

Titles, Abstracts and Authors of Presentations at an International and Interdisciplinary Conference
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Engineering Earth: The Impacts of Megaengineering Projects

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Co-Organizers: Stanley D. Brunn and Andrew Wood
Department of Geography, University of Kentucky
brunn@uky.edu Andrew.wood@uky.edu

1. Derek Alderman, Associate Professor, Department of Geography, Brewster 227-A, East Carolina University, Greenville, NC 27858 and **Robert Brown**, Department of Geography and Planning, Appalachian State University, Boone, NC 28608
Emails: aldermand@ecu.edu and brownrn@appstate.edu Phones: Alderman 252-328-4013 and Brown 828-262-3000 Fax: Alderman 252-328-6054 and Brown 828-262-3067

Major Research Interests: Both focus on the cultural and historical geography of the American South, particularly the African American experience. Brown is especially interested in the geography of the New Deal; Alderman's interests revolve around the geography of racism and social injustice.

When a New Deal Is Actually an Old Deal: The Role of TVA in Engineering a Jim Crow Southern Landscape

The TVA has been heralded as one of the most defining moments in the 20th century American South. Created in 1933 as part of FDR's New Deal, the TVA brought massive changes to the southern landscape. Although the TVA is mainly identified now with electricity production and stream regulation, it was originally set up as a totalizing regional economic development project with a strong emphasis on social reconstruction. New Deal planners saw the Tennessee Valley and much of the South as lagging behind the social development experienced in what they viewed as "civilized" America. Yet, given the progressive, reconstructive focus of TVA, it is noteworthy that this development project failed to address race relations within the region. In many instances, the project actually engineered and legitimized a Jim Crow style of racial segregation and discrimination, drawing formal complaints from the NAACP. This was particularly evident in the planned community of Norris Tennessee, which did not allow blacks to live in the town and which eventually evolved into a white suburb for Knoxville. Our papers seeks to discuss the broad racialized nature of the TAV and its

impact on the South, why this bold experiment in social planning led to the perpetuation and creation of racial inequalities, and the specific exclusionary historical geography of Norris as a microcosm for understanding the larger racial politics of earth engineering.

2. Shonin Anacker, Geography, U.S. Census, Suitland, MD Home address: 212 17th St SE #2, Washington, DC 20003 {Phone (work): 301-763-9052 Email (work): shonin.anacker@census.gov and personal shonin.anacker@gmail.com

Research interests: political, Russia, and Central Asia

Hiding the Public in Plain Sight: State Construction and the Astana Project

The author examines the changing characteristics of the ‘public’ building, focusing on large-scale state-directed construction, in particular the recent capital-building project in Kazakhstan. Analyzing the financing schemes, contracting practices, design choices, and public relations campaigns evident in the project, the paper asks how the role of the public building in the national landscape has changed (and not changed) in the current era of trans-national flows and complex state spatial strategies. Comparing the current capital-building project to historical precedents, including the well-known modernist archetype of Brasilia, sheds light on not only the things that have changed, but also on what remains distinctive about these kinds of massive public projects. Examining both the local contexts within which particular financing and design decisions were made and the local meanings which have been ascribed to prominent public structures once they have been built, the author finds that these projects are still built according to a distinct public logic and are still unique, meaning-laden features of the national landscape. Many analyses have claimed that the ‘blurring’ of the lines between public and private projects have diluted the meaning of and perhaps even caused the death of ‘public architecture’, but evidence from this recent project suggests otherwise.

3. Daniel J. Brass, Giuseppe Labianca, and Ajay Mehra, Professors, Gatton College of Business and Economics and LINKS, International Center for Research on Social Networks in Business, University of Kentucky, Lexington, KY 40506.

Email addresses: dbrass@wmail.uky.edu; joe.labianca@uky.edu; ajaymehra1@gmail.com

Research Interests:

Brass: the antecedents and consequences of social networks in organizations. Current projects include an analysis of group structure and the implementation of system-wide computer system, individual networks and creativity in Chinese organizations, and immigrant entrepreneurs’ networks and business success.

Libianca: Social networks in the workplace as well as the role of cognition in organizational change, using both quantitative and qualitative methods. Recent project in the first stream focus on the causes and consequences of disliking people in your workplace social network, as well as understanding how group members’ social relationships affect their group’s performance. Recent research in the second stream

focuses on understanding why top managers choose to monitor or emulate certain organizations over others in their environment when planning strategic change. Mehra: The effects of demography and personality on social networks, leadership, and performance in organizations. Current projects include a network simulation that focuses on the system-level performance consequences of altruistic behavior, and a longitudinal study of co-authorship and citation networks in organizational studies.

A Network Approach to Mega-Engineering Projects

The use of network theory and methods to explain and predict outcomes related to complex systems is on the rise across a range of sciences, from physics and biology to sociology and psychology. Indeed, the broad applicability of ideas across seemingly disparate systems is one of the most distinctive and promising features of the network approach. Network theory represents systems in terms of nodes (which can be molecules, individual persons, companies, nation states, etc.) and the set of ties or relations that bind the nodes into a complex whole. Using graph-theoretic tools, network research can then be used to represent and analyze the topography of the resulting network and to examine the consequences of this topology both for individual nodes and for the system as a whole. The purpose of our talk is two-fold. First, we seek to provide a critical introduction to network research and methods. Second, we wish to sensitize researchers to the promise of a network perspective for understanding the structure and consequences of mega-engineering projects.

4. Ray Bromley, Professor, Dept. of Geography and Planning, University at Albany, SUNY, Albany NY 12222 Email: r.bromley@albany.edu
Fax number: 518-591-8171, Phone number: 518-591-8187
Major research interests: history of ideas in planning & development; international development; neighborhood & community development; microenterprise & entrepreneurship; city & regional planning

Linking Local Projects into Regional Systems: The Grand-Scale Landscape Architecture of Frederick Law Olmsted Sr. and Benton MacKaye

Frederick Law Olmsted (1822-1903) and Benton MacKaye (1879-1975) were America's leading grand-scale creators of landscape features and landscaping ideas. This paper describes their work, discusses the similarities and differences between their lives and ideals, and explains which parts of their grand visions were implemented.

Olmsted was the greatest American romantic landscape architect, creating man-made landscapes that shunned geometric regularities and looked magnificently natural. He advocated and designed public parks, and he created many of America's most spectacular

examples. With his one-time partner Calvert Vaux, he created the idea of the parkway, a grand tree-lined boulevard leading to the park, or connecting two parks. Then, on his own, he expanded this idea into a much broader concept, the metropolitan regional park system, whereby various city and suburban parks are interconnected by parkways, and all are also linked to waterfronts, forest preserves and wilderness areas beyond the metropolitan fringe.

Benton MacKaye was a forester associated with the conservationist school led by Gifford Pinchot. In 1921 MacKaye launched the idea of the Appalachian Trail, a hiking route of over 2,000 miles along the length of the mountain chain. By 1937 the trail was completed, overwhelmingly by community volunteers and with only modest governmental assistance and investment. The Appalachian Trail has been the principal inspiration to generations of trail advocates, and thousands of additional miles of trail have been added, both within the U.S. and in foreign countries. Nevertheless, MacKaye sought much grander changes in regional land-use patterns, creating a comprehensive system and theory of regional planning designed to restrain metropolitan growth, preserve forest areas and wildlife habitats, and encourage cooperative farming and forestry.

Though separated by two generations, both Olmsted and MacKaye were New Englanders, deeply influenced by transcendentalism and by the environmentalism of George Perkins Marsh. They were anxious to ensure that all Americans live within easy walking distance of greenery and open spaces, and keen to limit and guide metropolitan growth. They envisaged grand regional systems of parks and greenways, and though neither of them ever possessed much wealth or political power, they brought major elements of those systems into existence.

5. Stanley D. Brunn, Department of Geography, University of Kentucky, Lexington, KY 40506-0027 Phone: 859-257-6947 Fax: 859-323-1969 Email: Brunn@uky.edu

Soviet Nuclear Testing in Semipalatinsk, Kazakhstan: Being Blind-Sited and Blind-Sided

For nearly fifty years, beginning in 1948, the Soviet Union conducted nearly 500 above and below ground nuclear tests in an area near the heavy industrial city of Semipalatinsk in northeast Kazakhstan. The Nuclear Polygon, as it is known, was a sparsely populated area and was heavily impacted by these blasts. There was little advanced notice to local residents about these blasts nor about the short and long term resulting health and economic impacts. The impacts of these blasts are still evident in the polygon in that high levels of radiation preclude travel to certain parts; local residents who were alive during the testing and even subsequent generations still experience serious health problems. The memories of the testing are those evident in museums, including one in a town within the polygon, a recently constructed monument in Semey, and in the powerful

images painted by a local artist, whose works are not in public galleries in the city and country.

6. Milan Bufon, Department of Geography, University of Primorska, Glagoljaska 8, 6000 Koper, Slovenia and **Rado Genorio**, Government of Slovenia, Ljubljana
Email: milan.bufon@upr.si

Engineering Borders and Border Landscapes: Effects of the Introduction of the Schengen Regime on the Slovenian Internal and External Boundaries

The paper will present the major issues related to the introduction and provisions and regulations of the Schengen agreement on the case of Slovenia and its political boundaries. The studied country is not only representing one of the most typical border features in Europe, with an intensity of cross-border traffic, which is among the highest on the continent and around the world, but is also experiencing a deep transformation of the status of its different border sections and border areas. The previous administrative border between the former Yugoslav republics of Slovenia and Croatia became the longest Slovene political boundary after the independence of both countries, and will also represent the EU's external boundary after the enlargement of the Schengen space to Slovenia by January 2008. The previous "iron curtain" type of boundary between Slovenia and Hungary is facing deep transformations and re-adaptations to an open boundary regime and will become one of the strategic points of the new implementation of the EU's priority corridors in connecting old and new member states. New planning and "engineering" approaches will also be needed in managing the "re-integrated" spaces and societies at the borders with Italy and Austria. The authors will present the major current developments and discuss the likely future issues in adapting this "unity in disparity" paradigm to border regions' situations and cross-border integration practices.

7. Kenneth Corey, Department of Geography and Urban and Regional Planning, 124 Geography Building, Michigan State University, East Lansing, MI 48824-1117
kenneth.corey@ssc.msu.edu Fax number: (517) 432-1671 Phone: (517) 432-4750 or (517) 333-6757

Planning and Implementing Capital Cities: Lessons from the Past and Prospects for the Intelligent Development in the Future: The Case of Korea

Some of history's largest engineering projects have been planned capital cities and administrative governmental centers. These megaengineering efforts are important. They are important in their own right. They are important also because of their various impacts on their respective regions, countries and global affairs.

Strangely, there has been relatively little written about the operational details and the processes of the strategic planning and the implementation of new capital cities and administrative centers. The paper will address this gap in the literature.

The paper is organized in two parts. Part one will provide an analysis of selected planned capital cities from around the world. In general, most of the selected capital cities are derived from modern history.

Using the empirical context of the recent initiatives of the preceding president of the Republic of Korea to establish a new capital for South Korea, the lessons derived from part one are used to inform part two of the paper. The second part of the paper illustrates an approach whereby the ideas and concepts of native and local planners and decision makers may be used to construct and integrate a planning scenario intended to promote broad public debate. This approach may be used to stimulate forward-leaning strategic planning innovation in preparation for the ultimate possible reunification of the two countries and one nation of the Korean peninsula.

8. Robert Dahlstrom, Department of Marketing, University of Kentucky, Lexington, KY 40502 email: bob.dahlstrom@uky.edu
Research Interests: long relationships between firm and business-to-business and retail channels of distribution.

On the Marketing of Sustainability

Despite the ecological attractiveness of green and sustainable products, these ideas are not successful in the marketplace unless the green advantages argument and complement other product benefits. Solar panels, electric automobiles, and compact fluorescent light bulbs exemplify products that only attain marketplace success when green advantage support other consumer needs. This study reports on empirical efforts to bring eco-consciousness products to markets. We present logic for enhancing marketplace attractiveness and outline conditions under which sustainability and successfully introduced to markets.

9. Alexander Diener, Assistant Professor, Department of Geography, International Studies and Languages Division, Pepperdine University, 24413 Pacific Coast Highway, Malibu CA 90263 phone: 310-506-7740 email: Alexander.diener@pepperdine.edu

Research interests: migration, nationalism, transnationalism, the cultural geography of Islam, and the political and moral consequences of territorialization; regional interests are Central Eurasia and Mongolia

Trans-State Road Construction as a Catalyst of Ecological and Social Change; The Case of Mongolia

Environmental change, economic restructuring, political shifts, cultural rupture, and social upheaval are all consequences of trans-state road construction and the development

that follows. Research approaching this topic overwhelmingly focuses on tropical rainforest biomes and the agricultural socio-economic paradigm supported therein. This project combines socio-economic, political, and cultural research with an ecological study of change catalyzed by a major road project spanning an understudied biome and socio-cultural paradigm - the Mongolian steppe and pastoral nomadism. With only 11.9% of Mongolia's roads paved and no railroad spanning the state east/west, the yet-to-be-completed, 2,400 kilometer 'Millennium Highway' will profoundly change the state's ecology and the lives of the Mongolian people.

R1). The R1 research objective is to track the progress of the road construction (completion envisioned for 2010) and the changing volume of regional trade-related traffic crossing Mongolia. **R2).** Hypothesizing that the gravitational pull of the road will drastically reconfigure communities along its route, R2 will document changes in population, wealth differentials, material culture, gender roles, ethnic constitution, infrastructure development, and crime rates. **R3).** R3 constitutes a five year comparative study of water quality, woodland consumption, and grassland recovery. Data from 10 settlement sites will be gathered and integrated with the R2 data in a Geographic Information System (GIS).

Studying a trans-state highway while it is being built could help avert problems and provide a scientifically rigorous 'before picture' that will contribute to our understanding of the multifaceted impact of road construction in developing states.

10. Mohammad Eskandari, Ph.D. Student, Department of Geography, Clark University, Worcester MA 01610 Email: meskandari@gmail.com
Research Interests: Geography of the Middle East, Political Economy of Iran, Development Theory, Hydropolitics of the Middle East

Sweet for Whom: Sugar Cane Plantation in Southern Iran and the Experience of Development from Above

This paper explores national and local uses of environmental discourse in Iran's largest agro-industrial project, located in the southwest province of Khuzistan. The oil-rich province of Khuzistan has been the site of extensive modernization policies before and after the revolution, and experienced the devastating eight year war with Iraq. In 1989, only a year after the Iran-Iraq War ended, the government of Iran embarked on a massive project of sugar cane plantation in 80,000 hectares of land surrounding the city of Ahwaz. The project involved the mobilization of technical, human, and financial resources at an unprecedented scale, entailed land confiscation and displacement of local farmers and produced several negative environmental consequences. Leach of the soil and extensive irrigation strained the fragile water resources of the region, which in turn caused unforeseen technical problems and social conflict.

To justify the project, the state at the time used a discourse of self-sufficiency and food security, but has subsequently modified this discourse to match the changing national

priorities, including more attention to environmental impacts. The paper explores these transformations in both discourse and practice through several key questions. At what point do environmental considerations enter development policy formulations in a top-down centralized decision-making system? How do the local communities and local institutions – universities, newspapers, local branches of national ministries, etc. – differ in their perception of their immediate environment and the projects that are to improve it? And how do they react in a constantly changing political scene?

Drawing on extensive fieldwork conducted in Khuzistan, the paper answers these questions by focusing on the changing tactics and aims of local communities and civil society institutions vis-à-vis the project under two different political regimes. It contrasts social mobilizations and strategies of collective engagement under the presidency of Akbar Rafsanjani, which was marked with intensive policing and silencing of dissenting voices, to strategies employed under Mohammad Khatami, whose tenure marked a period of attempts to strengthen civil society institutions and limit governmental powers.

11. Anton Gosar, Department of Geography, University of Primorska, Koper/
Capodistra, Glagoljaska 8, 6000 Koper, Slovenia Slovenia email:
anton.gosar@guest.arnes.si

Research interests: tourism, political, population geographies, economic development, especially of the Balkans, the Alps and eastern Mediterranean

National and Transnational Development Projects in South-Central Europe: Implications in EU's Slovenia and the Western Balkans

South central Europe is characterized by huge development disparities. EU enlargement has placed Slovenia, the former Ex-Yugoslavia's province with about Euro 18,000 GDP per capita, alongside such economic giants as neighboring Italy and Austria. The southern neighbor Croatia has about 50 percent of Slovenia's GDP, whereas just 50 km distant Bosnia-Herzegovina's GDP has about one-tenth of it. Thus there is an urgent need for structural and territorial development measures to help the new member states, like Slovenia, to catch up to the EU's average and to provide economic policies which would bring non-EU western Balkan members out of poverty. Therefore there is a need for joint development projects of public and private actors in integrated development for guaranteeing the best possible and targeted use of public means and for managing those complex interventions. Several transnational projects, like the water management Sava basin project and several energy distributing projects and others have had positive and negative public response and need an objective analysis.'

Slovenia has initiated development projects which would bring added value to several regions, mostly to those which are lagging behind. These 37 projects, to be realized in the 2007 time frame, include Production Parks, Tourism Centers, Communication and Energy Projects. Most would definitely improve the region's standards and Slovenia's overall position in the EU, whereas some could have devastating effects on the environment and/or society.

12. Wil Holden, Department of Geography, University of Calgary, 2500 University Drive NW Calgary, Alberta T2N 1N4 Canada Email: wholden@ucalgary.ca Phone: 403- 220-4886 Fax: 403-282-6561

Major Research Interests: sustainable development in the developing world (specifically in the Philippines), “bottom” up development programs within the Roman Catholic Church (such as Basic Ecclesial Community movements in the Philippines), the “New West” of North America, the federalism of environmental law, and nuclear energy law and policy.

Ecclesial Opposition to Nonferrous Metals Mining to Guatemala and the Philippines: Neoliberalism Encounters the Church of the Poor

In recent years as part of the prevailing neoliberal development paradigm, many countries in the developing world have liberalized their mining codes in an effort to encourage foreign direct investment by corporations engaged in nonferrous metals mining. Guatemala and the Philippines are examples of two such countries and their respective governments have enacted legislation designed to attract mining investment. Nonferrous metals mining is, however, an activity with a substantial potential for environmental degradation and in both of these countries the potential environmental effects of mining have generated substantial opposition from the Roman Catholic Church. This paper discusses the opposition of the Church to mining in Guatemala and the Philippines, namely its potential to disrupt the livelihoods of the poor, and the influence of liberation theology, with its preferential option for the poor. Upon those members of the Church engaged in anti-mining activism.

13. Peter Hugill, Professor Department of Geography and Bush School of International Affairs, Texas A & M University, College Station TX 77843-3147, Email: pjhugill@tamu.edu Fax: 979 862-4487 Phone: office 979 845-7106 secretary 979 845-7141
Major research interests: technology and geopolitics

Re-Making America: Soil Science, Earth Moving, Highways and Dams

American engineers have moved more earth than any engineers in history, primarily to build the American highway network and to control the flood-prone rivers of the American South with a huge network of earthen dams. This paper traces the intellectual basis of that ability to the recruitment of Karl Terzaghi, the “father of soil mechanics,” to MIT in 1924, and the diffusion of his work through publication, the creation of a cadre of graduate students, and the creation of Departments of Soil Science, especially in America’s Morrill Act Colleges. Better understanding of soil mechanics allowed American engineers to embark on the first period of national “Good Roads” construction in the 1920s and the much more ambitious Federal Interstate Highway System in the 1950s. After primitive attempts to control flooding on the wild rivers of the cotton South with levees, very serious floods on the Brazos River in Texas, especially that of 1913, and

on the Mississippi, especially that of 1928, persuaded American engineers that only dams could control such rivers. Only earthen dams were feasible in the huge numbers required and such dams were only possible with a thorough understanding of soil mechanics.

14. Graeme Hugo, Yan Tan and Yong Chen, Geographical and Environmental Studies, University of Adelaide, SA 5005 Australia; National Institute of Labour Studies, Flinders University, Australia; and Institute of Environment and Regional Development, Sichuan University, China email: Graeme.hugo@adelaide.edu.au

Research Interests (Hugo): international and internal migration in Asia and Australia, population and environment, aging, population policy

Demographic Impacts of the Three Gorges Dam

The Three Gorges Dam is not only the biggest hydro project in world history, but has produced the world's largest planned human displacement and resettlement. The displacement and resettlement issue has been regarded as a critical challenge for China, involving relocation of over 1.2 million people over a 16-year period to 2008. Although rural migrants make up only 42 percent of the total, the problems associated with their displacement and resettlement are much greater than those associated with relocation of urban residents. Specifically, some 189,000 rural migrants have moved out of their original counties in the reservoir area and resettled in 26 provinces nationwide. The majority of them were displaced and resettled by the "government-organized distant resettlement" schemes in 2000-06, whilst some 25,000 voluntarily moved out of the reservoir area in recent years. This mega-resettlement has confronted tremendous problems at various phases, initiated many valiant and innovative solutions on the ground; and radically changed the population geography of the reservoir area and other affected regions. The Government of China and the Chinese people are pioneering a number of "development-oriented resettlement" policies and interventions that have global implications for improving outcomes of involuntary resettlement produced by development projects. Through examining this mega-resettlement and rural resettlement in particular, this paper provides an overview of this complex process. It discusses major resettlement methods, consequences and issues; maps out temporal and spatial distributions of the population (urban, rural) displaced by various resettlement approaches, and draws upon lessons from this resettlement practice. (abled, and women) are suggested.

Key words: Three George Project (TGP), distant resettlement, livelihood reconstruction, social integration, Sichuan province

16. Aharon Kellerman, University of Haifa, Mount Carmel, Israel 31905 Email: akeller@univ.haifa.il

Geographical aspects of international airports:

Passengers in an authoritative environment

This presentation looks at airports from passengers' perspectives. It shows that international airports are, above all, spaces of highly explicit expressions of several levels of authority. The article first distinguishes between airline and airport geographies, followed by an identification of world leading airports using several measures. Then, the presentation describes the several airport authorities and their responsibilities, spelling out their powers on the physical elements of airports, with special attention to signage. This is followed by discussions of airport operations and resulting passenger flows, once again focusing on the role of authorities. These discussions lead, finally, to expositions of travelers' socialities while at international airport terminals, arguing that these stem from authoritarian terminal activities, while focusing on passengers' disembedding and dialectics.

17. Kuntala Lahiri-Dutt, Fellow, Resource Management in the Asia Pacific Program at the Research School of Pacific and Asian Studies, Australian National University, Australian National University, ACT 0200 Canberra, Australia
Email: Kuntala.lahiri-dutt@anu.edu.au Phone: +61 2 6125 4343 or +61 4091 58145

Research interests: mining, gender and community development; informal mining as a livelihood in developing countries; community management of water resources in South Asia, and gender issues

The Mega-project of Mining; A Feminist Critique

Mining has been the original human endeavor of engineering; tools are an integral part of the project of mining itself. Most contemporary mining projects continue to be characterized by the intensive use of technology and capital, and have come to symbolize the evils of neoliberal development. Consequently, a host of ideologies and approaches to development have battled with each other on the mine sites, especially as they increasingly break new grounds in third world countries. The interface between mining and the government in these countries has been a contested terrain where the challenge of “sustainability” has proven to be enormous for social scientists and technologists alike. This paper notes that the interface between mining and human communities on the other hand has been closely scrutinized by social scientists giving rise to a literature in which the predominant discourses are that of “social impacts” and its policy-equivalent, “project affected persons.” The discourses not only obscure and homogenize the human communities into ungendered masses, but also illegitimizes mineral-based livelihoods particularly in the third world.

18. Richard Levine, Michael Hughes and Casey Ryan Mather, School of Design and Architecture, Center for Sustainable Cities, University of Kentucky, Lexington, KY 40506 email (Levine) rlevine@uky.edu
Research Interests:

Sustainable City-Regions: Mega-Projects in Balance with the Earth's Carrying Capacity

When introduced into a balanced natural environment, a mega-project, whatever benefits its construction is meant to foster, will create huge imbalances to that environment. In contrast, in the future sustainability will be the standard for all new projects as well as the basis of a massive project to transform the existing man-made environment. This will require the balancing of resource and energy use at every scale starting with the smallest scale – the scale of the individual dwelling. Imbalances will only be permitted at a given scale only when the accountability for that imbalance is negotiated with some agency at the next larger scale. The master scale for adjusting these numerous balances will be the city-region where the major balance-seeking activities will be carried out. This paper presents a design for a city-region that is well tuned for the carrying out of such a balance-seeking process. The project is an entry to a competition to design a new administration town for the country of South Korea. This entry presents a new urban form- a MegaForm; the Sustainable City-as-a-Hill or what we have called a Sustainable Urban Implantation, that is well suited for both the negotiation and the ongoing management and governance of an urban metabolism whose system processes are tuned to the process of balance-seeking.. The resource for such a town is based upon the principal of the Sustainable Area Budget (SAB). The SAB is an equitable, land-based budget from which, on a net basis, all the city's energy and resource needs are to be met. A multiple, participatory, alternative, sustainable scenario-building is described whereby citizen stakeholders are able to negotiate how they afford to live within the carrying capacity of their Sustainable Area Budget.

19. Edward Malecki, Department of Geography, Ohio State University, and **Michael Ewers**, Department of Geography, Ohio State University, Columbus OH 43210-1361
Emails: Malecki.4@osu.edu and ewers.13@osu.edu

Research interests (Malecki): economic development, technological change, and policy
(Ewers): economic development, labor migration, and human capital

Megaproject: A Four Decade Perspective of the Gulf Development Model

Since the global oil shock of the early 1970s, the countries of the Arab Gulf States – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates – have stimulated economic growth through infrastructure-led development in the form of distinct megaprojects. Initially, this as basic infrastructure in order to facilitate and expand oil production. Multinational construction, engineering and oil companies (MNCs) and their labor provided the skill and technology for this infrastructural development.

As we fast-forward 35 years and witness the exceptional urban development of Abu Dhabi, Dubai, and their counterparts in the Gulf, it is often forgotten that these new development projects represent varieties of a four-decade old development continuum in the Gulf: the development of oil windfalls into megaprojects to promote rapid economic growth. Since the 1980s oil slump, the Gulf countries have invested in megaprojects to transition beyond oil, representing five types of post-oil trajectories: resource-based industrialization, entrepôt, services, tourism, and knowledge.

This paper examines each of these trajectories through detailed analyses of specific megaprojects, from conception and construction through maturity, impacts, and outcomes. The varieties of Gulf diversification trajectories are conceptualized through this megaproject framework with three objectives. First, to assess the complements and constraints of oil-based development legacies on the transition beyond oil; second, to identify the “construction” of new entrepôt, service, tourism and knowledge modes in the world economy; third, to determine the effects of continued reliance on foreign skill, labor and technology from MNS to promote and sustain local development.

20. Philip Micklin, Professor of Geography, emeritus, Dept. of Geography, Western Michigan University, Kalamazoo, MI 49008 Email address: Micklin@wmich.edu Fax number: 269-387-344 Phone: 269-345-6541 (home)
Major research interests: Aral Sea, water management in Central Asia, large-scale water transfers

Siberian Water Transfers: “Project of the Century?”

The 20th Century was the era of grand engineering projects. Man’s faith in his ability to “remake” nature for human benefit was at its zenith. We had unraveled the mysteries of nature, developed engineering technologies that knew no bounds, and were confident in our ability to design a better world. One of the most grandiose proposals put forward was the massive transfer of water from the giant Siberian rivers flowing into the Arctic (Ob and Yenisey) 1500 to 2000 km southward into Central Asia. Initially conceived in the 1870s by Russian hydraulic engineers, the idea was enthusiastically adopted by the Soviet Union, which had as part of its Marxist philosophy, a view that not only was nature malleable to redesign on a vast scale, but that this was an essential element in bringing on the full development of a Communist utopia. Following WWII, as part of the “Stalin Plan to Remake Nature”, plans were drawn-up to divert vast flows from the Siberian rivers to Central Asia. After Stalin’s death in 1953, these plans were “scaled back” but not dropped. By the early 1980s, detailed design of the 1st stage diversion (27 km³/yr) from the Ob river system was complete and implementation was imminent. However, Gorbachev’s ascendancy to leadership of the USSR in 1985 and “Glasnost” allowed the substantial forces in opposition to make their case that these projects were an economic boondoggle and ecologic catastrophe. The next year, the project was put on hold pursuant to “further research” on its justification. Environmental and ecological concerns played a role in the project’s demise, but economic considerations and ethnic prejudice against Central Asians were paramount.

21. Alina S. Newkirk, Institute of Geography, Russian Academy of Science, Moscow State University, 119017 Moscow, Staromonetnyi per., 29 Russia and Gleb Sergeevich Nekrich, Institute of Physics, Mendeleev City (near Moscow) Email (Alina): nekrichalina@yahoo.com Fax: +7 (495) 129 28 31 Phone: +7 (495) 129 28 31 +7 (903) 557-57-06

Major research interests: Geoecology, Ecological mapping and Assessment, Ecological economics, Land use, Sustainable development, Landscape planning

Character and Scale of the Violations of the Environment as a Result of Man-caused Influence of a Mining Complex based of the Largest Iron-Ore Deposits of Russia.

Kursk Magnetic Anomaly (KMA) is the largest iron-ore province in the Central Black Earth region of the European part of Russia. KMA basin takes a key position in the world in reserves, the tenor (up to 78%) and quality of iron ores, and takes the first place on extraction in Russia. The largest and economically sound iron ores deposits KMA for Russia are Lebedinskiy, Korobkovskiy and Gostishevskiy deposits. The whole mining and smelting cycle of iron industry is concentrated within the limits of their field development. This cycle exerts influence on the environment causing a complex of man-caused violations of the environment and a large number of environmental risks. At the same time, the character and the scale of the violations depend on the methods and systems of field development.

At present time the most man-caused influences are the following: lithogenous bases and relief transformation, air pollution, soil degradation, superficial and underground waters pollution and deforestation. In the KMA region more than 40% of lands are violated. Quality of underground and superficial waters in the places of development Korobkovskiy and Gostishevskiy deposits is close to critical data. Drinking water shortage runs up to 6 000 m³/per day. More than 1 300² km of KMA area have irregularities in water balance. The zone of 1 250 km² of soil degradation was formed in the adjoining territories of these deposits. Soil erosion has reached a significant scale (more than 30% from a total area of the KMA) and is characterized by the annual fall in fertility up to 0.5–1.0 tons/hectares. In the KMA region there are more than 43 million m³ taken by underground voids. Wood species are affected by chlorosis.

KMA area is a territory with the difficult environment, where the measures are necessary to prevent environment degradation.

22. Sam Otterstrom and Richard Jackson, Department of Geography, Brigham Young University, Provo UT 84602 Emails: Sam_otterstrom@byu.edu and richard.jackson@byu.edu
Phone: 801-422-3851 Fax: 801-422-0266

Research Interests (Otterstrom): historical and contemporary migration; settlement geography

The State of Deseret: The Creation of the Mormon Landscape in the Western United States

When Brigham Young and other pioneer settlers of the Church of Jesus Christ of Latter Day Saints (commonly known as Mormons) came to the Salt Lake Valley in 1847, there was little in the way to greet the newcomers. It did not take long, however, for the Mormon leadership to lay out the streets for a new city and designate the location of their future temple. In the ensuing decades Brigham Young set out to settle much of the Intermountain West with determined effort by sending groups of “Saints” to colonize lands in what they hoped would become the “State of Deseret.” Mormon cities and villages had many common taints that stemmed from the City of Zion plat, which was designed by the church’s first prophet, Joseph Smith. This village plan was replicated many times throughout the Mormon West, imprinting a distinct pattern of settlement on the land. These places usually included a variety of religious buildings, which were conspicuously incorporated within the defined orientation and layout of the town. Other peculiar features of the built environment also emerged. In this paper we illustrate both the production of the historical Mormon pioneer landscape as well as the transformation of these places as the region has encountered and incorporated elements from the “outside” world. Still, the current spatial organization and religious building program of the church both inside and outside of the Mountain West attest to its ongoing efforts to shape the social and cultural landscape of its people.

23. Pernilla Ouis, Senior Lecturer and Researcher, Faculty of Health and Society, Malmö University, Malmö, Sweden {Email: Pernilla.ouis@imer.mah.se Phone: +46 40-665 77 89 Email: Pernilla.ouis@mah.se Fax: +46 40-665-73-80
Research interests: modernization and Islamization in the Middle East; human ecology; health, and outdoor recreation; gender, honour, and sexuality in Islam; cultural aspects of animals.

Engineering the Emirates: The Evolution of a New Environment

Few countries in this world have changed so tremendously in such a short time as the United Arab Emirates (AUE) located at the Arab coast of the Persian Gulf. From being a poor Bedouin society in an extremely hot and dry environment, the country has transformed into an ultramodern state with all kinds of possible luxury in a new few years due to wealth generated by export of fossil fuels. Today it has one of the world’s highest’s GNP per capita with the largest “ecological footprint/capita in the world. The UAE continues to construct various megaprojects transforming their environment despite the high cost of resources in this sensitive milieu. AT the same time the country will sow examples of various projects such as green profile on the global market. This paper will show examples of various projects such as the large greening efforts, indoor winter sports facilities, and the creation of the three artificial palm islands transforming their environment, while at the same time discussing environmental aspects of such projects. The UAE exposes typical paradoxes of ecological modernizations and the so-called glocalization of this new environmental discourse.

24. Maria Paradiso, Associate Professor of Geography and Planning, University of Sannio, DASES v. delle Puglie, 82 82100 Benevento, ITALY Email address: paradiso@unisannio.it Fax number: +39 (0) 824 305777 Phone number: +39 328 00 95624

Major research interests: geography and planning for the information society

Earth Engineering and the Impacts of Mega projects: Information Geography as an Interface Between Engineering and Geography?

The paper attempts to discuss the possible role of information geography as a bridge between engineering and geography in light of mega-projects such as large ICT networks, universal access issues, the bridging of the broadband gap in disadvantaged areas and experiments with new WiFi technologies. The development of new generation WiFi networks, for instance, in developing countries or universal access perspectives in European rural and remote areas

constitute mega-projects from the point of view of technological complexity but need project governance. Even if not fully physical ones, these networks and issues contribute to earth engineering and affect distance and proximity not to mention impacts on local cultural geographies. Since the paper focuses on the bridging role of information geography in providing links with engineering, the presentation will attempt to provide selected elements of these knowledge fields in order to show their similarities, their differences in approach, and the missing links in the carrying out of mega-projects. In an increasingly complex society and 'engineered earth', mediated by information and communications technologies, several points can be considered for discussing the metaphor of a bridge:

1. Awareness that not every innovation can be adopted, and use potential are not properly considered before supplying the new technology (choosing the best technological mix and encouraging 'technological neutrality').
2. Geographical differences in context and significance (supporting technology supply and projects design)
3. Interdependencies between infrastructure, information products, and place (tailoring project structure and contents).
3. Awareness that ICTs encourage empowerment (strategic attention paid to opportunities for individuals).

25. Ganesan Raghuram, Indian Railways Chair Professor, Public Systems Group, Wing 15, Indian Institute of Management,, Ahmendabad 380015, India

Infrastructure Developing in India: Environmental Issues

Environmental issues have been the most significant choke points for infrastructure developments in India. Land acquisition, rehabilitation of displaced people, felling of trees, impact on environmentally 'fragile' zones due to acquisition, construction, and operations, impact on pollution, and more recently the issue of carbon foot prints have been points of debate that have stalled and delayed developmental projects. Each debate, however, has provided learning for new frameworks.

The focus of this paper will be (i) a broad review of infrastructure projects and how they have been affected by environmental issues and (ii) a specific case study covering the environmental issues related to the Konkan Railway Corporation which constructed and operates the 750 km long Konkan Railway on an environmentally sensitive route.

26. Marlin (Marty) Reuss, Retired as Senior Historian, Water Resources, Army Corps of Engineers; address: 14 N. Bearwood Drive Palmyra VA 22963 Email:

matreuss@aol.com Phone: 434-589-1169 Fax: 434-589-1169

Major Research Interests: History of US and international water policies and technology; history of flood control and inland navigation, history of hydraulic engineering, history of hydrology, environmental history.

The Lower Mississippi as a Technological System

Nearly three centuries of manipulation of the lower Mississippi and its tributaries have changed a natural ecological system into a high contrived plumbing system consisting of levees and riprap to contain the water, floodways to accommodate water that the Mississippi cannot carry without threatening human life and property, dredging to deepen the river, and dams on some of the tributaries. The Corps of Engineers controls this system, which began to be constructed in 1928 and still is not entirely finished. Even earlier, the Corps, working with local interests had attempted to confine the Mississippi's waters, believing firmly in a "levees only" policy. Reliance on levees was shown to be fatally flawed in the tragic 1927 Mississippi River flood. Using PowerPoint slides, this presentation will describe how the present lower Mississippi flood control system evolved, how it works during a major flood event, and the methods the Corps has used to identify necessary levels of protection. Finally, the presentation will demonstrate how attempts to accommodate navigation interests may lead to unintended and unfortunate consequences related to flood control.

27. Joseph L. Scarpaci, Department of Geography, Virginia Tech University, Blacksburg, VA 24061 email: scarp@vt.edu co-authors: Korine Kohivras, Department of Geography, Virginia Tech University and William Galloway, School of Architecture-Design, Virginia Tech University.

Research interests (Scarpaci): landscape representation and heritage tourism. His book, *Cuban Landscapes*, will be published by Guilford Press in 2009.

Engineering Paradise: Staking Claim in the Dominican Republic's Last Tourist Frontier

Tourism and second-home residential developments continue to drive formal sector employment in the Caribbean. The Dominican Republic has been particularly aggressive in marketing tourist enclaves, beginning with the ambitious La Romana project in the 1970s and followed by exorbitant growth of the Punta Cana-Brava region at the eastern tip of Hispaniola.

In the new millennium, an interesting alignment of global financiers, ranging from deposed Venezuelan presidents, Dominican banking and construction tycoons, and the ubiquitous Donald Trump, is developing the ambitious Cap Cana/Trump Farellones resort and second home city. The scale and breadth of the operation is surpassed only by the branding of supporters behind the project. From the New Yorker Donald Trump himself to Jack Nicklaus-designed golf courses, and to Oscar de la Renta crafted interior decorations. Buoyed by the successful Punta Cana Hotet and Resort that boasts residents like Oscar de la Renta and Julio Iglesias, as well as frequent visitors such as Bill and Hillary Clinton, the new Cap Cana/Trump Farellones development may possibly be the largest planned city in the circum-Caribbean basin since the Ciudad Guyana project of Venezuela in the early 1960s. The paper outlines the project, discusses the public-private partnerships that have been formed, assesses the images used in promoting the site, and documents the social and environmental impacts that have already surfaced. It concludes with an overview of labor and capital implications for the Dominican Republic, Haiti, and neighboring islands.

Key Words: urbanization, Caribbean, second home development, environmental impact, Dominican Republic.

28. Izhak Schnell, Department of Geography and Human Environment, Tel Aviv University, 69978 Tel-Aviv Israel email: schnell@post.tau.ac.il phone: 0097297674820
Research interests: social-cultural geography, urban social space in era of globalization and segregation, ideological landscapes of Israel, social spatial embeddedness of Arab entrepreneurs

We Shall Dress You in a Robe of Cement and Concrete: Comparison Between Environmental Discourses in Israel on the National Water Carrier (1950s) and the Cross Israel Highway (1990s)

The two largest development projects built in Israel are the national water carrier, built in the 19540s and the Cross Israel highway built in the 1990s. Both projects became cores of intensive debate on the environmental consequences of the project, but the main narratives used in the debate changed drastically. While during the 1950s the state and its agents adopted an ideological argument associated with classical narratives of progress and a need to conquer bewildered nature in the process of blooming the desert, the opposition to the government's position adopted a romantic attitude that viewed human intervention in nature as immoral. In the 1990s the Cross Israel project has been justified by economic reasonings while both sides attributed to environmental considerations

relevancy, being divided on the relative weight that should be given to environmental considerations in achieving a sustainable environment. The debates were differently framed and managed, were based on different ideologies and as a consequences led to different styles of management. The paper will compare the two debates and their consequences on the development of the projects.

29. Joni Seager, Professor & Chair. Dept of Geography, Hunter College, Room 1009N, 695 Park Ave. New York, NY 10021 jseager@hunter.cuny.edu Phone: 617-620-2932
Major research interests: Feminism & environmental policy; militarism and environment

Comprehending the Incomprehensible: Military Environmental Agency

Militaries are unique international actors in terms of their capacity to wreak massive-scale environmental change without challenge and often without notice. In times of war, environmental damage is often the least-noticed effect of conflict; if noticed, it is often considered to be of lesser importance than other casualties or “collateral damage”. In non-war settings, militaries can produce massive environmental change while remaining exempt from most civilian-authority interrogation or intervention. To comprehend military-induced environmental change – and to develop appropriate responses or constraints to it -- thus presents two challenges, one theoretical the other empirical.

Militaries are unanchored agents – they are not tied to, nor formed by, normal processes of institution-building, policy-formulation, or civil society engagement. Militaries exist in real and social space, but are more “above” them than they are “of” them. This amorphous identity hinders the development of theoretical approaches to military-environment relationships: military environmental agency cannot easily be anchored to any of the standard frameworks that, in other realms, interrogate and reveal cultural-environmental relationships.

Empirically, military activities are cloaked in secrecy and silence. “National security” narratives protect militaries from scrutiny, and military activities are often literally conducted off-limits. The patchiness of knowledge about military environmental activities requires a patchwork of investigative methods and empirical approaches that typically produce frustratingly limited results.

This paper will map out the dimensions of the theoretical challenge, will summarize briefly the state of knowledge about global military environmental damage, will explore some of the most promising recent theoretical and empirical approaches, and will suggest new directions in both.

30. Benjamin Smith, Department of International Relations and Geography, Florida International University, DM 437B, 11200 SW 8th Street, Miami FL 33199
bsmith@fiu.edu Phone: 305-348-2074 Fax: 305-348-6138

Engineering New Geographies with the Burj Dubai

By now, it has become knowledge that the Burj Dubai will be the world's tallest building. What is truly amazing is given that Dubai is the place where everything from palm tree shaped peninsulas, through human made rivers to indoor ski slopes area being constructed, the tower may not even be the most widely followed project in the Emirate. Nor is it anywhere near the only tower being built in the Dubai – indeed there are hundreds more or less mundane ones under construction currently. Thus, although the Burj Dubai will stand singularly above the Emirate, it would not be proper to look at it in isolation. In this paper I examine the context in which the Burj Dubai is being “put to work,” for the transnational ambitions of its developer Emaar Properties, for the urban experience of people who do or might someday live and work in Dubai, and the actively ongoing repositioning of the Emirate in the transnational capitalist imaginary. Through interviews with engineers, government officials, real estate professionals, and a wide diversity of residents in Dubai, gathered during six months of field research in the Emirate during three trips between 2005 and 2007, as well as various media and advertising sources, this paper will explain that the Burj Dubai is more than a mere uber-symbol, but a multi-directed technology meant to remake cultural and economic geographies, though not always in ways one would expect.

31. Nigel Smith, Professor, Department of Geography, University of Florida, Gainesville, FL 32606 and **Henrique dos Santos Pereira**, Professor, Faculdade de Ciências Agrárias, Universidade Federal do Amazonas Av. Gal. Rodrigo O.J. Ramos, 3000 Japim, 69077-000 Manaus, Amazonas, Brazil
Email addresses: nsmith@geog.ufl.edu; Henrique.pereira@ibama.gov.br
Fax number: 352 392 8855, Phone: 352 215 1169
Major research interests: The use and conservation of natural resources in tropical wetlands

Agricultural History of the Amazon Floodplain: Lessons for Development and Conservation

The Amazon floodplain has a long history of human use and abuse, but it is also remarkably resilient. This paper explores the long trajectory of human interventions on the Amazon floodplain from the arrival of the first hunters and gatherers tens of thousands of years ago, to the advent of the colonial era and the planting of cacao and sugarcane in certain wetlands and the modern era with large scale cropping and livestock raising. Efforts to develop the agricultural floodplain via large scale engineering projects, such as the Jari rice operation, are examined. The rise and fall of jute and the rapid spread of cattle and water buffalo herding are also explored with respect to their impact on the environment, especially with regards to fisheries. The push to green energy is also examined with respect to dam building for HEP.

32. Philip Steinberg, Department of Geography, Florida State University, Tallahassee, FL 32306-2190 Email: psteinbe@fsu.edu Phone: 850-644 8378 Fax: 850 644-5913 Major research interests: engineering projects that break down the fundamental boundary between land and water that historically has divided the spaces of the world and provided the material basis for key social institutions such as property and sovereignty

**Engineering Beyond the Land-Sea Divide:
Three Case Studies from the Outer Limits of the Possible**

Perhaps no material distinction is so fundamental to modern society as that between land and water. Land is perceived as solid, boundable, controllable, the space of civilization and development. Water, by contrast, is understood as an element that either threatens or is used by land-based civilizations (as a resource providing connection and sustenance). The salience of this binary opposition is tacitly acknowledged by cultural theorists who use the meeting point of land and water as a metaphor for exploring new conceptions of culture and by those who see counter-hegemonic potential in water-based social formations.

In this paper, these theoretical provocations are explored further through the examination of the social and spatial ramifications of three recent engineering advances that enable social life to space the land-water divide. First, I examine recent Dutch initiative where urban design revolves not around keeping water out (as traditionally has been the case in The Netherlands and elsewhere), but in bringing water into the city. In particular, I focus on the floating city of Maasbommel. Second, I turn to an emergent phenomenon, made possible by advances in cruise ship design and communication and transportation technology: permanent residence condominium cruise ships. Thirdly, I turn to the SeaCode venture, which involves docking a cruise ship off the California coast and peopling it with Indian software engineers, permitting US companies to “offshore” their business while freeing themselves from the inconvenience of the distance between the US and India. With this final study, the research comes full circle. Not only do engineering advances make new spatial and social formations possible, but these new socio-spatial formations rework the meaning of space and, indeed, enable a new round of engineering.

33. Adamu Tanko, Associate Professor, Reader, Department of Geography, Bayero University, PMB 3011, Kano, Nigeria Email: aitanko@gmail.com Phone: +234 803 263 8229 Major Research Interest: Water Resource and Irrigation Management

**Mega Dams for Irrigation in Nigeria:
Nature, Dimensions and Geographies of Impacts**

Following Nigeria’s Independence in October 1960 and recurring (early) droughts, especially in the north, governments at different levels were lured by the World Bank and other funding agencies to adopt mega dam option for large- and medium-scales irrigation projects (i.e. covering land areas of between 10,000 and 62,000 hectares). Commitments of Nigerian leaders led to prompt and wide development that in one basin there were over

20 earth-filled dams, each with plans for the development of irrigation projects. This paper reviews assessments in the early 1980s which indicated favorable/mild physical and human impacts that point to changing morphologies of river courses and increased agricultural productions, leading to prosperous farmers and proliferations of many agro-allied factories. In recent times however, deeper assessments show that, apart from the unfavorable changing soil and water qualities, the paper reviews waterlogging and aquatic weed infestations in the river basins as causes of lower agricultural productivities. Typha grass in the waterlogged irrigation sites has taken over disproportionate size of the formerly cultivable lands causing perennial floods. Other impacts reported recently include, marginalization of downstream communities, land appropriation, capitalization and speculation in the irrigation areas etc. These, in the face of the existing Land Use Act (1979), exacerbate crises of landlessness, peasantry and incessant conflicts between, especially the farming and pastoral communities. The crises have drawn a lot of concerns by governments and few development agents in recent times. Through collaborative interventions, the problems are beginning to be identified and verified that mitigation measures are being planned.

34. Stanley Trimble, Department of Geography, UCLA, Los Angeles, CA 90024
Phone: Trimble 310-825-1314 Fax: Trimble 310-206-5976 Email:
Trimble@geog.ucla.edu

Research interests: Trimble - human impacts on hydrology and geomorphology over historical time.

Megaengineering of the Environment: Effects of Modern Soil Conservation Measures on Two Regions of the Humid United States

While there were proponents of soil conservation in 19th century America, a true soil conservation movement and the development of adequate engineering measures were the product of the early 20th century. Recognizing that available conservation measures were not adequate to deal with the intense rainfall of the humid US, both individual states and the federal government undertook long-term experimentation to develop adequate practices. The fruits of this research generally did not become available until the 1930s and later. At the same time, the historically disastrous soil erosion of US cropland was being recognized and a soil conservation movement was gaining momentum. This culminated in the formation in 1933 of what is now the Natural Resources Conservation Service of USDA, an organization designed to take this newly developed conservation engineering and technology direction to the farmers. Additional strategies were to increase unit crop outputs and thus take critical land out of production, often with subsidies. AT the same time, economic forces as well as the deleterious effects of previous sil erosion were also removing more erosive land from agriculture.

The effects of these measures can be seen all over the US, but especially in two regions of the humid US which were suffering disastrous erosion: the Southern Piedmont and the Upper Mississippi River Hill Country (Driftless Area). In both regions, soil erosion was

greatly reduced, in some places by orders of magnitude. An important distinction between the two regions was that the Piedmont was by that time marginal cropland so that much of the improvement came from the reversion of cropland to woodland and pasture. The Driftless Area, on the other hand, retained most cropland so that improvements were due largely to implemented landscape engineering.

35. Markku Tykkylainen and Olli Lehtonen , Department of Geography, P. O. Box 111, University of Joensuu, FI – 80101 Joensuu, Finland Email: markku.tykkylainen@joensuu.fi Phone: +358 13 2513445 Fax: +358 13 2513454 Mobile: 358-50-3011570

Major research interests: rural geography, economic geography, resource communities, regional and spatial development

Transition to High-End Wood Processing and Wood Energy Production and Its Socio-Spatial Implications in Rural Resource-Based Economies

High price of energy and the export duties of Russian raw wood create pressures to Nordic saw mills, board factories, and pulp and paper mills to develop their production and to increase the use of domestic wood. In parallel, the use of wood for energy production is increasing and diverse environmental values have impacts on forest management. These transformation pressures lead to searches for more efficient and sustainable solutions in the forest sector and its production chains.

This paper elaborates how the Finnish large-scale import-dependent wood-process industry could transform into more sophisticated forest production clusters of high-end products and energy and what the socioeconomic impacts of these developments are to resource dependent areas. The study investigates the potentials of forest utilization and the use of food for future industrial and energy needs and maintaining forest ecosystem functions in the boreal forest belt.

The study analyzes the socioeconomic impacts and geography of production systems in transition to several geographical scales, from a farm level to multiregional production systems. It combines forest growth modeling with geographical socioeconomic simulations and forecasting. Based on forest simulation and geographical analyses the socio-spatial outcomes of forest management practices together with anticipated future wood processing and energy needs will be analyzed in order to utilize sustainable rural socioeconomic spatial systems as part of highly competitive industrial clusters.

36. Barney Warf, Department of Geography, Florida State University, Tallahassee, FL 32306-2190 email: bwarf@fsu.edu phone: 850-644-8371 fax: 850-644-5913 (note: moving to University of Kansas later this summer)

Engineering Time and Space with the Global Fiber Optics Network

This paper examines the changing political economy, spatiality, and impacts of the global fiber network, which seamlessly links the major engines of the world economy. Because large corporate users are the primary clients of such systems, it is no accident that these lines connect global metropolises and information-based economies. In 1988, AT&T initiated the world's first trans-oceanic fiber optic cable, which doubled capacity across the Atlantic. Starting in 1989, a growing web of trans-Pacific lines mirrored the rise of East Asia trade with North America. In 1997, AT&T and several other firms opened the self-healing Fiberoptic Link Around the Globe, the world's largest submarine telecommunication network. Even Africa is circumnavigated by the Africa ONE system.

As the transmission capacities of fiber optics carriers rose explosively in the 1990s, the industry suffered overcapacity and declining utilization rates, leading to large quantities of unused "dark fiber." Transmission prices plunged, forcing some firms into bankruptcy. The growing fiber industry also posed a severe challenge for satellite services providers; while satellites are ideal for point-to-area distribution networks common in the mass media, fiber optics are preferable for point-to-point communications, especially when security is of great concern, due to the great redundancy they offer.

The primary users, and thus beneficiaries, of the fiber optic were financial and producer services firms, which used them, for example, the electronics funds transfer systems to move capital around at a moment's notice. Disembedded from place, financial capital operates with an agility and speed that defies even the most quick footed of state institutions.

37. Mark Wilson, School of Planning, Design, and Construction, Michigan State University, East Lansing, MI 48824 Email: wilsonmm@msu.edu fax: +1 509 472 8102

Event Engineering: Urban Planning for Olympics and World's Fairs

Ephemeral events, such as the Olympics and world's fairs, play a significant role in the remaking of urban space. The global focus on one city for a specific event prompts substantial redevelopment and of the transformation of a city's landscape and infrastructure. An Olympic games or world's fair will reshape hundreds of hectares of urban land and cost billions of dollars, leaving a legacy that history will remember, such as the Eiffel Tower, or perhaps forget. The Olympics and world's fairs are often seen as ephemeral events, yet the change to the built environment associated with them must be recognized and understood if the legacy is to be useful to the city.

This paper will explore the urban planning dimensions of the Olympics and world's fairs, with emphasis on several elements that tend to be ignored due to preoccupation with the event itself and not the preparation of aftereffects. First, the organization and preparation of the event usually takes specialized organizations and truncates existing development processes in order to meet the timelines for the event. Second, the massive scale of redevelopment associated with these events requires construction of event spaces and

transportation infrastructure. Finally, post-event land use and the incorporation of the sites into the city will be discussed. Data for the paper will be drawn from Olympics and world's fairs held during the past fifty years, as well as from current projects in Beijing, Zaragoza, Shanghai, and Vancouver.

38. Ernest J. Yanarella and Christopher Rice: Professor and Lecturer,
Department of Political Science, Office Tower # 1615, University of Kentucky
Lexington, KY 40504 Email: ejyana@email.uky.edu christopher-rice@uky.edu
fax: 859-257-7034 phone: (859) 433-3137
Major research interests: political theory, critical policy studies, politics and literature

**Modernist Hubris, Ecological Apocalypse, and Scientific-Technological
Salvation in Kim Stanley Robinson's Global Warming Trilogy:
The Specter of Terraforming**

Kim Stanley Robinson has emerged as one of the most environmentally concerned and political savvy science fiction writers among his contemporaries. His ecological concerns began early and reached maturity in his Mars trilogy, which won rave reviews and science fiction honorifics, as each was successively published. Between 2004 and 2007, his latest trilogy—the “Science in the Capital” series—was released, focusing upon the near-term dangers of global warming and the tendencies toward a kind of surveillance society in the United States spawned by the continuing war on terror.

This paper seeks to spotlight the good, the bad, and the ugly in the trilogy by exposing Robinson's Enlightenment assumptions about modern science and the scientific community, his fascination with fast-times scenarios, his license to Science and scientists to utilize terra/terror-forming techniques on Earth's ecosystem, and perhaps his political liberalism. In the process, it juxtaposes trends in the techno-corporate world affirming precisely the Big Science solutions advanced by Robinson in his trilogy against more difficult, but more promising alternatives emerging from Post-Enlightenment responses to global warming as a cultural and political economic crisis emanating from voices from grassroots organizations and postmodern ecological thinkers. The paper's critique then taps that small, but inchoate, body of critical political and literary analyses that read Robinson's work against the grain of his wide popularity and reputation as this generation's best ecological science fiction writer.

39. Jian Zuo and George Zillante, School of Natural and Built Environments,
University of South Australia, North Terrace, Adelaide, Australia, 5000 Jian Zuo, Ph.D.
candidate email: Jian.Zuo@postgrads.unisa.edu.au phone: +61 8 8302 1914 fax: +61
8 8302 22452 and George Zillante, Head of School, email:
George.Zillante@unisa.edu.au phone: +61 8 8402 2379 fax; +61 8 8302 2252

Chinese Construction Industry: Governance Structure,

Procurement Systems and Culture

The construction industry plays a key role in Chinese economy. Chinese construction industry is one of biggest markets across the world. Rapid development of Chinese economy has created a huge rate of construction, especially in the development of public infrastructure. The 2008 Olympic Games also contributes to the local industry significantly.

This paper reviewed the current situation of Chinese construction industry such as: governance structure, procurement systems and the culture. Key participants in the local industry were also reviewed.

There are enormous opportunities for the foreign practitioners to enter the Chinese market. Apart from the huge market, the Chinese government nowadays allows more direct involvement of foreign firms in the local market. It is so vital for them to understand the current situation of the local industry as there are some recent changes and new developments.

Keywords: Construction industry, China, governance, culture