Title: **What's so Spatial about Agent-Based Models?**

Abstract: According to a classic definition of "Agents", they are software entities that sense, respond to, and interact with their environment and with each other. In the case of Geospatial Agents, the "environment" is represented by Georeferenced data and hence spatially explicit. However, there are other specific characteristics of Geospatial Agents. This includes mobility (or lack thereof), spatial learning and adaptation, and influences of the spatial neighbourhood. For spatially located agents that are otherwise immobile (e.g., farmers in a watershed), spatial contagion and social networks play an important role in determining their decisions. For spatially-aware mobile agents (e.g., monkey movements through forest), the motivation to move is spatial and tied to either resources (grass/money) or social networks (neighbours). Further, decision-making on how to move can be reactive or purposeful using memory (i.e., previously known paths) as well as navigation (i.e., using heuristics or knowledge or combination of both). Finally, Geospatial Agents have to consider issues specific to spatial data management, which includes the Modifiable Areal Unit Problem (MAUP): "use of aggregated spatial data can influence outcome" and Tobler's First Law of Geography: "everything is related to everything else, but near things are more related than distant things". In short, Geospatial Agents do indeed reinforce the idea that "Spatial is Special".

Speaker Biography: Dr. Raja Sengupta is an Associate Professor in the Department of Geography and the School of Environment, and an Associate Member of the School of Computer Science, at McGill University. His research interests lie in the Theory and Practice of Geographic Information Science (Spatial Decision Support Systems and Agent-Based Modelling), and its application to Water Resources Management, Conservation Payments and Payment for Environmental Services (PES), and Spatial Epidemiology. Dr.Sengupta has a MSc in Applied Geology from the Indian Institute of Technology Bombay, and a PhD in Geography from Southern Illinois University.