### **SHIGUO JIANG**

Department of Geography and Planning, University at Albany, State University of New York Arts and Sciences 227, 1400 Washington Ave, Albany, NY 12222

Spatial Analysis Laboratory: <u>albany.edu/spatial</u>; 518-591-8561; <u>sjiang2@albany.edu</u>

#### **EDUCATION**

PhD	Geography	The Ohio	State	University	2007-2012.
TIID	Ocography.	THE OHIO	State	Om versitv.	4007-4014.

Dissertation: Estimating per-pixel classification confidence of remote sensing

imagers. Advisor: Desheng Liu

MS Geography, Peking University, 2001-2004.

Thesis: Fractal Urban Form of Beijing: Theory, Method, and Practice. Advisor:

Yixing Zhou

BS Geography, Peking University, 1997-2001.

Thesis: The determination of the regional limits of metropolitan area: a case study

of Hangzhou city. Advisor: Yixing Zhou

BA Economics (Dual major), Peking University, 1998-2001.

### **PROFESSIONAL HISTORY**

2022-	Associate Professor (tenured), Department of Geography and Planning, University
	at Albany, Albany, NY

2020-2022	Assistant	Professor	(tenure	track),	Department	of	Geography	and	Planning,
	University	y at Albany	. Albany	, NY					

- 2019-2020 Visiting Assistant Professor (maternity cause), Department of Geography and Planning, University at Albany
- 2016- Affiliated Faculty, Ph.D. Program in Information Science, College of Emergency Preparedness, Homeland Security and, University at Albany
- 2015-2019 Affiliated Faculty, Biodiversity, Conservation, and Policy (BCP) M.S. Program, Department of Biological Sciences, University at Albany (BCP program was merged into Department of Geography and Planning in Fall 2019).
- 2015- Research Associate, Center for Social and Demographic Analysis, University at Albany

2014-2019	Assistant Professor (tenure track), Department of Geography and Planning, University at Albany
2013-2014	Postdoctoral Researcher, School of Environment and Natural Resources, The Ohio State University, Columbus, OH. (Supervisor: Rattan Lal.)
2007-2012	Graduate Associate, Department of Geography, The Ohio State University.
2004-2007	Urban Planner, Beijing Tsinghua Urban Planning & Design Institute, Beijing, China
2001-2004	Graduate Associate, College of Environmental Sciences, Peking University, Beijing, China.

### **PUBLICATIONS**

Selected publications can be downloaded at: <a href="https://www.albany.edu/spatial/publications">https://www.albany.edu/spatial/publications</a>
Google Scholar Profile: <a href="https://scholar.google.at/citations?user=tJaShosAAAAJ&hl=en">https://scholar.google.at/citations?user=tJaShosAAAAJ&hl=en</a>

### Refereed Articles

- \*Shu, H., **Jiang, S.**, et al. 2022. Fusing or filling: which strategy can better reconstruct high-quality fine-resolution satellite time series? *Science of Remote Sensing*. 5: 100046. (\* *Indicating student*)
- **Jiang, S.**<sup>†</sup>, Alazawi, M.<sup>†</sup>, Messner, S. F. 2022. Identifying a spatial scale for the analysis of residential burglary: An empirical framework based on point pattern analysis, *PLoS ONE* 17(2): e0264718. († indicating co-first authors)
- O'Connor, C.\*, Prusinski, M., **Jiang, S.**, etc., 2021, A comparative spatial and climate analysis of human granulocytic anaplasmosis and human babesiosis in New York State (2013-2018), *Journal of Medical Entomology*, 58 (6): 2453-2466. (\* *Indicating student*)
- Buck, D. G., Esselman, P. C., **Jiang, S.**, Wainwright, J. D., Brenner, M., Cohen, M. J., 2019, Seasonal fluxes of dissolved nutrients in streams of catchments dominated by swidden agriculture in the Maya Forest of Belize, Central America, *Water*, 11 (4), 1-22.
- Ortega-Pacheco, D., Keeler, A., **Jiang, S.**, 2019. Climate change mitigation policy in Ecuador: Effects of land-use competition and transaction costs. *Land Use Policy*, 302-310.

<sup>\*</sup> Indicating student

<sup>†</sup> Indicating co-first author

- Esselman, P. C., **Jiang, S.**, Peller, H. A., Buck, D. G., Wainwright, J. D., 2018, Landscape drivers and social dynamics shaping microbial contamination risk in three Maya communities in Southern Belize, Central America, *Water*, 1-22.
- Chen, Y., **Jiang**, **S.**, 2017. Urban agglomeration, urban system and *chengshiqun*: Different concepts. *Urban Development Studies*, 24 (12): 8-15. (in Chinese: 城市集聚体、城市群和城镇体系).
- Lapenis, A. G., Lawrence, G. B., Buyantuev, A. **Jiang, S.**, Sullivan, T. J., McDonnell, T. C., and Bailey, S., 2017. A newly identified role of the deciduous forest floor in the timing of green-up. *Journal of Geophysical Research: Biogeosciences*, 122: 2876-2891.
- \*Hassan, A., Ijaz, S., Lal, R., Barker, D., Ansar, M., Ali, S., **Jiang, S.**, 2016. Tillage effect on partial budget analysis of cropping intensification under dryland farming in Punjab, Pakistan. *Archives of Agronomy and Soil Science*, 62 (2): 151-162. (\* *Indicating student*)
- Wainwright, J. D., **Jiang, S.**, Mercer, K., and Liu, D., 2015. The political ecology of a highway through Belize's forested borderlands. *Environment and Planning A*, 47:833-849.
- \*He, L., Paez, R., Liu, D., **Jiang, S.**, 2015. Temporal stability of model parameters in crime rate analysis: An empirical examination. *Applied Geography*, 58: 141-152. (\* *Indicating student*)
- \*Nakajima, T., Lal, R., **Jiang, S.**, 2015. Soil quality index of a crosby silt loam in central Ohio. *Soil & Tillage Research*, 146, Part B: 323-328. (\* *Indicating student*)
- **Jiang, S**. and Liu, D., 2012. Box-counting dimension of fractal urban form: stability issues and measurement design. *International Journal of Artificial Life Research*. 3(3): 41-63.
- Chen, Y. and **Jiang, S.**, 2010. Modeling fractal structure of systems of cities using spatial correlation function. *International Journal of Artificial Life Research*, 1(1): 12-34.
- Chen, Y., **Jiang, S.**, 2009. An analytical process of the spatio-temporal evolution of urban systems based on allometric and fractal ideas, *Chaos, Solitons and Fractals*, 39(1): 49-64.
- **Jiang, S.** and Zhou, Y., 2006. The fractal urban form of Beijing and its practical significance, *Geographical Research*, 25(2): 204-212. (in Chinese: 北京城市形态的分形集聚特征及其实践意义)
- Jiang, S., 2004. An allometric analysis of the Hohehot urban system: using the industrial and agricultural output data, *Economic Geography*, 24(6): 820-825. (in Chinese: 呼和浩特地区城镇体系工农业发展能力的异速生长分析)

Jiang, S., 2004. The determination of the regional limits of metropolitan area: a case study of Hangzhou city, *Geography and Geo-Information Science*, 20(1): 67-72. (in Chinese: 都市 区范围界定方法探讨——以杭州市为例)

# Unreferred Articles (Editor-invited)

- Lin, P., Pan, F., and **Jiang, S.**, 2006. Implications from the new town planning of Fangshan, satellite city of Beijing, *Beijing Planning Review*, (06): 29-34. (in Chinese: 房山新城规划导读)
- Pan, F., **Jiang, S.**, and Lin, J., 2006. Industrial transformation and upgrading, a new industrial framework based on circular economy, *Beijing Planning Review*, (06): 35-38. (in Chinese: 立足产业升级,实现两个转型——基于循环经济理念的产业空间布局新框架)

# Papers in Conference Proceedings

**Jiang, S.** and Liu, D., 2011. On chance-adjusted measures for accuracy assessment in remote sensing image classification. *Proceedings of American Society of Photogrammetry and Remote Sensing (ASPRS) Annual Conference*, Milwaukee.

# Chapters in Edited Books

- Wainwright, J. D., **Jiang, S.**, and Liu, D., 2013. Deforestation and the world-as-representation: the Maya forest of southern Belize. In *Land Change Science, Political Ecology, and Sustainability: Synergies and Divergences*, Brannstrom, C. and Vadjunec, J. Eds. New York: Routledge, 169-190.
- Jiang, S. and Chen, Y., 2004. Research on the urban agglomerations and metropolitan areas in Shandong peninsula. In *Development Strategy of Urban Agglomerations in Shandong Peninsula*, Zhou, Y. and Yang, H., Eds. Beijing: China Architecture & Building Press, 101-124. (in Chinese: 山东半岛城市群地区都市区地域界定)
- Jiang, S., 2002. Spatial structure of Hanghzou metropolitan area. In *Approaching the Qiantang River Time*, Hangzhou Planning Bureau Eds. Shanghai: Tongji University Press, 99-110. (in Chinese: 杭州都市区地域组织的界定)

### OTHER SCHOLARLY ACTIVITY

#### Consultancies/Reports

Wainwright, J., Peller, H., Esselman, P., **Jiang, S.**, Herce, F., Mercer, K, and Mesh, T., 2017. Changes on the Land History, Forests, Soils and Water: A Report to Aguacate, Jalacte, and Santa Cruz Villages.

#### **Translation**

Jiang, S. and Teng J. 2009. *Quantitative Methods and Applications in GIS* (English book written by Wang F., 2006, Boca Raton, FL: CRC Press). Beijing: Commercial Press. (in Chinese: 基于 GIS 的数量方法与应用)

### Software Handbook

Xu, H., Cai, R., **Jiang, S.**, 2002. *Mastering AutoCAD 2002 in 50 Lectures*. Beijing: China Water Power Press. (in Chinese: 突破AutoCAD 2002创作实例五十讲)

### **GRANT FUNDING**

#### **Federal**

2015-2018 Buyantuev, A. (PI), **Jiang, S.** (Co-PI), Lapenis, A. (Co-PI), Mower, J. (Co-PI), Zhou, L. (Co-PI), MRI: Acquisition of a small Unmanned Aircraft System (UAS) for natural and urban ecosystem studies and risk disaster management, National Science Foundation (NSF), US \$147,983

# **Other External Sponsors**

Wainwright, J. (PI), **Jiang, S.** (Co-I), Liu, D. (Co-I), Mercer, J. (Co-I), Orlando, L. (Co-I), *The Changing Maya Forest: Agroecological Change and Land-use Dynamics in the Maya Communities of Southern Belize*. National Geographic Society, NGS-CRE Grant, US \$20,000.

#### Ohio State University

- Wainwright, J. (PI), *Barbolla, L. J.* (Co-PI), Herce, F. (Co-PI), **Jiang, S.** (Co-PI), Kawa, N. (Co-PI), Mercer, J. (Co-PI), Peller, H. (Co-PI), Usheer, K. (Co-PI). *Making Maya milpa: maize farming, agroecological research, and food security in Belize and Ohio State.* The Ohio State University, Initiative for Food and Agricultural Transformation (**InFACT**) Linkage and Leverage Grant, US \$32,000.
- Jiang, S. (PI). Urban changes and self-organized spatial dynamics of Beijing in 1978-2008. Office of International Affairs (OIA), The Ohio State University, Dissertation Research Grant, US \$3,300

### University at Albany

- Jiang, S. (PI). Scaling soil chemistry through foliar chemistry: an integrated approach. University at Albany Faculty Research Award Program, Category B. (FRAP B). US \$3,500
- 2015-2016 **Jiang, S. (PI)**. Spatial-Temporal Analysis of Crime in Columbus, Ohio. Center for Social and Demographic Analysis (**CSDA**), SUNY Albany, Junior Faculty Research Award, US \$5,000

### **RESEARCH PRESENTATIONS**

# **Invited Guest Speaker**

- 2017 "Target-based Approach to Determine Spatio-Temporal Patterns of Crime", Center for Social and Demographic Analysis Colloquium, SUNY Albany (4/21)
- 2015 "Spatial variation of warming effects on plants", Joint Colloquium Series:
  Department of Atmospheric and Environmental Sciences and Atmospheric Sciences Research Center, SUNY Albany (11/23)
- 2015 "Remote Sensing Application in Forest Studies", Huyck Preserve & Biological Research Station (07/30)
- 2014 "Land Use Land Cover Change with Remote Sensing and Spatial Statistics", Beijing Tsinghua Urban Planning and Design Institute (07/25)

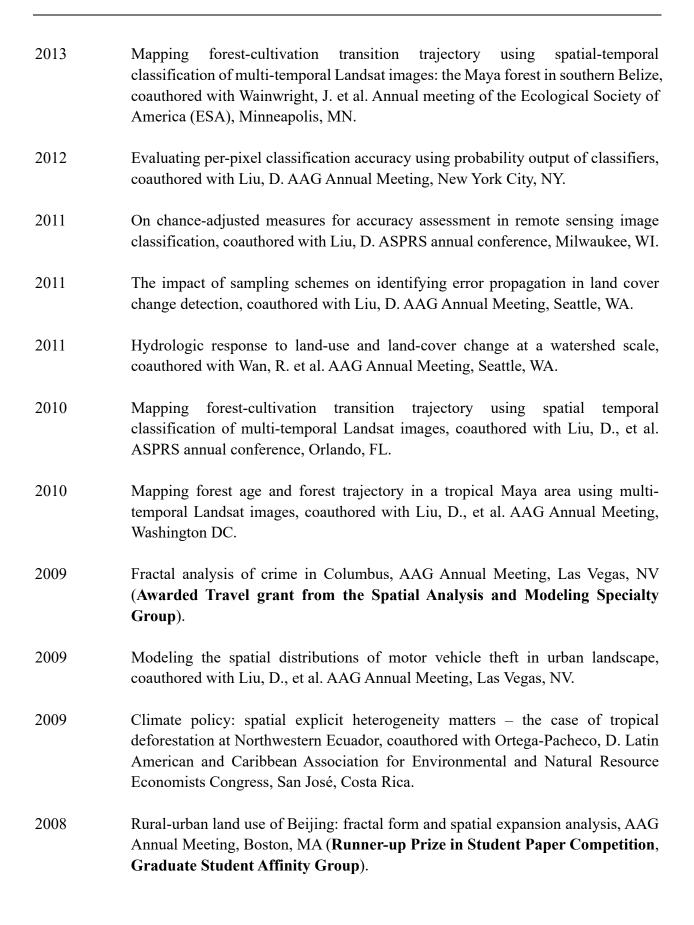
#### Presentations at Professional Meetings

(All single-authored unless noted)

- Entrepreneurship: An exploratory spatial analysis of business formation across Ohio State, coauthored with Yang, X. et al., Global Emerging Scholars Research Workshop, Annual Meeting of the American Accounting Association (AAA). San Diego, CA.
- Spatial pattern of Maya shifting cultivation. American Associate of Geographers (AAG) Annual Meeting (Virtual).
- What does *K* function tell us about point pattern? American Associate of Geographers (AAG) Annual Meeting, Denver, CO. (Conference cancelled due to COVID-19)



2017	Reconciliation of plant phenology across scales: understanding the relations between tree physiology dynamics, tree canopy phenology and satellite-observed landscape phenology, coauthored with Lapenis, A, et al. AAG Annual Meeting, Boston, MA.
2017	Monitoring vegetative response to climate fluctuation and seasonal change through UAS-based hyperspectral sensor and camera system, coauthored with Buyantuev, A, et al. AAG Annual Meeting, Boston, MA.
2017	Spatial variation of plant sensitivity to warming effects, coauthored with Lapenis, A, et al. AAG Annual Meeting, Boston, MA.
2016	Forest floor links climate warming to plant phenology, coauthored with Lapenis, A, et al. Tenth Annual Workshop of the Northeastern Soil Monitoring Cooperative, USGS New York Water Science Center, Troy, NY.
2016	A geostatistical method to improve image classification accuracy, coauthored with Liu, D, et al. AAG Annual Meeting, San Francisco, CA.
2016	Spatial autocorrelation in vacant houses, coauthored with Feng, Y. AAG Annual Meeting, San Francisco, CA.
2016	Satellite time-series analyses of dryland landscape change: A case of urbanizing Inner Mongolia in China, coauthored with Buyantuev, A. et al. US-IALE Annual Meeting: Landscape Change, Asheville, NC.
2014	Downscaling soil moisture. 2014 NISAR Applications Workshop: Linking Mission Goals to Societal Benefit, US Geological Survey Headquarters, Reston, VA.
2013	Estimating spatial quality of categorical data from remote sensing, Annual meeting of the AAG, Los Angeles. (Awarded the First Prize for the Student Honors Paper Competition, Geographic Information Science and Systems Specialty Group)
2013	APEX model simulation of runoff and non-point source pollution from watersheds with no-till management, coauthored with Gautam, S. et al. Annual meeting of American Society of Agronomy (ASA), Tampa, FL.



2004	The fractal urban form of Beijing, International Conference on City Change in the 21st Century, Shanghai, China.
2002	Allometric analysis of the Hohehot urban system, International Conference on Chinese Cities in the 21st Century, Urumqi, Xinjiang, China.
2001	On the boundary of metropolitan area, Colloquium on City and Regional Development-The Mainland and Taiwan, Beijing, China.

#### **TEACHING**

(Instructor unless noted)

### State University of New York at Albany

- 1. Introduction to Physical Environment, GOG101, Spring 2016; both Fall and Spring semester during 2017-2021; every Fall since 2022
- 2. GIS for Social Sciences, GOG422/522, Spring 2015, Fall 2016, Fall 2018, Fall 2020; every Spring of odd year since 2023
- 3. Ecological Modelling, GOG518/BIO518/INF508, every Fall during 2014-2016; Fall 2017, Fall 2019; every Spring of even year since 2022.
- 4. Remote Sensing Applications, GOG525, Fall 2015
- 5. Spatial Statistics, GOG529/BIO534, every Spring since 2015
- 6. GIS and Public Health (Guest Lecturer), EHS612/EPI621, Both Spring and Fall in 2016 and 2017, Spring 2022

#### The Ohio State University

- 7. Publication Workshop: Making Effective Figures for Technical Publication. 2013.
- 8. Advanced Remote Sensing, Geog8104, 2013 (Guest Lecturer).
- 9. Spatial Data Analysis, Geog883.02, 2011-12 (Guest Lecturer and Lab Instructor).
- 10. Initiative in Population Research (IPR) Workshops (Lab Instructor):
  - (1) Introduction to Spatial Statistics for Population and Health Research, 2011.
  - (2) Remote Sensing Applications in Social and Environmental Changes, 2010.

### Beijing Tsinghua Urban Planning and Design Institute

11. Technical Planning Workshop: Mathematical Methods for Urban Planning, 2006

#### Peking University

- 12. Urban Geography (Teaching Associate), 2002
- 13. Mathematical Methods in Geography (Lab Instructor), 2001

### STUDENT MENTORING AND RESEARCH ADVISING

(Unless otherwise noted, all advisees at SUNY Albany)

#### PhD candidates: advisor

1. Mohammed Alazawi (2016-2022), Department of Information Science

#### PhD candidates: co-advisor

2. Haemi Won (2017-present), School of Criminal Justice

### PhD candidates: committee member

3. Maggie Munkhjargal (2016-2018), School of Public Health

#### MA candidates: advisor

4. Nafin Harun (2015-2016)

Graduated in 2016, now working as Research Associate at Center for Health Workforce Studies (CHWS), School of Public Health, University at Albany, SUNY.

#### MS candidates: committee member

- 5. Collin J O'Connor (School of Public Health, 2020)
- 6. Erin Sanderson (Department of Biology, 2015); exam committee only

### Undergraduate research advisees

- 7. Alyssa A Kamara (2022-)
- 8. Jonathan Hehir (2016-2018, Now a PhD student at The Pennsylvania State University)

Finalist, John Odland Student Paper Award, Spatial Analysis and Modeling Specialty Group, American Association of Geographers (AAG), 2018.

9. Kevin Sheehan (2016)

### Visiting scholars

- 10. Anping Bi (2022-)
- 11. John B. Davis (Visiting Research Scientist)
- 12. Asma Hassana, Carbon Management and Sequestration Center, School of Environment and Natural Resources, The Ohio State University (Co-advised with Rattan Lal).
- 13. Samanpreet Kaur Baweja, Carbon Management and Sequestration Center, School of Environment and Natural Resources, The Ohio State University (Co-advised with Rattan Lal)

#### **SERVICE**

### Departmental

- 2018 Spring Interim Co-Advisor for Graduate Studies, Department of Geography and Planning, University at Albany, SUNY.
- 2017-present MSGIS Program Admission Committee, Department of Geography and Planning, University at Albany, SUNY.
- 2015-present Chair, GIS Curriculum Subcommittee, Department of Geography and Planning, University at Albany, SUNY.

# College (College of Arts and Sciences, CAS)

2018-2020 Academic Programs Committee, College of Arts and Sciences Faculty Council (CASFC), University at Albany, SUNY.

### University

2018-2020	Committee on Research	$(C_{\circ}\mathbf{D})$	Ilmizzancitz	Canata	Linixrangity	rat Albanz	CLIMIA
2010-2020	Commune on Research		i, University	y Senate.	Omversit	y at Albany	, SUNI.

- 2016-2019 Graduate Graduation Ceremony, University of Albany, SUNY
- 2016- Advisor, University of Albany SUNY Chapter, American Statistical Association
- 2014 University Fall Open House

#### **Professional**

2010-2011	Member,	Website	Committee,	The	International	Association	of	Chinese
	Profession	nals in Geo	ographic Infor	mation	n Sciences (CP	GIS).		

2009-2010 Member, Newsletter Committee, The International Association of Chinese Professionals in Geographic Information Sciences (CPGIS).

### Referee

### *Grant Proposal (Ad-hoc reviewer)*

• U.S. National Science Foundation (NSF)

#### **Book Publisher**

Springer

# Academic Journals

Annals of GIS; Cities; Computers, Environment and Urban Systems; Environment Management; Geographical Research; GeoJournal; International Journal of Digital Earth; Middle States Geographer; Journal of Geography & Natural Disasters; PLOS ONE; Remote Sensing of Environment; Science of Remote Sensing; Transactions in GIS

### Referee (Other)

• Rights and Resources Initiative. Provided review and consultancy as an expert in remote sensing of forest for Belize Maya

# Service Associated with Professional Meetings

2020	Chair and Organizer of a session: Spatial Autocorrelation Matters, AAG Annual Meeting, Denver, CO (conference cancelled due to COVID-19).
2018	Chair and Organizer of a session: Spatio-temporal Analysis of Crime, AAG Annual Meeting, New Orleans, LA.
2017	Panelist, Becoming a Biogeographer: Advice from a panel of experts, AAG Annual Meeting, Boston, MA.
2017	Chair and co-organizer of a series of two sessions: Phenological Responses to Climate Change, AAG Annual Meeting, Boston, MA.
2016	Chair and co-organizer of a series of two sessions: Classification Methods and Accuracy Assessment in Land Cover Mapping, AAG Annual Meeting, San Francisco, CA
2010	Chair of a session, Utilize Spatial Analysis and Modeling for Remote Sensing Data Processing, AAG Annual Meeting, Washington, DC.

#### **HONORS & AWARDS**

- Nominee for College of Arts and Sciences Dean's Award for Outstanding Achievement in Teaching, College of Arts and Sciences, SUNY Albany.
- First Place in Student Honors Paper Competition, Geographic Information Science and Systems Specialty Group, Annual meeting of the AAG, Los Angeles.
- 2009 Travel Award for Graduate Student Paper Competition, Spatial Analysis and Modeling Specialty Group, Annual meeting of the AAG, Las Vegas.
- 2008 **Runner-up Prize in Student Paper Competition**, Graduate Student Affinity Group, Annual meeting of the AAG, Boston.
- 2006 Award for Outstanding Research, Tsinghua Urban Planning & Design Institute
- 2002 **ING Antai Fellowship**, Peking University, China.
- Honor Graduate, privilege to enter the M.S. program with the waiver of the graduate school entrance exam, Peking University, China.

2000	Third Prize in the National Competition of Field Studies on Rural
	Development, Development Research Center of the State Council, China.
1999	Motorola Fellowship, Peking University, China.

# TRAVEL GRANTS FOR PROFESSIONAL MEETINGS

CAS Travel Grant (\$800-\$1000, yearly). University at Albany.
Geography Travel Grant (\$350). Ohio State University.
CWC and Geography Travel Grant (\$1,402.84). Ohio State University.
CWC and Geography Travel Grant (\$758.23). Ohio State University.
CWC and Geography Travel Grant (\$965.30). Ohio State University.
CWC (Climate, Water, and Carbon) Travel Grant (\$278.33). Ohio State University.
Geography Travel Grant (\$400, declined). Ohio State University.
Geography Travel Grant (\$400). Ohio State University.
Geography Travel Grant (\$400). Ohio State University.
Geography Travel Grant (\$200). Peking University.
Geography Travel Grant (\$200). Peking University.

# **SELECTED URBAN PLANNING/CONSULTING WORK (of 22 total)**

# Comprehensive Plan and Regional Plan

- 1. Erdos Municipal Government, Inner Mongolia Autonomous Region, 2007.
- 2. Beijing Municipal Government, 2006.
- 3. Nanchang Municipal Government, Jiangxi Province, 2005.
- 4. Yinchuan Municipal Government, Ningxia Hui Autonomous Region, 2004.

# Studies on Development Strategy

- 5. Urban Agglomerations in Shandong Peninsula (eight cities including Tsingtao, Ji'nan, etc), 2003.
- 6. Hohhot Metropolitan Area (one central city, eight counties and their seats), 2002.
- 7. Hangzhou Metropolitan Area (one central city, six counties and their seats), 2001.