

UGEC Forecasting Urban Land-Use Change Workshop

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1. What are the key urban remote sensing/urban modeling and forecasting issues that you represent?

My background is in remote sensing, especially time series analysis of high temporal frequency data, and urban growth modeling using econometrics-based approaches. I am interested in characterizing, modeling, and forecasting urban land dynamics as well as the environmental impacts of urban land expansion. I have been investigating urbanization issues in China for over 15 years and also have urban projects in India, Vietnam, and Qatar. Recently, I have been interested in issues around re-conceptualizing sustainable land use in an urbanizing world and developing a theoretical framework for understanding global patterns of urbanization and the growth of urban clusters. I have worked with a number of stakeholders and actors who shape and are shaped by urban expansion, including national governments, mayors, urban planners, private investment companies, IT firms, urban design firms, and real estate developers.

2. What are the key challenges, missing opportunities, and exciting developments in your theme and region?

Asia's urban population is expected to increase somewhere between 1-2 billion over the next 40 years with most of this growth occurring in places that are currently considered towns and villages. A huge challenge is to develop urban growth models that can predict where and which of these smaller towns are likely to develop. Most of the urban growth models have been developed for high income country cities and/or places with a lot of ancillary data. We need more process-based models that take politics and policies into consideration.

A missing opportunity is to work with the real estate developers and urban design firms that are working closely with governments in Asia to develop the "next Silicon Valley" or Detroit. They hold a lot of data and have tremendous insight into the process driving urban expansion. However, there is a large schism between the academic urban modeling communities and the applied/design communities.

An exciting development is the rapid increase of new data sets collected by localities and international organizations such as the World Bank Global City Indicators Project. I also see the urban issue coming to the fore in many national and international research and development agendas, and this could increase both the funding and salience of this type of research.

3. Why are we not seeing more studies on smaller urban areas?

Funding, access, data, path dependency and interest. I have a graduate student who has been studying a 2nd tier Chinese city for the last 2 years. It's a provincial capital but not a city that is on the radar of the international community. He admits that it is challenging to conduct research there and prefers to be in Beijing, where he has been living for the last 2 years; he commutes to his research site. There are few western scholars working in this city, and the local authorities have not permitted access to data in the same way that large cities have. Although I have described one case in China, this is not uncommon in other countries. We had a project in Bangalore a few years ago and it was surprisingly difficult to get access to spatially explicit data to develop our urban growth models. Try getting data for Tiruchirappalli.

4. What platform/data/access limitations do you currently/frequently encounter?

I often run into data limitations for smaller urban settlements and finding comparable data across regions, even within the same country. Regarding platform, I find it particularly challenging to develop a methodology that can be tested across regions. Whenever we start a new project at a new site, it seems like we need to start from scratch because of data issues.

5. How do these limitations affect our ability to monitor, model and forecast urban areas?

We currently lack a conceptual framework that allows us to compare our results across case studies. Our focus on individual case studies also limits our ability to develop methods that are applicable across many different types of governmental and institutional regimes.

6. What do you see as missing in terms of case studies and methods?

Smaller cities, especially in Africa, and process-based models that take decision-making and private actors directly into account. How do we account for Microsoft moving into an area or the impact of SOM developing a "master planned community"? We also lack a new theoretical model of urban expansion that reflects the realities of urbanization in the 21st century.