Dr. Ming Zhang is a visiting research fellow at the Peking University–Lincoln Institute Center for Urban Development and Land Policy in 2008–2009. He has been a faculty member since 2004 in Community and Regional Planning at the University of Texas at Austin. Prior to joining UT Austin, Zhang worked at Texas A&M University, the Rockefeller Institute of Government (Albany, NY), and the Huazhong (Central China) University of Science and Technology. He received a Dissertation Fellowship from the Lincoln Institute in 2000–2001, and earned his Ph.D. in Urban and Regional Planning from the Massachusetts Institute of Technology.

Having a combined educational background in architecture, planning, and transportation, Zhang has developed a keen research interest in land use–transportation integration. He has researched the impact of rapid mass transit on land use, and the influence of urban form on travel behavior. He has studied many cities, including Boston, Houston, Austin, Dallas/Fort Worth, Hong Kong, Beijing, Shanghai, Guangzhou, Taipei, Bangkok, Curitiba, São Paulo, Brasilia, San Juan (PR), and Santo Domingo.

His most recent articles appeared in such journals as Urban Studies, Transportation Research Record, Journal of Planning Education and Research, Journal of the American Planning Association, *and* City Planning Forum *(in Chinese). He also contributed a chapter on value capture in land use–transit development to the 2007 Lincoln Institute book,* Urbanization in China: Critical Issues in an Era of Rapid Growth. *Contact: zhangm@mail.utexas.edu.*

Ming Zhang

LAND LINES: *In which research and educational programs have you worked with the Lincoln Institute?*
MING ZHANG: My work with the Lincoln Institute is mainly in two research areas: planning for megaregions and transit-oriented development (TOD), in both the United States and Chinese contexts. Teaming up with my colleagues Fritz Steiner and Kent Butler at UT Austin, I have studied the Texas Triangle megaregion. I am also collaborating with Professors Liangyong Wu and Weijia Wu of Tsinghua University for research on megaregions and spatial planning in China with a focus on the Beijing-Tianjin-Hebei (BTH) megaregion.

With support from the Lincoln Institute's China program, I studied development around rail transit stations in mainland China, Hong Kong, and Taipei, and in Latin American cities. In the U.S. context, I am conducting a case study of Austin, Texas, examining the potential of TOD to reduce the rate of external driving trips.

I am also involved in several teaching programs sponsored by the Lincoln Institute. Since 2005 I have lectured every spring on Infrastructure Development and Planning at the International Center for Land Policy Studies and Training, Taiwan. Participants of the program come mostly from Latin America, Southeast Asia, and Eastern Europe. In addition, I have lectured for various workshops and research fellowship courses organized by the Institute's China Program in Beijing.

LAND LINES: *You mentioned the Texas Triangle as a megaregion. Is the Triangle really a megaregion or just a geometrically shaped coincidence?*
MING ZHANG: How a megaregion is defined concerns basic conceptual and methodological issues in current megaregion research. We explored these issues through a case study of the Texas Triangle, which encompasses the metro areas of Dallas/Fort Worth, San Antonio/Austin, and Houston. A planning studio taught by Armando Carbonell of the Lincoln Institute, Robert Yaro of the Regional Plan Association, and Jonathan Barnett of the University of Pennsylvania in 2004 initially identified the Texas Triangle as one of the about ten emerging megaregions in the United States.

Since then various ways of defining megaregions in or around the Triangle have been proposed, with the number ranging from none to three. Our study looked into the growth histories and economic bases of the Triangle metros as "space of places," and analyzed goods and information movements among the metros as "space of flows." We also examined the ecological and environmental interdependency of these metros. Our empirical results suggest that they are becoming more integrated, while the mobility and environmental challenges facing one metro are also being felt by others. These challenges will likely increase as the Triangle's population is expected to grow by an additional 10 million by 2050.

LAND LINES: *Can you share some observations on China's plan-making in general and spatial planning for megaregions in particular?*
MING ZHANG: China has a planned economy initially adopted from the former Soviet Union. Plan-making is the responsibility of governments at the central and the local level. The National Development and Reform Commission (NDRC, formerly the State Planning Committee) under the State Council makes national economic development plans, known as Five-Year Plans. Specific functional units of the government develop implementation programs that are largely spatially oriented as they aim to specify the location and allocation of planned developments.

The practice of spatial planning has been influenced by the national urbanization policy in China, where urbanization is seen as both the outcome and the source of development. Spatial planning serves as a means to achieve policy goals. Over time, the national policies have been shifting their foci as the country undergoes dramatic political, economic, and social transformation, and since 2000 this policy has focused less on small-to-medium-sized cities and more on regions of large urban agglomeration.

The 10th Five-Year Economic Development Plan (2001–2005) stressed the need to intensify the "growth engine" role of the country's three top megaregions: the Yangtze River Delta (YRD), the Pearl River Delta (PRD), and the Beijing-Tianjin-Hebei (BTH) region. The 11th Five-Year Plan (2006–2010) continued this regional growth approach and was instrumental in facilitating the development of 10 to 15 large megaregions. At the megaregion seminar held in October 2008 at the PKU–Lincoln Institute Center we saw that Chinese planners have made many plans around the megaregion level. Most Chinese megaregion plans have reached a broad audience through published books, online postings, and panel discussions on TV forums; they have raised public awareness of challenging issues facing their cities and regions, and encouraged participation of various interest groups in shaping their common future.

LAND LINES: *What have you learned from China's megaregion development strategy that might inform U.S. initiatives like America 2050 and megaregions like the Texas Triangle?*
MING ZHANG: The megaregion effort in the United States has taken a bottom-up approach, in contrast to the top-down approach in China. One lesson from observing Chinese megaregion plans is the need to make large-scale plans as part of the campaign for national spatial development strategies, and America 2050 may help to facilitate such a process.

Another lesson is that the federal and state governments can and should play an active role in strategic planning and investments in transportation infrastructure. A high-speed rail (HSR) line started operating in July 2008 between Beijing and Tianjin in the BTH megaregion, cutting travel time from two hours by car to 30 minutes by rail. Quality of life has improved as citizens in both cities now can commute easily to jobs, housing, and services in both places.

U.S. cities and regions still rely on the infrastructure dating from the late nineteenth and twentieth centuries. In the Texas Triangle and many other megaregions, major airports and highways are reaching their capacities. How should the Texas Triangle prepare for an additional 10 million people while maintaining quality of life and economic competitiveness? HSR should be considered, but a bottom-up approach toward development of regional/national infrastructure may not work effectively. In the early 1990s, for example, a proposal for HSR in Texas by a local franchise failed largely due to strong opposition from Southwest Airlines.

LAND LINES: *Conversely, are there lessons for China?*
MING ZHANG: China can learn from the United States to address regional governance issues through coalition building and participatory planning. Currently there are five levels of governments in the political geography of China: central, province, prefecture, county, and township. Another layer at the megaregion level will not be helpful. The U.S. political geography at the local level is also fragmented, but experience has found innovative ways to facilitate coordination and conflict resolution among different interest groups and local communities.

Another lesson is to incorporate market forces for megaregion development. As the market continues to grow in China's economy, the U.S. experience and techniques for partnering with the private sector are valuable references. Examples include value capture for infrastructure financing, public-private partnerships for public works, and environmental credit trading.

LAND LINES: *Now please tell us more about your work with the Lincoln Institute on TOD*
MING ZHANG: In 2005–2006, the Institute's China Program supported my study of TOD experiences in three mainland cities (Beijing, Shanghai, and Guangzhou) as well as in Hong Kong and Taipei. In the following year, the project extended in two directions: additional case studies of Curitiba and São Paulo, Brazil; and a comparison of bus-based rapid transit and rail, with respect to their capital and operating costs, service capacity, and land use impacts. I presented the TOD study to the Institute-sponsored TOD workshop led by Professor Robert Cervero in Shanghai in 2006. In collaboration with scholars from the case study cities, the research has generated six publications (one of which is in Chinese), with others under review. This TOD research continues at the PKU–Lincoln Institute Center in collaboration with the China Academy of Transportation Science in Beijing. My focus is on the application of value capture techniques for TOD.

LAND LINES: *Do Chinese cities need TOD, given that density is already high, mixed land use is a common practice, and the share of transit use is much higher than in the United States?*
MING ZHANG: Yes. Two observations from our initial study suggest that TOD ought to be promoted in Chinese cities. First, urban expansion since 1978 has become increasingly auto-oriented, and the new built environment typically features super-blocks, multiple-lane roadways, and street design that is hostile to pedestrians and cyclists. A Chinese version of sprawl is emerging as scholars have warned. Second, Chinese cities have been investing in rapid transit to accommodate the rising mobility demand, but there has been little time for detailed consideration of integrating transit with surrounding functions. Many stations and their nearby land uses are simply adjacent, leaving much of the area dysfunctional for TOD.

While the U.S. principles of TOD are valid in China, the performance standards generally are not applicable. My research in Hong Kong, Taipei, and the Mainland Chinese cities led to an operational TOD model characterized as Five-Ds Squared or 5D^2: Differentiated Density, Dock-like District, Delicate Design, Diverse Destination, and Distributed Dividends. It emphasizes that TOD should be applied as a composite policy combining land use, transportation, and transit finance (see Zhang 2007).

REFERENCE

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