

Curriculum Vitae
(abbreviated)

Wei-Ning Xiang

(象伟宁)

Professor of Geography
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1. EDUCATION AND ACADEMIC POSITIONS

1.1. Education

Postdoctoral Fellow, 1990, Institute of Urban and Regional Development,
University of California at Berkeley;

PhD, 1989, University of California at Berkeley;

MRP, 1986, University of Massachusetts at Amherst;

BS, 1982, Beijing Normal University, Beijing, China.

1.2. Permanent Positions

Professor, University of North Carolina at Charlotte
July 2001 to present;

Associate Professor, University of North Carolina at Charlotte,
July 1996 to June 2001;

Assistant Professor, University of North Carolina at Charlotte,
August 1990 to June 1996;

Lecturer, Beijing Normal University,
February 1982 to January 1985.

1.3. Adjunct Positions

Zi-Jiang Endowment Adjunct Professor of Urban Ecology and Planning (紫江城市生态与规划学讲座教授), East China Normal University, Shanghai, China, September 2007 to present;

Zi-Jiang Endowment Research Fellow(紫江客座研究员), Shanghai Key Laboratory for Ecology of Urbanization and Eco-Restoration (上海市城市化生态过程与生态恢复重点实验室), the Chinese Ministry of Education Key Laboratory of Geographic Information Science (中国教育部地理信息科学重点实验室), East China Normal University, Shanghai, China, September 2007 to present.

1.4. Visiting Positions

Visiting Professor of Geography, University of California at Santa Barbara,
January 2002 to June 2002;

Research Fellow, National Center for Geographic Information and Analysis,
University of California at Santa Barbara, January 2002 to June 2002.

1.5. Service Positions

Traditional refereed journals

Member, the Editorial Board, *Landscape and Urban Planning*, August 2007 to
present;

Member, the Editorial Board, *Environment and Planning B: Planning and Design*,
January 1999 to January 2005.

On-line refereed journals

Member, the Editorial Board, *The Open Geography Journal*, October 2007 to
present;

Member, the Editorial Board, *The Open Environmental Journal*, October 2007 to
present.

2. RESEARCH EXPERIENCE

2.1. Selected Funded Projects as Principal Investigator

A Data Inventory and Geo-Coding Feasibility Assessment, the City of Charlotte, North Carolina
(2001)

A Preliminary Assessment of Greenway Potentials for the City of Concord, North Carolina (2000)

A County-Wide Demography, Employment, and Land Development (DELD) Information and
Simulation System, Mecklenburg County, North Carolina (1998-1999)

A GIS Based Inventory of the Potential Brownfield Supplies in the City of Charlotte, North
Carolina (1997)

The Development of a GIS Based Economic Development Information System (EDIS) for the 10
Business Districts, Charlotte, North Carolina (1997)

A County-Wide Land Development Information and Simulation System, Mecklenburg County,
North Carolina (1996-1997)

The Development of a GIS-Based Emergency Preparedness/ Management Support System, the
City of Concord, North Carolina (1995)

The Development of a GIS-Based Model for Water Quality Buffer Analysis in the Mountain Island
Lake Watershed, Mecklenburg County, North Carolina (1994-1995)

Construction of Geo-Info-Structure: Database Development Assistance for the City of Concord, North Carolina (1994-1995)

A GIS-Based Economic Development Analysis for Comprehensive Land Use Planning, the City of Concord, North Carolina (1994-1995)

The Development and Customization of a City-Wide GIS-Based Decision Support System for the City of Concord, North Carolina (1993-1994)

Application of a GIS-Based Planning Support System to Land Use Plan Generation and Evaluation for the City of Concord, North Carolina (1992-1993)

2.2. Selected Funded Projects as Co-Principal Investigator

Optimization of the Shoreline Ecosystem Services, Lin Gang City, Shanghai, China. (临港新城环湖绿带生态优化关键技术研究示范) [with Professors Yongli Cai (蔡永立), Kai Yang (杨凯), Yatong Xu (徐亚同) at East China Normal University]. Shanghai Municipal Council of Science and Technology (2009—2011)

The Degradation of Riparian Ecological Systems: Its Mechanism and Effects on Aquatic Environment (河岸带生态系统退化机制及水环境效应) [with Professors Yongli Cai (蔡永立) and Kai Yang (杨凯) at East China Normal University], Shanghai Municipal Council of Science and Technology (2008—2010)

The Development of Spatial Modeling and Simulation Capabilities for Critical Infrastructure Protection Analysis, Planning, and Decision-Making (with Professors Tolone, W., Ahn, G.J., Wilson, D., Raja, A., Lee, S.W. of the Department of Software and Information System at University of North Carolina at Charlotte), U.S. DOD (2003-present)

Critical Infrastructure Data Acquisition and Impact Modeling (with Professors Tolone, W., Wilson, D., Raja, A. of the Department of Software and Information System at University of North Carolina at Charlotte), SPAWAR (Space and Naval Warfare Systems Center, Charleston, South Carolina) (2004)

GIS Mapping for University Research Park (with Professor McCoy, W. of the Department of Political Science at University of North Carolina at Charlotte), Queen's Properties, Inc. (2001)

UCAC Plan for University City (with Professor McCoy, W. of the Department of Political Science at University of North Carolina at Charlotte), Charlotte Chamber of Commerce (2000-2001)

A Survey of the Housing and Renting Affordability in Mecklenburg County (with Professor McCoy, W. of the Department of Political Science at University of North Carolina at Charlotte), Mecklenburg County Department of Engineering and Building Standards, North Carolina (2000-2002)

Application of a GIS-Based Planning Support System to Land Carrying Capacity Analysis for the City of Concord, North Carolina (with Professor Furuseth, O. of the Department of Geography and Earth Sciences at University of North Carolina at Charlotte), (1991-1992)

Application of Remote Sensing Technology to Watershed Resource Conservation and Land Use Planning in the San-Chuan River Basin, Shan-Xi Province, China (with Professors Ji Zhao

(赵济) and Qiming Zhou (周启鸣) at Beijing Normal University, Beijing, China), the Food and Agriculture Organization of the United Nations (1984)

2.3. Selected Funded Projects as Project Staff

Research scientist, Prime Farmland Designation Research [Professor Xin-Qi Zheng (郑新奇) at China University of Geosciences, Beijing, China is the PI], the National Natural Science Foundation, China (国家自然科学基金资助项目) (2007).

Research scientist, Urban Change—Integrated Modeling Environment (UCIME) (Professors Keith Clarke and Helen Couclelis at University of California at Santa Barbara are the Co-PIs), the National Science Foundation (January 2002—June 2002).

Postdoctoral fellow, California's Urban Futures: A Study of Alternative Scenarios, 1990—2020 (Professors Peter Hall and Michael Teitz at University of California at Berkeley are the Co-PIs), the William and Flora Hewlett Foundation (January 1990—August 1990).

Research assistant, Lake Tahoe Environmental Planning and Modeling (Professor Robert Twiss at University of California at Berkeley is the PI), Office of the Attorney General, California Department of Justice (January 1988—December 1989).

Research assistant, Application of Geographic Information Systems to Seismic Microzonation (Professors Thomas Dickert and Robert Twiss at University of California at Berkeley are the co-PIs), the National Science Foundation (January 1988--August 1988).

Research assistant, Application of Geographic Information Systems to Assessment of Potential Contamination of Groundwater in the San Francisco Bay Area (Professor Thomas Dickert at University of California at Berkeley is the PI), U.S. EPA (September 1986—December 1987).

Research assistant, The METLAND Research Team—Application of Geographic Information Systems to Landscape Planning (Professors Julius Gy. Fabos, E. Bruce MacDougall, and Meir Gross at University of Massachusetts at Amherst are the co-PIs), U.S. DOA Forest Service (January 1985—September 1986).

Research assistant, Agricultural Regionalization of the Beijing Area—The Classification of Geomorphological Units of the Beijing Area [Professors Ji Zhao (赵济), Zhen-Pu Xu (徐振溥) and Xiu-Ping Sun (孙秀萍) at Beijing Normal University, Beijing, China are the co-PIs], Beijing Agriculture Bureau, Beijing Forestry Bureau, Beijing Agriculture and Forestry Science Institute (1983).

3. PUBLICATIONS

3.1. Selected Refereed Articles

Single Author

Xiang, W. -N. (2001). Weighting-by-Choosing: A Weight Elicitation Method for Map Overlays. *Landscape and Urban Planning*, 56(1), pp.61-73.

- Xiang, W. -N. (2000). A Theoretical Framework for Weight Value Set Construction in Land Suitability Assessment. *Environment and Planning B: Planning and Design*, 27(4), pp.599-614.
- Xiang, W. -N. (1998). Assessment of the Buffer-Induced Setback Effects on Riparian Scenic Quality by Digital Tools. *Environment and Planning B: Planning and Design*, (25)6, pp.881-894.
- Xiang, W. -N. (1997). Knowledge-Based Decision Support by CRITIC. *Environment and Planning B: Planning and Design*, (24)1, pp.69-79.
- Xiang, W. -N. (1996a). A GIS Based Method for Trail Alignment Planning. *Landscape and Urban Planning*, 35(1), pp.11-23.
- Xiang, W. -N. (1996b). Making Better, Quicker, and Wiser Decisions with a Decision Facilitating and Advising System. *Environment and Planning B: Planning and Design*, 23(4), pp.401-419.
- Xiang, W. -N. (1996c). GIS-Based Riparian Buffer Analysis: Injecting Geographic Information Into Landscape Planning. *Landscape and Urban Planning*, 34(1), pp.1-10.
- Xiang, W. -N. (1993a). A GIS Method for Riparian Water Quality Buffer Generation. *International Journal of Geographical Information Systems*, 7(1), pp.57-70.
- Xiang, W. -N. (1993b). Application of a GIS-Based Stream Buffer Generation Model to Environmental Policy Evaluation. *Environmental Management: An International Journal for Decision Makers, Scientists, and Environmental Auditors*, 17(6), pp.817-827.
- Xiang, W. -N. (1993c). A GIS/MMP Based Coordination Model and its Application to Distributed Environmental Planning. *Environment and Planning B: Planning and Design*, 20(2), pp.195-220.
- Xiang, W. -N. (1992a). Conflict Prediction and Provention in Rural Land-Use Planning: A GIS Approach. *Progress in Rural Policy and Planning*, 2, pp.17-29.
- Xiang, W. -N. (1992b). Creating Environments for Quality GIS Humanwares. *GIS World*, 5(3), pp.104-105.

Lead Author

- Xiang, W. -N., Clarke, K.C. (2003). The Use of Scenarios in Land Use Planning. *Environment and Planning B: Planning and Design* 30(6), pp.885 – 909.
- Xiang, W. -N., Salmon, F.W. (2001). Button Design for Weighted Map Overlays. *Environment and Planning B: Planning and Design*, 28(5), 655-670.
- Xiang, W. -N., Stratton, W.L. (1996). The *b*-Function and Variable Stream Buffer Mapping: A Note on "A GIS Method for Riparian Water Quality Buffer Generation". *International Journal of Geographical Information Systems*, 10(4), pp.499-510.
- Xiang, W. -N. and Whitley, D.L. (1994). Weighting Land Suitability Factors by the PLUS Method. *Environment and Planning B: Planning and Design*, 21(3), pp.273-304.

Xiang, W. -N. and Furuseeth, O.J. (1993). Conflict Provention in Rural Land Use Planning Using a GIS-Based System. Geography Research Forum, 13, pp.139-151.

Xiang, W. -N., Gross, M., Fabos, J.G., MacDougall, E.B. (1992). A Fuzzy Group Multicriteria Decision Making Model and its Application to Land Use Planning. Environment and Planning B: Planning and Design, 19(1), pp.61-84.

Co-Author

Shearer, K.S., Xiang, W. -N. (2009). Representing Multiple Voices in Landscape Planning: A Land Suitability Assessment Study for a Park Land-Banking Program in Concord, North Carolina, USA. Landscape and Urban Planning, 93(2), pp.111-122.

McNally, R.K., Lee, S.W., Yavagal, D., Xiang, W.-N., (2007). Learning the Critical Infrastructure Interdependencies Through an Ontology-Based Information System. Environment and Planning B: Planning and Design, 34(6), pp.1103-1124.

Diao, Y., Xiang, W. -N. (2007). How Complex Can a Land Suitability Map Be? International Journal of Geographic Information Science, 21(7), 747-755.

Shearer, K.S., Xiang, W. -N. (2007). The Characteristics of Riparian Buffer Studies. Journal of Environmental Informatics, 9(1) 41-55.

Zheng, X. -Q., Yang, S. -J., Xiang, W. -N., Wang, A. -P., (2007). A GIS-based Multi-Criteria Farmland Classification Approach to Prime Farmland Designation and its Application in Jinan, China. Transactions of the Chinese Society of Agricultural Engineering (农业工程学报), 23(1), pp.66–71.

Perkins, R.M., Xiang, W. -N. (2006). Building a Geographic Info-Structure for Sustainable Development Planning on A Small Island Developing State. Landscape and Urban Planning, 78 (4), pp.353-361.

Tolone, W.J., Wilson, D., Raja, A., Xiang, W.N., Hao, H.L., Phelps, S., Johnson, E.W. (2004). Critical Infrastructure Integration Modeling and Simulation. Intelligence and Security Informatics, Proceedings Lecture Notes in Computer Science. 3073, pp.214-225.

Conine, A., Xiang, W. -N., Young, J., Whitley, D. (2003). Planning for Multi-Purpose Greenways in Concord, North Carolina. Landscape and Urban Planning, 68 (2-3), pp.271-287.

Diao, Y., Xiang, W. -N. (2002). Button Design for Map Overlays: 2. Environment and Planning B: Planning and Design, 29(5), pp.673 – 685.

Gronlund, A.G., XIANG, W. -N., Sox, J. (1994). GIS, Expert System Technologies Improve Forest Fire Management Techniques. GIS World, 7(2), pp.32-36.

Kalinski, A.A., Xiang, W. -N. (1993). Potential Surface Mapping Reveals Unmet Retail Demand. Business Geographics, 1(2), pp.42-43.

Whitley, D.L., Xiang, W. -N., Young, J.J. (1993). Use a GIS "Melting Pot" to Assess Land Use Suitability. GIS World, 6(7), pp.48-51.

Young, J.J., Xiang, W. -N., Furuseh, O.J. (1993a). "Univer-City" Partnership Brings People, Technology Together. GIS World, 6(3), pp.52-54.

Young, J.J., Xiang, W. -N., Furuseh, O.J. (1993b). "Univer-City" Partnership Brings People, Technology Together. Government Finance Review, 9(3), pp.37-39. Chicago, IL: Government Finance Office Association (GFOA).

3.2. Book Chapters

Tolone, W.J., Xiang, W. -N., Raja, A., Wilson, D., Tang, Q., McWilliams, K., McNally, R. (2006). Mining critical infrastructure information from municipality data sets: a knowledge-driven approach and its applications. In: Hilton, B.N. (Editor). Emerging Spatial Information Systems and Applications. Hershey, PA: Idea Group Publishing, pp.310-325.

Xiang, W. -N. (2003). Balancing Measurement Precision with Cognitive Efforts in Weighting Method Selection. In: Guhathakurta, S (Editor). Integrated Land Use and Environmental Modeling: A Survey of Current Applications and Research. Springer, pp.159-170.

3.3. Articles in Refereed Conference Proceedings

Borel, F., Menezes, G.B., Xiang, W. -N. (2006) A GIS-Based Job Accessibility Analysis. Papers of the Applied Geography Conferences, 29:435-442.

4. TEACHING EXPERIENCE

4.1. Courses Taught

At UNC-Charlotte (regular offerings, 1990-present)

GIS and Homeland Security Planning

Multi-Attribute Assessment and Evaluation for Spatial Planning and Decision-Making

Introduction to Geographic Information Systems

Advanced Geographic Information Systems

Advanced Seminar on Spatial Decision Support Systems

Geographic Information Techniques for Community Planning

Advanced Seminar on Spatial Modeling

At UC-Santa Barbara (2002)

Multi-Criteria Decision Making with GIS

Applications of Geographic Information Systems

At Beijing Normal University (1982-1984)

Physical Geography of China [with Professor Ji Zhao (赵济)]

Geography of Beijing [with professor Xiu-Ping Sun (孙秀萍)]

4.2. Courses Team-Taught At UNC-Charlotte (Ad Hoc)

GIS Applications in Retail Locations (with Professor Dennis Lord)

GIS Applications in Public Facility Allocation (with Professor Wayne Walcott)

GIS Applications in Land Use and Environmental Planning (with Professor Owen Furuseth)

Hydrological Modeling in GIS (with Professor Craig Allan)

GIS in Health (with Professor Jerry Pyle)

4.3. Sponsor of Significant Student Activities (at UNC-Charlotte)

Graduate student Robert McNally—The first part of his MA thesis “An Ontology-Driven Approach to Representing and Visualizing Critical Infrastructure Interdependencies” won 2005 North Carolina State GIS Conference Herbert Stout Award for Innovative Student Paper in GIS (Professor Seok-Won Lee of the Department of Software and Information Systems at University of North Carolina at Charlotte is the major academic advisor)

Graduate student Kyle Thieman—A paper based upon his MA thesis “The Use of GIS in Counter-Terrorism Exercises” was presented at The 17th Annual TUGIS—Geographic Information Sciences Conference, March 22-26, 2004, Towson, Maryland (Professors Cindy Combs of the Department of Political Science and Professor Edd Hauser of the Center for Transportation Policy Studies at University of North Carolina at Charlotte are co-sponsors).

Undergraduate student Steven Castongia—The GIS project “MAAE Methods In Site Suitability Assessment” won 2003 North Carolina State GIS Conference Herbert Stout Award for Innovative Student Paper in GIS (Lecturer Paul Smith of the Department of Geography and Earth Sciences at University of North Carolina at Charlotte is the Co-sponsor)

Undergraduate student Kate Chaney—The GIS project “Using GIS for a Visual Representation of the Health and Family Support Assessment in Lincoln and Gaston Counties” won 2001 North Carolina State GIS Conference Herbert Stout Award for Innovative Student Paper in GIS (Professor Jerry Pyle of the Department of Health Behavior and Administration at University of North Carolina at Charlotte is the major academic advisor)

Graduate student Jerod Dinkins—The GIS project “Using GIS to Create a Database of Housing Affordability in Mecklenburg County” won 2001 North Carolina State GIS Conference Herbert Stout Award for Innovative Student Paper in GIS.

Undergraduate student Laura Hibdon—The GIS class project “Linking Law Enforcement with Demographic Data to Support Crime Prevention in the Grier Heights Neighborhood” won 1996 North Carolina State GIS Conference Herbert Stout Award for Innovative Student Paper in GIS.

Graduate student Mike Locke—The GIS class project "A GIS Based Mobile Phone Transmission Tower Study" won 1996 North Carolina State GIS Conference Herbert Stout Award for Innovative Student Paper in GIS.

Graduate student Wendy Stratton—Master thesis "Generating Variable Width Stream Buffers Using a Geographic Information System" won the 1993 North Carolina State GIS Conference Herbert Stout Award for Most Innovative Student Paper in GIS.

Graduate student Art Kalinski—The GIS class project "A Model for Retail Location Analysis" won the 1991 Southeast ARC/INFO User Conference Most Unique GIS Project (Professor Dennis Lord of the Department of Geography and Earth Sciences at University of North Carolina at Charlotte is the major academic advisor).

Graduate student Wendy Stratton—The GIS class project "Impacts of the Hurricane on the Carolinas" won the 1991 Southeast ARC/INFO User Conference Most Communicative GIS Project.

Graduate student Wendy Stratton—The GIS class project "World Oil Tanker Spills" won the 1991 National Geographic Best Computer Assisted Map (Lecturer Jeff Simpson of the Department of Geography and Earth Sciences at University of North Carolina at Charlotte is the major academic advisor)

5. AWARDS

The class project GIS-Based Suitability Assessment for a Signature Park Location in Concord, North Carolina won *the 2000 North Carolina Chapter of American Planning Association (NCAPA) Outstanding Graduate Project Award*. This is a class project done by students in the Geographic Information Techniques for Community Planning class, team-taught with David Whitley of Concord in the Fall 1999.

The project GIS-Based Planning Decision Support System won *the 1993 North Carolina Chapter of American Planning Association (NCAPA) Small Community Outstanding Planning Award* (Professor Owen Furuseth of the Department of Geography and Earth Sciences at University of North Carolina at Charlotte, and Planning Director Jeff Young of the City of Concord are Co-contributors).

The project Application of a GIS-Based Planning Support System to Land Carrying Capacity Analysis for the City of Concord, North Carolina won *the 1992 North Carolina Chapter of American Society of Landscape Architects (NCASLA) Merit Award* (Professor Owen Furuseth of the Department of Geography and Earth Sciences at University of North Carolina at Charlotte is the Co-PI, and Planning Director Jeff Young of the City of Concord is the Co-contributor).