PH.D. GENERAL EXAM PROPOSAL

Massachusetts Institute of Technology, Department of Urban Studies and Planning

Name: Robert Goodspeed
Email: rgoodspe@mit.edu
Phone: 202-321-2743

Fields of Examination

Field 1: Urban Information Systems
Field 2: Democratic Land Use Planning

Written Examination

Proposal Dates: Friday, May 20 through Tuesday, May 24, 2011.
Number of Questions (asked/answered): Field 1 – 3/2; Field 2 – 3/2

Oral Examination

Proposed date: Wednesday, June 1.

Examination Committee

Chair: Joseph Ferreira, Jr., Professor of Urban Planning and Operations Research

Member: Michael Flaxman, Assistant Professor of Urban Technologies and Information Systems

Member: Brent Ryan, Assistant Professor of Urban Design and Public Policy

Submission Date: _________________________________
FIRST FIELD: URBAN INFORMATION SYSTEMS IN PLANNING

1. Information Technology and Knowledge Management and Representation

Information Technology and Management captures the computing branch within UIS. The area of information technology and knowledge management and representation draws on computer science and the management of information systems (MIS) to deal with issues of structuring, storing and manipulating the information in ways that is manageable and suitable for planning. In particular this core area analyzes how Geographic Information Systems (GIS) and Data Base Management Systems (DBMS) technology can be used to support planning strategies.

Subsections of Information technology and knowledge management are:

- (1) Geographic Information Systems (GIS) and Geospatial Services
- (2) Database Design and Management, and Programming
- (3) Information Technology and Planning Support Systems

(1) Geographic Information Systems (GIS) and Geospatial Services

From stand-alone GIS programs (mainframe-based GIS and desktop GIS), to Local Area Network based GIS, GIS has become one of the most important tools in a planner’s tool kit. With the explosive development of the internet, organizations are choosing to extend their desktop GIS implementations with server-based GIS solutions that offer content and capabilities via Web services. Web services provide the building blocks upon which broader IT strategies are based, such as the implementation of a service-oriented architecture (SOA). SOA is a style of information systems architecture that enables the creation of applications that are built by combining loosely coupled and interoperable services. With web service-based SOA, organizations can integrate GIS into their existing workflows and solve today’s challenges of providing open access to common geospatial data, services, and applications from within their organizations and beyond.

Books


Miller, Harvey J., and Jiawei Han. 2001. Geographic Data Mining and Knowledge Discovery. New York: Taylor & Francis.


Articles


(2) Database Design and Management, and Programming

From flatfile systems such as excel to dBase in the 1980s, to the more recent object relational data model system (e.g. Oracle or SQL server), to spatially referenced databases, database technology has helped planners to accumulate information and knowledge. In addition, database systems support exploration, analysis, and on-demand querying of complex datasets to answer research and operational questions. This section covers database design and management issues, including database models, distributed computing, data structure, and multi-user and multidimensional issues as well as its application in planning, structured/unstructured data and the related search issues, and finally covers object-oriented programming. New web-based
technologies for information manipulation and sharing are increasingly developed on server-side database technologies such as SQL, making an understanding of underlying database technology even more important.

Books


Articles


(3) *Information Technology and Planning Support Systems and Knowledge Management*

This section covers artificial intelligence, the application of information technology in planning, and the development Planning Support Systems. This section relates to underlying urban models (economic, agent-based, ecological, etc). However in general these articles focus on the institutional and functional design and use of such systems. Articles focusing on the underlying analytical models are contained in the following section.

The concept of “planning support systems” developed in the late 1980s as desktop computing grew in sophistication and GIS became integrated into professional practice. Early scholars emphasized the ability of spreadsheets to create simple models for decision support and analysis (Brail 1987). Others observed systems needed for planning did not align with commercially available tools (Leclercq 1990; Webster 1993) and PSS developed along parallel paths. Some emphasized the potential of GIS systems for visual representation, while others
sought to develop customized systems integrating GIS and domain-specific analytical models to answer policy questions, which links to the literature on large-scale urban models. Finally, practitioners developed a suite of static models suitable for scenario planning, such as INDEX, CommunityViz, and What If?, described in Brail (2008). Although static and computationally limited, these tools are also highly understandable to professionals and the public and their development has been uneven as a tension exists between the scope of planning and the specific functionality included within them.

Books


Articles


Janssen, R., and T. J. Stewart. 2009. Making progress towards effective spatial decision support:


### 2. Analytical Methods and Urban Models

Analytical methods and urban models draw upon the methodologies of Operations Research (probability models), statistics, and econometrics, while applying social and economic theory. In general, this section entails two major contents. The first covers quantitative methods, such as probability models, discrete choice analysis, econometrics, and statistical inference, and their application in urban studies and planning. The second focuses on urban economics and spatial models.

Readings cover economic theories linked with models that explore economic activities in the spatial context of metropolitan areas. Particular attention is paid on the interaction between land use and transportation, urban economics, and real estate markets. Two types of operational models are developed to address the real world planning practice: (a) mathematic programming
models, which are used to find out the optimal location of facilities, service delivery and even the optimal spatial pattern of the metropolitan area; and (b) large-scale urban models, which are developed combining economic theory, statistics and spatial analysis techniques.

(1) **Analytical Methods: Statistics, Probability, and Spatial Measurement and Analysis**

This section includes foundational texts in applied probability, urban operations research, and statistical inference. Also included are specialized analysis techniques for the measurement of urban form, spatial analysis techniques, and the construction of indicators.

Books


Articles


*(2) Economic Theory*

This section contains theoretical work related to the urban land and labor markets which define urban systems. These include Alonso’s classic monocentric model and adaptations for multiple centers, decentralization, and mixed land uses.

**Books**


Large-scale urban models attempt to simulate real-world urban dynamics in various ways. Models developed using spatial theories simulate growth through cellular automata, where land use changes are simulated as spatial phenomenon. Similarly raster modeling approaches such as ATTCON can capture land market dynamics by taking the demand and types of housing as fixed inputs, and allocated uses through an iterative process across multiple time steps. Integrated land use and transportation models seek to capture the interaction between changes in transportation infrastructure and land use patterns. The most sophisticated research model, UrbanSim, simulates land markets and travel behavior at the individual level. Large-scale models have been critiqued, most notably by Douglass Lee (1973, 1994), for being expensive, data hungry “black boxes” lacking transparency and therefore policy utility. Perhaps more seriously, the most complicated models have an uncertain relationship with policy since their outputs are associated with a good deal of uncertainty. Advocates argue this form of modeling is needed to capture system dynamics seen in reality (Harris and Batty 1993; Waddel 2001). In addition, new
sources of spatially disaggregate data and increasingly rich urban economic theories mean they may persist as tools for research and policy development.

Two of the most active supporters of modeling, Harris and Batty, wrote in 1993 that any model has four interrelated theories: theories of computation, social and functional theories of systems being planned, and the theory of planning, and theory of spatial representation or description. Although they remain committed to the need for modeling for optimization, the normative description of such a system is formidable indeed: self-teaching, accessible inputs and outputs, supporting a range of uses, among others. For this reason it seems likely both large-scale models and sketch planning tools described above will continue to proceed in parallel.

Books


Articles


3. Institutions and Organizational Behavior

This part examines the institutional environment of planning, with the aim of developing a broad understanding of the organizations and planning processes within which information technologies are brought to bear. The literature focuses on organizational and institutional implications of information technology. It draws from the readings on planning theory, sociology, anthropology, and political science. This section’s readings cover topics such as: what impacts will information technology have on cities, organizations, institutions, and social processes within which planning takes place; how can planners integrate information technology into these organizations, institutions and social processes.

In an organizational context it draws on institutionalism (Fountain 2001) and technology adoption theories (Innes and Simpson 1993). In some cases, new online practices spark new
theories, such as Brabham’s proposal for “crowdsourcing” as a new participation paradigm (2009). Finally, other scholars have worked at the interface of technical analysis and social meaning, drawing on Habermas theory of communicative action to identify the process whereby indicators are constructed.

In the professional domain, a discourse of technology inevitably improving efficiency and decision-making is prevalent. Ventura (2002) argues this information based improved a community’s ability to plan for change, and implicit in Greene (2000) is how GIS enables policymakers to craft policies with more nuance and effectiveness, in the case of targeting parcels to maximize protection of Boston’s drinking water. Mandelbaum provides a theoretical view in the middle range. The creation of professional tools are intimately linked with the definition of problems, therefore they are made embedded in specific contexts and may be “broken” if they no longer command agreement as to their relevance (1996). Dealing with information technology more broadly, other theorists have proposed more deeply seated and more subtle changes. Castells argues IT enables a transformation of social power where the ability to draw attention is required (1989, 2007), and Mitchell stressed the impact on daily life (1995). At the organizational level, Zuboff proposes a fundamental transformation whereby information technology can result in an “informed” organization with transformed roles for managers and workers alike (1998).

(1) Institutions and Social Processes

Books


Articles


(2) Data Policy, Infrastructure and Standards

IT has enabled greater data sharing among various institutions. Formal government institutions which produce government datasets, but also increasingly private actors are producing data freely available through APIs or other means online. This section concerns the policies governing which data is shared, in what formats, and what supplementary practices such as metadata are required to maximize usefulness.

The Open GIS Consortium has led efforts to develop open interfaces at the software level to enable system interoperability at the parameter, command, and data type level (McKee 2000). This work complements efforts to standardize data formats and metadata. The motivations for these systems are manifold, and can relate to supporting tools for planning and policymaking, or managerial information needs. Older paradigms treat this data as a neutral infrastructure, supporting economic development, research, and policy development (National Research
Council 1993; MassGIS Council 2007). In this vein, programs of data infrastructure development are proceeding, including standardization of data collection, metadata, formats, and governance. In the EU the INSPIRE process, the result of EU legislation passed in 2007, hopes to create a spatial data infrastructure across the member states by 2019.

Other purposes for government data have been proposed. Fung, Graham, and Weil have proposed a model of targeted transparency (Fung, et al 2007) where information itself is used as a policy tool by governments, Robinson and Noveck argue for releasing data to realize broad public benefits including economic effects, and Davies (2010) finds empirical evidence for a range of uses: for facts, information, interfaces, derivative data, and services.

Books and Reports


Massachusetts Geographic Information Council Strategic Plan Steering Committee. 2007. A Strategic Plan for Massachusetts' Spatial Data Infrastructure. Boston, MA.


Articles


(3) **PPGIS, Visualization, and the Epistemology of GIS Practice**

The field of PPGIS emerged in the 1990s. As GIS technology developed, its use for mapping and analysis required operator skills and access to data. Practitioners observed that digital datasets often came from government or corporate sources, therefore mapping technologies that relied on these sources reflected the priorities and values of the data creators, not necessarily the data users. PPGIS sought to modify this situation in two ways, first advocates sought techniques and practices that put GIS technology in the hands of community groups and grassroots organizations. This approach often left unresolved exactly how the user community was defined, content for practical definitions such as readily organized neighborhood groups, school children, or participants in a planning process. Second, linked PPGIS to alternative epistemologies oriented towards collecting local knowledge. However this approach could naively apply to a range of information a technology with static, discrete underlying data models. For example, Dennis (2006) sought to map youth preferences or favorite places, however placing this type of rich, qualitative data in a GIS lacked the richness of hand-drawn maps. From this perspective, if the map’s power is in its wide communicative power, alternate mediums could support the goals of PPGIS practitioners, such as qualitative textual analysis, video, animation, or even text.

Also motivated by a desire to expand participation in the policy process, practitioners using visualization have developed methodologies that take advantage of technology to illustrate proposals under consideration. Sheppard (1989) described the ethical dimension of such work as visualization creators seek to communicate ideas without misleading the viewers of their products. Through an experimental design in Melbourne, Bishop (2005) developed a theory of the use of visualization for general *exploration* and specific *comparisons* of proposals. Like PPGIS, these developments have proceeded largely separate from specific decision-making contexts except for exceptional cases where resources for alternative methods are available.

The PPGIS and visualization movements have been impacted by two developments. First, the proliferation of technology has transformed early initiatives. The availability of location-aware devices such as low-cost GPS and smartphones have resulted in a wide range of specific applications. While not replicating all GIS functionality, these have made it easier for communities to consult existing formal datasets, contribute their own volunteered geographic data (VGI). The widespread availability of free or low-cost visualization software has dramatically expanded the creation of visual simulations. As noted by Ferriera (2008), the trend towards web mapping has accelerated this as mashups allow users to contribute data. Secondly, enhancing the ability to capture and communicate alternative geographic data or community values has limited meaning if it won’t make it into the plan, or the plan is never implemented.
Scholars focusing on the development of processes which recognize and incorporate local knowledge and preferences argue capturing it within GIS is less important than an ongoing dialog (Hanna 2000; Innes 1998) with equal partners. Pickels (1995) has called for a much more critical evaluation of GIS technology in light of its origins as an instrument for powerful institutions and underlying assumptions about the form of knowledge, calling for a more fundamental re-evaluation than considered by most PPGIS projects.

**Books**


**Articles**


# Preparation for Urban Information Systems

## Coursework

<table>
<thead>
<tr>
<th>Institution</th>
<th>Course Code</th>
<th>Term</th>
<th>Title</th>
<th>Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIT</td>
<td>11.523</td>
<td>Spring 2011</td>
<td>Fundamentals of Spatial Database Management</td>
<td>Ferreira</td>
</tr>
<tr>
<td>ESD.86</td>
<td>11.522</td>
<td>Fall 2010</td>
<td>Research Seminar in Urban Information Systems</td>
<td>Ferreira</td>
</tr>
<tr>
<td>MIT</td>
<td>STS.48 7</td>
<td>Fall 2010</td>
<td>Ethics and Law on the Electronic Frontier</td>
<td>Weitzner, Abelson, Fischer</td>
</tr>
<tr>
<td>MIT</td>
<td>11.423</td>
<td>Spring 2010</td>
<td>Information, Asset Building, and the Immigrant City</td>
<td>Hoyt</td>
</tr>
<tr>
<td>MIT</td>
<td>11.951</td>
<td>Fall 2009</td>
<td>Simulating Sustainable Futures</td>
<td>Flaxman</td>
</tr>
<tr>
<td>UMD</td>
<td>URSP6 60</td>
<td>Spring 2008</td>
<td>Function and Structure of Metropolitan Areas</td>
<td>Shen</td>
</tr>
<tr>
<td>UMD</td>
<td>URSP6 06</td>
<td>Fall 2007</td>
<td>Microeconomics of Planning and Policy</td>
<td>Carruthers</td>
</tr>
<tr>
<td>UMD</td>
<td>URSP6 12</td>
<td>Fall 2006</td>
<td>GIS for Urban Planning</td>
<td>Shen</td>
</tr>
</tbody>
</table>

## Methods Courses

<table>
<thead>
<tr>
<th>Institution</th>
<th>Course Code</th>
<th>Term</th>
<th>Title</th>
<th>Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFAS</td>
<td>SOC2 03a</td>
<td>Fall 2010</td>
<td>Advanced Quantitative Research Methods</td>
<td>Winship</td>
</tr>
<tr>
<td>MIT</td>
<td>11.956</td>
<td>IAP 2010</td>
<td>Action Research: Methods for Working at Planning’s Sweet Spot</td>
<td>Hoyt, Ferreira, Sengupta</td>
</tr>
<tr>
<td>MIT</td>
<td>11.800</td>
<td>Spring 2010</td>
<td>Doctoral Research Seminar</td>
<td>Levy, Polenske</td>
</tr>
<tr>
<td>MIT</td>
<td>17.878</td>
<td>Fall 2009</td>
<td>Qualitative Research Methods</td>
<td>Locke, Steinfeld, Carmin</td>
</tr>
<tr>
<td>MIT</td>
<td>11.233</td>
<td>Fall 2009</td>
<td>Research Design for Policy and Planning</td>
<td>Carmin</td>
</tr>
<tr>
<td>UMD</td>
<td>URSP 601</td>
<td>Fall 2006</td>
<td>Quantitative Research Methods</td>
<td>Shen</td>
</tr>
<tr>
<td>UMD</td>
<td>URSP 600</td>
<td>Spring 2007</td>
<td>Research Design and Application</td>
<td>Chen</td>
</tr>
</tbody>
</table>

## Professional Experience

<table>
<thead>
<tr>
<th>Role</th>
<th>Institution</th>
<th>Time</th>
<th>Location</th>
<th>Supervisor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rappaport Public Policy Fellow Research Analyst Founder</td>
<td>Summer 2010</td>
<td>8/08-8/09</td>
<td>7/06-8/08</td>
<td>C. Osgood, N. Jacob, Holly St. Clair</td>
</tr>
</tbody>
</table>
SECOND FIELD: DEMOCRATIC LAND USE PLANNING

The practice of local land use planning, or exerting social control over land through regulation and indicative plans, lies at the heart of American urban planning practice. Although underlying market dynamics (described by economic theory in the First Field) allocate resources and determine market demand, this section begins from the observation that extensive land use planning activities and detailed regulations exist in most American urban areas. Those facing the most development pressures are often the most tightly regulated, resulting in calls from economists to ease regulations. For the purposes of the field, land use regulation and planning are intertwined enterprises, related to but not exclusively controlled by state institutions.

This section proposes analyzing these activities from three points of view. First, the practice of planning and establishing regulations is a future-oriented activity, drawing upon theories of rational planning and private sector scenario planning. Second, a variety of theories can shed light on the motivations of actors: democracy, social choice, communicative action, and institutional collective action. Third, normative theories of community form provide concrete ideals which can motivate actions and give specific urban form to abstract values and interests.

1. Plans as Future Scenarios

This section contains two approaches to planning as a future-oriented activity: (1) traditional approaches to public planning as coordinating private action to achieve a public good, and (2) the development of multiple scenarios as a decision-making tool, abstracted away from normative goals or a theory of government.

The first view is a contemporary version of the synoptic or rational planning model where governments created plans as a future scenario to guide public and private actions (Kent 1964). From this perspective, they manage externalities, provide public goods, and resolve prisoner’s dilemmas. Sketched in Klosterman (1985), these arguments are developed by Knaap, et al (1998), expanded in Hopkins (2001) and tested empirically by Knaap (2001). In its most sophisticated modern version, Hopkins (2001) argues planning is an activity required whenever multiple economic actors experience interdependence, indivisibility, and irreversibility.

In addition, drawing on a literature from private sector planning, advocates for scenario planning propose developing internally-consistent alternative scenarios. Contemporary planning has drawn on theories of scenario planning developed by private corporations as a means to create a structured process for designing plans. However, to the extent a plan allocates resources and impacts rights whether through state or private action, its creation is a social and political process which this literature is silent about. The origins of scenario planning lie in management science and corporate planning activities. Schoemaker describes its use by an oil company (1995), and Huss for an equipment manufacturer (1988). Adapting scenario planning methods to the public sector requires developing a method for defining which stakeholders should participate and on what terms. Khakee, describes a scenario analysis project in Västerås, Sweden. (1991) Contrary to Schoemaker’s suggestion, the planning team is drawn entirely from various government departments and does not include external participants. Schoemaker advocates carefully identifying individual variables (uncertainties and trends) and evaluating their interrelationships. Scenario creation in urban development and planning must de-compose the relationships among different factors since a detailed analysis can find unexpected relationships or challenge conventional wisdom.
Books


Articles


2. Theoretical Perspectives on Regional Land Use Planning

Three bodies of theories provide views into the process of democratic land use planning at three scales: individual behavior, collectives in dialog, and that of self-interested institutions. Theories of social choice and participatory democracy provide perspectives on individual behavior. These critically evaluate the motivations and causal mechanisms explaining civic voluntarism, and social choice provides a framework to study the function and limits of methods for aggregating interests. However, the world of static and known interests assumed by social choice theory provides a limited view to real-world processes where issues loosely related or disconnected from personal utility are evaluated, such as aesthetic decisions, or where positions and interests are discovered and defined through social processes.

Sager provides a roadmap whereby social choice defines limits of communicative action theory, but also proposes a relationship between these two worlds. Communicative action is contained in section two, which includes works by Habermas, and planning scholars such as Innes, Booher, Forester, and Healey who have applied this theory to analyze professional behavior and propose normative models for the planning process.

Lastly, metropolitan land use policy is not made either exclusively through direct democracy at the local level, or by stakeholder groups engaging in ideal Habermasian dialog. Although municipal zoning plays a key role, it is constrained by state and federal wetlands and affordable housing regulations, for example. Transportation policy is determined through a complex set of state actors, independent agencies, and Metropolitan Planning Organizations (MPO). Still other initiatives, launched as extra-governmental initiatives, have resulted in significant changes to public policy such as major expansions of urban transit or modification of state laws. A perspective from institutional collective action theory provides a useful framework to understand both self-interested behavior by metropolitan institutions as well as possibilities for alternative approaches to regional problems.

1. Individuals: Social Choice and Participatory Democracy

Planning processes involve large numbers of people in an individual capacity. Often, as voters they are called on to elect candidates or address initiatives about the use of land. More common is the ubiquitous public meeting, held for a myriad of purposes, which can include voting, discussion, education and persuasion. Three bodies of theory address this scale of activity: social choice theory, normative democratic theory, and theories from political sociology explaining civic participation.

Social choice theory applies rational choice assumptions and rigorous mathematical models to the political realm, in the context of voting or other systems for aggregating individual preferences. Its main contribution has been a set of impossibility theorems. For example, that all systems of aggregating views have fundamental flaws (Arrow’s Impossibility theorems), no decision procedure is strategy-proof (Gibbard-Satterthwaite theorem). Although the highly abstract models have limited application to real-world systems, they can be useful in the design and analysis of planning procedures which use discrete ranking or weighting (UIC City Design Center 2008), and also propose frameworks to consider behavior such as lying or manipulation
missing from more normative models. For these reasons Sager has sought to integrate social choice and communicative perspectives (1997, 1999, 2001, 2002).

Second, following from “classical” democratic theory of Aristotle and JS Mill, Mansbridge and Pateman have theorized about the desirability and types of direct democracies. Mansbridge argued there were two types: unitary and adversary. She maintains deliberation is possible even if there exists conflicts of interests (Mansbridge et al 2010). Pateman argued for the ‘developmental thesis’ of participation from Mill and other theorists. A widely cited model in planning, Arnstein (1969) proposed a latter of participation oriented towards delegating power which can be conceptualized as part of the classical theory of the desirability of participatory (and therefore local) democracy. Fung (2006) proposed a more nuanced typology of participatory practices, proposing they can vary on three dimensions: who participates, the communication and decision mode, and finally the connection with action and public policy. Like Arnstein, he is motivated by values of classical democracy, arguing participation can help address three democratic objectives: legitimacy, justice, effectiveness through various means.

Third, political scientists have studied political participation. The socioeconomic effects literature has linked measures of SES status, such as family background, educational attainment, and earnings to measures of participation, such as voting. More recent works have developed the theory further, describing the role of intermediate variables and processes such a interest, information, recruitment, efficacy, and partisan intensity that provide the desire, knowledge, and self-assurance for a wider range of political behavior (Verba, Schlozman, and Brady 1995). Other studies have examined the role of education in detail, arguing for three mediating variables: verbal proficiency, organizational membership, and social network centrality (Nie, Junn, and Stehlik-Barry 1996).

Books


Articles


(2) Collectives: Communicative Rationality

The theory of communicative rationality concerns the construction of consensus and shared meaning among groups of people by recognizing an alternative form of rationality from instrumental rationality. Habermas argues this intersubjective rationality can arise between individuals or organizations in certain situations. In his theory, this form of rationality is distinct from instrumental rationality, and can counter powerful interests. In the communicative rationality tradition, the theory of Habermas is adapted to a policy context. The adherents vary according to their backgrounds, for example Healey (1997) integrates it with Anthony Giddens’ structuration theory to describe the state-centered UK planning model. Innes has evolved from an exploration of social and economic indicators (1975) to deliberative processes (2010). Forester is a student of the micro-politics of planning at the finegrain of daily activity, applying communicative action as a descriptive theory for ethnographic research. Susskind’s consensus building approach can be thought of as a pragmatic intermediate level of theory linking the more abstract theory with practice.

Books


**Articles**


**(3) Institutions: A Collective Action Approach**

Regional development patterns are powerfully shaped not only by democratic processes but self-interested institutions. Municipalities seek to maximize revenues and minimize negative externalities within their borders. In response to regional transportation needs, urban disinvestment, and service delivery, metropolitan regions contain dozens of special-purpose districts (Frug, et al 2010). The powers possessed by municipalities are continually modified by state legislatures, who sometimes opt for state-mandated growth policies. For example, in Massachusetts local zoning can be overridden for certain affordable housing projects, restricted by environmental regulations, and shaped by incentives for certain types of zoning (40R). Richard Feiock has proposed adopting a collective action framework to better understand these activities (2010, 2004). In it, it proposes a variety of tools of regional governance built on various forms of decision making and the level of autonomy afforded the institutional participants. This theory provides a framework to analyze the wide range of institutional actors concerned with metropolitan development, but also recognize what tools can be used to achieve policy goals.

**Books**


Articles


3. Normative and Regional Contexts

Planning processes play out in the context of both general and specific normative models for urban and regional form. The general models include new urbanism, smart growth, landscape urbanism and other design ideals abstracted away from specific spatial contexts as models which can be drawn from to propose specific action. Specific models include the historical and regional context: institutional arrangements, existing plans, and values embodied in the built environment.

(1) Normative Theories of Urban Form: Social Perspectives

Land use planning is the arena where ideals of the good city and the good neighborhood are debated, codified in regulations and plans, and ultimately shape urban form. Therefore the actions of individuals, developers, and institutions cannot be understood in isolation from a theory of good urban form. In the context of individual or institutional interests, normative theories constitute a stock of design ideals to call upon as models for how abstract values can be implemented in concrete designs and plans. Although encompassing theories at a range of scales, my particular interest is in urban design theories at the neighborhood and community scale.

Books


Duany, Andres, Elizabeth Plater-Zyberk, and Jeff Speck. 2000. *Suburban nation: the rise of


Articles


(2) Normative Theories of Urban Form: Environmental Perspectives

Social perspectives on urban form begin from an assumption of human intervention in the natural landscape. The environmental perspective embraces the concept of wilderness, and adopts the perspective guided by a vision of natural systems untouched by human contact, and then proposing design approaches for human settlement which seek this goal. McHarg (1992, 1998) developed early analysis techniques to shape urban form in response to natural systems on the earth’s surface. Spirn (1984) identified natural processes at work in the city, and proposed design approaches which synthesized human needs and natural systems.

Recent developments have sought novel combinations from socially and environmentally motivated design approaches. For example, greenways and large urban parks are appreciated as both wildlife habitat and as amenities from Smart Growth. However, the diverse movement of landscape urbanism (2006) reveals adherents with conflicting positions on these earlier design approaches, animating ongoing debate.
Books


Articles


(3) Land Use in Metropolitan Boston

My planned dissertation research will take place in metropolitan Boston. This section contains the current regional plan, a master’s thesis examining its creation, a description of the region’s unique land use regulation regime, and a thesis examining a land use planning process.

Books and Reports


## Preparation for Democratic Land Use Planning

### Coursework

<table>
<thead>
<tr>
<th>Institution</th>
<th>Course Code</th>
<th>Term</th>
<th>Course Title</th>
<th>Instructor(s)</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIT</td>
<td>11.301J</td>
<td>Spring 2011</td>
<td>Urban Design Policy &amp; Action</td>
<td>Ryan</td>
<td>-</td>
</tr>
<tr>
<td>MIT</td>
<td>11.949</td>
<td>Spring 2010</td>
<td>Engaging Community</td>
<td>Spirn, McDowell</td>
<td>A</td>
</tr>
<tr>
<td>HKS</td>
<td>D216</td>
<td>Spring 2010</td>
<td>Democratic Theory</td>
<td>Mansbridge</td>
<td>A-</td>
</tr>
<tr>
<td>HLS</td>
<td>4350</td>
<td>Spring 2010</td>
<td>Local Government Law</td>
<td>Frug</td>
<td>P</td>
</tr>
<tr>
<td>UMD</td>
<td>HISP640</td>
<td>Spring 2007</td>
<td>Historic Preservation Law</td>
<td>Mayes</td>
<td>A</td>
</tr>
<tr>
<td>UMD</td>
<td>URSP605</td>
<td>Fall 2006</td>
<td>Planning Process</td>
<td>Chen</td>
<td>A-</td>
</tr>
<tr>
<td>UMD</td>
<td>URSP603</td>
<td>Spring 2007</td>
<td>Land Use Planning</td>
<td>Craze</td>
<td>B</td>
</tr>
</tbody>
</table>

### Professional Experience

<table>
<thead>
<tr>
<th>Role</th>
<th>Term</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Assistant</td>
<td>Fall 2010</td>
<td>Gateway: Planning Action</td>
</tr>
<tr>
<td>Research Associate</td>
<td>Summer 2007</td>
<td>Urban Land Institute</td>
</tr>
<tr>
<td></td>
<td>+ 2008</td>
<td>Schmitz, Hart</td>
</tr>
</tbody>
</table>

PROPOSED EXAM

I. Format

The general exam will have a written and oral component. The written portion will be five days, from Friday, 5/20/11 to Tuesday, 5/24/11. The questions will be emailed by 10:00 a.m. the first morning and the answers will be emailed to the committee at 5:00 p.m. on the due date.

The written exam will consist of four questions. The questions will be structured as follows: three questions will be proposed and two answered from each field. Each question has an 8 page limit (excluding references). Responses should be double spaced, with one-inch margins and 12 point font.

The oral examination will follow in a session on Tuesday, May 31st. The questions and discussion for this portion will be based on responses to the written examination.

II. Sample Questions

First Field

1. Urban planning often requires coordinating among multiple independent agencies. Describe the use of web services and standards to enable communication and coordination of geospatial data. What technologies and standards can enable sharing of various types of information, and what are the policies and institutional factors are emerging? What tradeoffs are involved in developing appropriate strategies for typical municipal and metropolitan regions.

2. Drawing on models from the private sector, several writers have proposed the creation of “decision support systems” for urban planning. Critically evaluate this literature, and contemporary models which are used in a decision support capacity. What are the organizational and theoretical assumptions of these proposals? Briefly describe several public sector contexts where such systems are used, and these contexts’ institutional and technical factors.

3. In the 1990s, scholars proposed alternate approaches to using GIS technology such as Bottom up GIS (BUGIS) and Public Participation GIS (PPGIS). Explain the critique of conventional GIS use advanced by the advocates of these approaches. Analyze the relevance of these models in light of mapping mashups, volunteered geographic information, and other internet technologies which are expanding access and use of GIS technology.

Second Field

1. Creating urban plans remains a defining activity for the field of urban planning. Describe alternative views about how we should understand these documents. In particular, analyze how they are viewed from three theoretical perspectives: economics, scenario planning, and as expressions of ideas and values.
2. In the past two decades, two movements aspiring to guiding metropolitan urban form have dominated professional practice: Smart Growth and New Urbanism. How did the history of American urban development gave rise to these normative and political movements? Analyze their normative aspirations in light of environmental and aesthetic critiques by ecological or landscape urbanists, who call for new ideals of urban form.

3. Theorists have drawn upon Habermas’ theory of Communicative Action to study urban planning. How has this theory been used to analyze the planning process, construct practical models to achieve consensus, and construct data indicators? What do alternative frameworks, such as economics and social choice theory, say about the usefulness and role of communicative action in planning?