventory* Analysis *(FIA) program* (Funded by U.S. Forest Service Northen Research Station)

Graduate Research Assistant, University of Minnesota 2008, 2011 – 2013

Department of Soil, Water, and Climate

- Supervised undergraduate field crews in soil sample collection and analysis
- Processed spatial soil data and derived terrain databases from lidar DEM
- Collected and mapped regional land use and agricultural census data

Projects: *Terrestrial carbon sequestration and storage in Midwest, USA; Distribution and movement of soil organic carbon in grassland and agricultural landscapes* (Funded by Minnesota Environment & Natural Resources Trust Fund)

Full-Time Research Project Assistant, The Pennsylvania State University 2004 – 2005

Geospatial Technology Program, Land Analysis Laboratory

- Prepared databases for the web-based GIS vineyard suitability

Project: *Grape Expectations: Pennsylvania's on-line GIS assesses vineyard site quality* (Funded by Pennsylvania Department of Agriculture)

Graduate Research Assistant, The Pennsylvania State University 2004

Department of Crop and Soil Sciences

- Coordinated with vineyard growers and grape experts to establish regional site selection criteria
- Visited, delineated and post-processed 24 wine-grape vineyard properties
- Developed spatial climate databases critical for grape growing in Pennsylvania using spatial statistics
- Modeled Pennsylvania's *terroir* using spatial soil, terrain, and climate databases

PROFESSIONAL EXPERIENCE

Project Manager, Mapping	Magellan Navigation (Formerly Thales), San Dimas, CA	2006 – 2008
Mapping Engineer/GIS Analyst	Thales Navigation, San Dimas, CA	2005 – 2006
Research Project Scientist	Geospatial Technology Program, University Park, PA	2004 – 2005

PUBLICATIONS

Journal Papers

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

In prep. **Wu, A.**, Bell, J.C., and Nater, E.A.

Spatial predictive models for post-settlement alluvium using local and regional terrain attributes. *Geoderma*.

In prep. **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*.

Conference Proceedings

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.

PRESENTATIONS

Wu, A., Nater, E.A., Perry, C.H., Dalzell, B.J., and Wilson, B.T. 2015. 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].

Fissore, C., Dalzell, B.J., Berhe, A.A., Voegtle, M., Evans, M., and **Wu, A.** 2015. 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].

Wu, A., Nater, E.A., Perry, C.H., Dalzell, B.J., and Wilson, B.T. 2015. Change detection for soil carbon in the FIA database. FIA Science Symposium. Portland, Oregon. December 8-10, 2015 [Oral Presentation].

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].

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]

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]

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 29, 2013. [Oral Presentation]

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]

PRESENTATIONS (Continued:)

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]

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]

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]

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]

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, 2004. [Poster Presentation]

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]

Wu, A. Grape vineyard site selection. Vineyard Soil Workshop, Lancaster, PA. May 2004. [Invited Speaker]

HONORS

Wilford Gardner Fellowship 2014
World Congress of Soil Science Travel Fellowship, funded by National Science Foundation via Soil Science Society of America

Howe Scholarship 2013
The Howe Graduate Fund, University of Minnesota

Graduate Fellowship 2009 - 2010
University of Minnesota

Student Ambassador/ Scholarship 2004
American Congress on Survey and Mapping (ACSM) & Cartography and Geographic Information Society (CaGIS)

Member 2004
Gamma Signma Delta Agricultural Honor Society, Penn State Chapter

PROFESSIONAL ACTIVITIES AND DEVELOPMENT

Professional Soil Scientist In-Training (SSIT#143692) 2013 - present
Boreas Leadership Program: *Communication and Media, Systems Thinking, Interactive Leadership*. Institute on the Environment, University of Minnesota, Twin Cities, MN 2013
GIS-Soil Research Laboratory Exchange, University of Florida, Gainesville, FL
- Supervised by Dr. Sabine Gruwald 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, Twin Cities, MN 2010
Leadership Development Workshop I and II, American Society of Agronomy (ASA), Long Beach, CA 2010
Student Assistant, ESRI International User Conference, San Diego, CA 2009
Project Management Training, American Management Association, San Francisco, CA 2007

GRANTS

Wilford Gardner fellowship, Soil Science Society of America & National Science	2014
Scholarship, Howe Graduate Fund, U of Minnesota	2013
Baker and Kuehnast travel scholarship	2013
Research assistantship, Environmental and Natural Resources Trust Fund	2011 - 2013
Research assistantship, Department of Soil, Water, and Climate, U of Minnesota	2008 - 2011
Martin travel grant, Department of Soil, Water, and Climate, U of Minnesota	2010
Professional travel grant, Graduate and Professional Student Assembly, U of Minnesota	2010
Graduate fellowship, University of Minnesota	2009
Teaching assistantship, Department of Soil, Water, and Climate, University of Minnesota	2009
Tuition grant-in-aid, Pennsylvania State University	2004
Research assistantship, Department of Crop and Soil Sciences, Pennsylvania State U	2003 - 2004
Teaching assistantship, Department of Crop and Soil Sciences, Pennsylvania State U	2000 – 2003

PROFESSIONAL MEMBERSHIPS

Association for Women Geoscientists
California Geographic Information Association
Minnesota GIS/LIS Consortium

COURSES TAUGHT

University of Southern California 2016 - present

SSCI 581 – Concepts for Spatial Thinking
SSCI 582 – Spatial Databases
SSCI 583 – Spatial Analysis
SSCI 683 – Principles of Spatial Data Analysis
SSCI 265Lg – The Water Planet (laboratory sessions only)

COMMITTEE MEMBERS

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

Ryan Mock, Julia Goldsworth, Samantha Bamberger

LANGUAGE SKILLS

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

COMMUNITY WORK - INSTITUTIONAL & PUBLIC SERVICE

Gallery Interpreter, LA County Natural History Museum
Judge, Los Angeles County Science Fair
Advisory Board Member, Pedometrics Commission, International Union of Soil Sciences
Judge, Twin Cities Regional Science Fair
Board Member, Minnesota-China Academic and Agricultural Collaboration Program (MCAA)

COMMUNITY WORK - INSTITUTIONAL & PUBLIC SERVICE (Continued:)

Interim Senate, Council of Graduate Students (COGS), University of Minnesota
Graduate Education Committee, Student Representative Alternate, University of Minnesota
Departmental Representative, COGS, University of Minnesota
Treasurer, Shotokan Karate Club, University of Minnesota
Vice President, Graduate Student Association, Department of Soil, Water and Climate, U of Minnesota
Officer, GIS Student Organization, University of Minnesota
Activity Executive Officer, Taiwanese Student Association, The Pennsylvania State University
The News and Publication Officer, University Chorus, National Taiwan University