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**PLENARY ABSTRACT**

UNDERSTANDING REGIONAL DIVERSIFICATION USING INVENTOR COLLABORATION NETWORKS <i>Adam Whittle</i>	1
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**PARALLEL SESSION ABSTRACTS**

REGIONAL STUDIES INFRASTRUCTURAL (RE)TURNS <i>Jean-Paul Addie</i> <i>Michael Glass</i> <i>Jen Nelles</i>	1
DISRUPTIVE REGIONALISM? EXPLORING THE INSTITUTIONAL POLITICAL ECONOMY OF SUB-NATIONAL TRANSPORT PLANNING IN NORTHERN ENGLAND <i>Thomas Arnold</i>	2
THE OPTIMAL PROVISION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN SMART CITIES <i>Amitrajeet Batabyal</i> <i>Hamid Beladi</i>	2
USING LOCAL PUBLIC GOODS TO ATTRACT AND RETAIN THE CREATIVE CLASS: A TALE OF TWO CITIES <i>Amitrajeet Batabyal</i> <i>Karima Kourtit</i> <i>Peter Nijkamp</i>	3
PLAYGROUND FOR INNOVATION. THE INFLUENCE OF TERRITORIAL ANCHORAGE ON THE INNOVATION PROCESS IN THE OUTDOOR SPORT INDUSTRY <i>Anne Berthinier-Poncet</i> <i>Sandra Dubouloz</i> <i>Catherine Thevenard-Puthod</i> <i>Emilie Ruiz</i>	4
AEROSPACE MULTINATIONALS AS INSTITUTIONAL ENTREPRENEURS: A CROSS NATIONAL ANALYSIS OF UK AND AUSTRALIAN ENGINEERING SKILL DEVELOPMENT <i>Cassandra Bowkett</i>	5
WATER POVERTY AND AUSTERITY MEASURES: A CASE STUDY OF OFWAT <i>Fiona Calder</i>	6
UNDERSTANDING FAILURE TO ADOPT INNOVATION BY LOCAL GOVERNMENT FOR SERVICE PROVISION IN DEVELOPING COUNTRIES: A CASE OF NON-IMPLEMENTATION OF FAECAL SLUDGE MANAGEMENT IN ALAPPUZHA, KERALA <i>Paresh Chhajed</i> <i>Narayanan N C</i>	6
REGIONAL INFRASTRUCTURE USA; THE DEFINED SUB-STATE DISTRICT ADVANTAGE: 1968 VIRGINIA AREA DEVELOPMENT ACT; LOCAL AND REGIONAL PLANNING FOR ECONOMIC DEVELOPMENT; AND NORTHERN VIRGINIA - ONLY REGION IN AMAZON'S TOP 20 CITIES <i>Tom Christoffel</i>	7
NOT REGIONAL ENOUGH: THE ILLIANA EXPRESSWAY AND THE OUTER LIMITS OF CHICAGOLAND <i>Julie Cidell</i>	8

SOLUTIONS TO RESILIENCE CHALLENGES IN PLANNED COMMUNITIES: A CASE STUDY IN THE UK <i>Daniela Constantin</i>	8
INNOVATION SYSTEMS IN MID-SIZED CITIES: RESILIENCE, ADAPTABILITY AND MULTILEVEL GOVERNANCE <i>Charles Conteh</i>	9
REGIONS RISING: HEALTH AND AGTECH STARTUPS AS DRIVERS OF REGIONAL INNOVATION <i>Mary-Louise Conway</i> <i>Christine Jorm</i> <i>Gary Morgan</i> <i>Rod McClure</i>	10
PROTEST AND DEMOCRATIC POSSIBILITIES ACROSS REGIONAL GEOGRAPHIES OF DIFFERENTIATED RISK <i>Abigail Cooke</i> <i>Alice Huff</i>	10
BUILDING URBANITY IN THE 'ARTIFICIAL CITY': RESIDENT PERCEPTIONS AND EXPERIENCES IN MOROCCO'S NEW CITIES <i>Laurence Côté-Roy</i>	11
THE GEOGRAPHY OF SOCIAL CONNECTEDNESS AND KNOWLEDGE FLOWS IN THE UNITED STATES: NEW EVIDENCE FROM PATENT CITATIONS <i>Andreas Diemer</i> <i>Tanner Regan</i>	11
THE ATTRACTION OF KNOW-HOW: AN ANALYSIS OF THE RELOCATION OF KNOWLEDGE INTENSIVE BUSINESS SERVICES (KIBS) IN QUEBEC <i>Jean Dube</i> <i>Diego Cardenas</i>	12
SUBCENTERS AS DESTINATIONS: JOB DECENTRALIZATION, POLYCENTRICITY, AND THE EVOLUTION OF COMMUTING PATTERNS IN CANADIAN METROPOLITAN AREAS, 1996-2016. <i>Benjamin Duquet</i> <i>Cédric Brunelle</i>	12
THE URBAN SEA'S BLUE ECONOMY DEVELOPMENT POTENTIAL <i>Michaela Garland</i>	13
THE DYNAMICS BETWEEN INDUSTRY-SPECIFIC AND ENTREPRENEURIAL ECOSYSTEMS: LESSONS FROM MONTRÉAL'S AND TORONTO'S ARTIFICIAL INTELLIGENCE ECOSYSTEMS <i>Cristian Gherhes</i> <i>Chay Brooks</i> <i>Tim Vorley</i>	13
POWER CONSTELLATIONS IN METROPOLITAN GOVERNANCE: THE CASE OF LISBON, PORTUGAL <i>Jorge Gonçalves</i>	14
A COMPARATIVE STUDY OF REGIONAL COMPETITIVENESS IN LATIN AMERICA: KEY REGIONAL PERFORMANCE INPUTS <i>Sergio Gonzalez</i>	14
TYPOLGY OF TERTIARY EDUCATION IN EUROPE: A DATA-DRIVEN ALGORITHM APPROACH TO EXPLAIN LAGGARS AND LEADERS <i>Marcello Graziano</i> <i>Rosario Scandurra</i> <i>Kristinn Hermannsson</i> <i>John Gross</i>	15

TOWARDS ACHIEVING JUST TRANSITIONS IN THE COASTAL ZONE: IDEAS FROM THE RSA RESEARCH NETWORK ON SUSTAINABILITY TRANSITIONS IN THE COASTAL ZONE <i>C. Patrick Heidkamp John Morrissey Catherine Chambers</i>	15
WHAT PLACE FOR INNOVATION IN KNOWLEDGE-BASED URBAN DEVELOPMENT? THE CASE OF INNOVATION DISTRICTS IN NORTH AMERICA <i>Patrick Kilfoil</i>	16
OK COMPUTER: THE CREATION AND INTEGRATION OF AI IN EUROPE <i>Dieter Kogler Bernardo S. Buarque Ronald B. Davies Ryan M. Hynes</i>	16
SITE-SENSITIVE CONCEPTS FOR KNOWLEDGE-BASED URBAN DEVELOPMENT: THREE FINNISH CITY DISTRICT CASES <i>Jari Kolehmainen Ari Hynynen</i>	17
INNOVATING ON THE MARGINS: EVOLUTIONARY RESILIENCE AND POLICY CO-PRODUCTION <i>Peter Lee Sara Hassan Lisa Goodson Aleksandra Kazłowska</i>	17
SPATIAL KNOWLEDGE STRATEGIES <i>Pengfei Li Harald Bathelt</i>	18
KNOWLEDGE COLLABORATION ROUTINES FOR REGIONAL COMMUNITY-BASED OPEN INNOVATION: A COMMUNITY OF PRACTICE APPROACH <i>Jorge Tiago Martins</i>	18
LOW-TECH INSTITUTIONS, SERIOUS LEISURE SEEKERS AND USER INNOVATION IN THE ECONOMIC PERIPHERIES: THE HOBBYIST ENTREPRENEUR <i>Kirsten Martinus</i>	19
MARCH OF THE ROBOTS: REGIONAL NARRATIVES OF TECHNOLOGY INNOVATION AND PUBLIC SUPPORT FOR ARTIFICIAL INTELLIGENCE “PLATFORM POLICY” AS HISTORICAL CONTINUITY IN PITTSBURGH’S “EDS AND MEDS” ECONOMY <i>Andrew McGee</i>	19
FACTORS FOR P3 SUCCESS IN THE UNITED STATES <i>Erin McLaughlin</i>	20
AGAINST INNOVATION: TECHNOLOGY, POST-POLITICS, AND POLITICAL INACTION <i>Byron Miller Aida Nciri</i>	20
INSTITUTIONAL EXPERIMENTATION IN THE MONTRÉAL AEROSPACE CLUSTER: NEW CHALLENGES AND ROLES FOR REGIONAL AGENCIES <i>Lucie Morissette Christian Lévesque Sara Perez-Lauzon</i>	21
JUST TRANSITIONS IN THE COASTAL ZONE <i>John Morrissey C. Patrick Heidkamp</i>	21

NEW CITIES AND URBAN GOVERNANCE: EXPERIMENTS, INNOVATIONS, AND AMBIGUITIES <i>Sarah Moser</i>	22
DIGITALISATION, SPATIAL FIXITY AND URBAN LIVING <i>Anupam Nanda</i>	22
INFRASTRUCTURAL REGIONALISMS: AN INITIAL RESEARCH AGENDA <i>Jen Nelles</i> <i>JP Addie</i> <i>Michael Glass</i>	23
THE LABOUR PROCESS UNDER INDUSTRY 4.0: VARIEGATED PATTERNS OF SHOPFLOOR POLITICS AND TECHNOLOGICAL CHANGE <i>Daniel Nicholson</i>	23
INCREASED INNOVATION: A REGIONAL OPPORTUNITY OR CHALLENGE? <i>Peter O'Brien</i>	24
UNDERSTANDING THE DYNAMICS OF FOREST LAND USE CHALLENGES, CONSEQUENCES AND PROSPECTS FOR MITIGATION IN SIERRA LEONE <i>Adegboyega Otesile</i> <i>K. B. Sheriff</i> <i>J. Sao-Ngegba</i> <i>F. M. Lincoln</i> <i>M. Bangura</i>	24
UNLOCKING THE SKILLS AND TALENTS OF MIGRANTS AND REFUGEES <i>Conrad Parke</i> <i>Peter Lee</i>	25
(IN)SUBORDINATION AND THE REGIONAL SECOND CITY CONUNDRUM <i>Mark Pendras</i> <i>Charles Williams</i>	25
CREATIVE AND CULTURAL INDUSTRIES IN CROATIA <i>Ivana Rasic</i>	25
EFFECTIVE STAKEHOLDER ENGAGEMENT IN COASTAL TRANSITIONS: OUT WITH THE DAD MODEL AND IN WITH THE MOM METHOD <i>Miriah Russo Kelly</i> <i>Stephen Axon</i>	26
MODEL OF LAND VALUE CAPTURE (LVC) FOR TRANSIT-ORIENTED DEVELOPMENT (TOD) USING RATIONAL CHOICE INSTITUTIONALISM PERSPECTIVE: A CASE FROM JAKARTA, INDONESIA <i>Fadila Septiandiani</i> <i>Ibnu Syabri</i> <i>Haryo Winarso</i> <i>Delik Hudalah</i>	26
REGIONAL DEVELOPMENT LESSONS FROM/FOR AFRICA IN 2020 <i>Timothy Shaw</i>	27
EXPLORING THE CAPACITY FOR INNOVATION: THE CHANGING NATURE OF LOCAL AUTONOMY IN U.S. REGIONS <i>Thomas Skuzinski</i>	27
THE MANY ROLES OF CHANGE AGENCY IN THE GAME OF GREEN PATH DEVELOPMENT <i>Markku Sotarauta</i> <i>Teis Hansen</i> <i>Suyash Jolly</i> <i>Nina Suvinen</i>	28

FROM NEOLIBERAL STATE TO WELFARE STATE? SOLUTIONS TO OVERBUILDING IN ORDOS CITY, CHINA <i>Xing Su</i> <i>Zhu Qian</i>	28
HOW RADICAL INNOVATION EMERGES AND EVOLVES IN THE PERIPHERIES: THE CASE OF INDIE CINEMA SCENE IN NORTHERN PARISIAN <i>Raphaël Suire</i> <i>Hélène Morteau</i>	29
FROM THE ASHES TO THE GLOBAL SPOTLIGHT: MECHANISMS RENEWING REGIONAL PATH IN A PERIPHERAL LOCALITY <i>Nina Suvinen</i>	29
FORGET THE 3R'S (RECLAIMING, REVITALIZING, RESTORING): ENACTING HYBRIDITY AS URBAN WATERFRONT ASSEMBLAGE <i>Anne Taufen</i> <i>Ken Yocom</i> <i>Lisa Hoffman</i> <i>Nick Smith</i>	30
INNOVATION AT LOCAL ENTERPRISE PARTNERSHIP LEVEL: THE INTERACTION OF INNOVATION ASSETS, INFRASTRUCTURE, FUNDING, INSTITUTIONS AND GOVERNANCE <i>Abigail Taylor</i> <i>Rebecca Riley</i>	30
ADDRESSING CASTE, GENDER AND REGIONAL ECONOMIC DISPARITIES THROUGH ENTREPRENEURSHIP POLICY: AN ANALYSIS OF STARTUP INDIA <i>Anish Tiwari</i>	31
FROM CASUAL HOME-SHARERS TO COMMERCIAL OPERATORS: A COMPARATIVE ANALYSIS OF REGIONAL SHORT-TERM RENTAL MARKETS <i>David Wachsmuth</i>	31
INCUBATORS ARE MORE THAN PLATFORMS: CIRCULAR INNOVATION IN THE REGIONS <i>Matthew Wysel</i> <i>Derek Baker</i> <i>William Billingsley</i> <i>Lou Conway</i>	32
A MICRO-PERSPECTIVE OF REGIONAL KNOWLEDGE SPECIALIZATION: ARE YOUNGER FIRMS MORE LIKELY TO BREAK THROUGH PATH DEPENDENCE FOR REGIONS? <i>Jingyuan Zeng</i>	32
UNDERSTANDING COMMUNITY GOVERNANCE IN CHINA'S LAND EXPROPRIATION-INDUCED RESETTLEMENT NEIGHBORHOODS THROUGH REGIME THEORY: A SHANGHAI CASE <i>Shuping Zhang</i> <i>Zhu Qian</i>	33
RETHINKING THE CITY AND INNOVATION: A POLITICAL ECONOMIC VIEW FROM CHINA'S BIOTECH <i>Fangzhu Zhang</i> <i>Fulong Wu</i>	33
UNLOCKING THE CHAINS - GLOBAL LEADERS IN SMALL EUROPEAN COUNTRY <i>Pavla Zizalova</i>	33

## PLENARY ABSTRACT

### UNDERSTANDING REGIONAL DIVERSIFICATION USING INVENTOR COLLABORATION NETWORKS

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Networks have always played a formative roll in economic georgraphy (Glückler, 2007). In the past, the study of network dynamics has provided key insights into the transfer of knowledge between regions (Lengyel and Eriksson, 2016), firm (Juhasz and Lengyel, 2018) and for the evolution of collaborative networks (Coenen et al., 2004). But recent enquiry has shown that networks can occupy a more central position within evolutionary economic geography, chiefly in relation to the related/unrelated diversification thesis (Boschma, 2015). Synthesising the literatures of technological relatedness (Kogler, 2015) and knowledge networks (Bathelt and Glückler, 2003) this paper deconstructs inventor networks in order to examine the different effects of 'tie creation' and 'tie persistence' on regional diversification in Europe. This distinction is of paramount importance for economic geography as new connections *i.e.* tie creation, offers access to new sources knowledge, whereas persistent ties is synonymous with cohesion and technological lock-in. Data provided by the European Patent Office (1981-2015) forms the basis of our analysis. More tentatively, we make use of the detailed geographic (NUTS2) and technological (CPC) information contained within patent documents to map regional co-inventor networks throughout Europe and examine how these networks evolved over time. Our results reveal consideration variation in the branching opportunities *i.e.* diversification patters of European regions. For the most part, it is the central European countries which are capable of diversifying into new areas of the knowledge space. Over the period of analysis, inventors in these regions have continued to create new ties with other regions and this has functioned as conduit for knowledge recombination. Conversely, those regions characterised ty tie persistence are the more peripheral regions of Europe. Repeated collaborations have resulted in these regions becoming technologically myopic favouring the legacy of their technological past at the expense of searching o new avenues of diversification. Finally, in terms policy, we project our results onto the recently proposed smart specialisation thesis claiming that repeated inventor collaboration drives regional innovation systems towards isolation in the form of technological lock-in, which is threat for European innovation policy.

## PARALLEL SESSION ABSTRACTS

### REGIONAL STUDIES INFRASTRUCTURAL (RE)TURNS

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Following the recent 'infrastructural turn' in the social sciences, it is unsurprising that we are witnessing a proliferation of literature on regional infrastructure: as objects of analysis, as a methodological orientation, and as a research problematic that enables us to examine what regions are, how they are produced, and how they are governed. Yet there is also a long and rich history of infrastructure scholarship in regional studies. Regional Studies itself bears testament to the foundational role infrastructural systems play in shaping regional space and spaces of regionalism in conceptual and applied terms. In this paper, we introduce a virtual

special issue that gathers together seminal, path-breaking, and agenda-setting articles on regional infrastructure from the RSA's flagship journal. From Massey's landmark 1979 provocation, 'In What Sense a Regional Problem?', to Wiig and Silver's 2019 reflections on urbanization and the deployment of global infrastructure, we trace key debates, themes, and issues, focusing on the evolving discursive, methodological, political, and geographic concerns of research at the intersection of infrastructure and region (broadly considered). Our reflections on these intellectual histories provides a basis of an on-going dialogue about urban infrastructures and their past, present, and future place in regional studies, which is being pursued through the RSA Research Network on Infrastructural Regionalisms (NOIR).

## **DISRUPTIVE REGIONALISM? EXPLORING THE INSTITUTIONAL POLITICAL ECONOMY OF SUB-NATIONAL TRANSPORT PLANNING IN NORTHERN ENGLAND**

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In line with other developed nations, the UK has embarked on a programme of devolving transport planning powers to the sub-national scale. In Northern England, Transport for the North (TfN) was established in 2015 as a new pan-regional transport body tasked with developing a strategic transport plan for the North of England, alongside Northern Powerhouse Rail: a major strategic rail programme which aims to improve connectivity between the region's cities.

This paper analyses the political economy of core-periphery relationships between central and sub-national government by exploring the institutional dynamic between TfN and the Department for Transport (DfT). The highly centralised nature of infrastructure funding in England results in TfN adopting conflicting objectives, seeking both to disrupt the centre, via innovative transport modelling and appraisal techniques, whilst simultaneously acting to accommodate and reassure. The UK government's aim of spatially rebalancing the economy, by increasing productivity in Northern England, remains highly influential on the activities of transport planning bodies at the regional and local level, and alternative approaches to transport planning emphasising social and environmental agendas are marginalised.

Through interviews with policymakers and analysis of TfN's plan development process, this paper assesses how the governance of infrastructure planning shapes how politicians and planners in Northern England interact with the national tier. In doing so, the research develops understanding of how devolved, multi-level systems of planning shape the behaviour of those involved in delivering infrastructure, and how different centres of power assert themselves in the infrastructure planning process.

## **THE OPTIMAL PROVISION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN SMART CITIES**

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Regional scientists, urban economists, and researchers interested in studying technological change have increasingly begun to devote attention to the concept of a smart city. In this regard, the work of Caragliu et al. (2011), Peris-Ortiz et al. (2017), and Van den Buuse and Kolk (2019) tells us that a fundamental characteristic of smart cities is that they use information and communication technologies (ICTs) to improve urban functions in general and thereby provide a whole host of services designed to benefit the residents of such cities. For instance, Concilio et al. (2013) point out that ICTs can be used to promote sustainable lifestyles in and across emergent networks of what they call "smart peripheral cities" in Europe. Bakici et al. (2013)

focus on a particular European city, namely Barcelona, and document the ways in which this city has become a significant smart city by first coming up with and then implementing a “smart city initiative.”

Firmino and Duarte (2016) contend that even though ICTs can be useful in smart cities, there are circumstances in which these technologies enable surveillance and control in public areas and thereby undermine the usefulness of urban public spaces. Paulin (2016) discusses the extent to which the use of ICTs permits the government of a smart city to steer and control systems and what this ability means for what he calls “sustainable governance evolution.” After pointing to the many opportunities provided by ICTs to conduct smart urban policy, Kourtiti et al. (2017) demonstrate how these technologies have actually been used to effectively manage smartphone data systems. This and other such applications reveal the usefulness of ICTs in addressing a variety of problems that fall into the category of “complex urban management” issues.

Tekin (2017) concentrates on Turkey’s smart city projects and notes that such projects are successful only when adequate attention is paid to a project’s infrastructural dimension, its policy areas and scope, and to key performance indicators. Melo et al. (2017) concentrate on Lisbon, Portugal and show that ICTs can be used to provide guidance information to drivers and that the provision of such information reduces travel times and improves the efficiency of road use in this city. Finally, Batabyal and Nijkamp (2019) utilize a dynamic model and chronicle some of the ways in which ICTs can enhance economic growth in smart cities.

The various studies discussed above have certainly advanced our understanding of the many ways in which ICTs can and do enhance the functioning of smart cities. This notwithstanding, our central claim in this paper is that the extant literature on smart cities has paid no attention to the question of how ICTs ought to be provided and to the effects of alternate ways of providing ICTs.

Given this lacuna in the literature, we take advantage of the public good characteristics of ICTs and theoretically analyze an aggregate economy consisting of two smart cities in which ICTs can be provided in either a decentralized or a centralized manner. We first ascertain the efficient ICT levels that maximize the aggregate surplus from the provision of ICTs in the two cities. Second, we compute the level of ICT provision in the two cities in a decentralized regime in which spending on the ICTs is financed by a uniform tax on the city residents. Third, we determine the level of ICT provision in the two cities in a centralized regime subject to equal provision of ICTs and equal cost sharing. Fourth, we show that if the two cities have the same preference for ICTs then centralization is preferable to decentralization as long as there is a spillover from the provision of ICTs. Finally, we show that if the two cities have dissimilar preferences for ICTs then centralization is, once again, preferable to decentralization as long as the spillover exceeds a particular threshold.

## **USING LOCAL PUBLIC GOODS TO ATTRACT AND RETAIN THE CREATIVE CLASS: A TALE OF TWO CITIES**

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A key point made by Richard Florida in his many writings is that urban and regional planners ought to focus substantively on the activities of the creative class because the group of people comprising this class gives rise to ideas, information, and technology, outputs that are significant for the growth of cities and regions. Therefore, cities and regions that want to

prosper in this era of globalization need to do all they can to attract and retain members of this creative class who are, for all intents and purposes, the basic drivers of economic growth. Once one accepts Florida's (2002) contention that cities seeking to thrive economically need to attract and retain members of the creative class, the next logical question is "How are cities to do this?" Florida (2002, 2008) and other researchers such as Buettner and Janeba (2016) have answered this question by pointing out that local public goods (LPGs) such as cultural amenities, quality schools, and public transit are a key means by which cities can effectively undertake the dual "attract" and "retain" functions. Even though this point is now understood, to the best of our knowledge, there are no theoretical studies of the impact that the provision of LPGs by cities has on their ability to attract and retain members of the creative class.

Given this lacuna in the literature, our objective in this paper is to provide the first theoretical analysis of the provision of a LPG by two cities and the effect that this provision has on the ability of these two cities to attract and retain members of the creative class.

The remainder of the paper is organized as follows. Section 2 delineates our model of an aggregate economy that consists of two cities. As noted previously, the creative class consists of two types of members known as engineers and artists. Engineers are wealthier than artists and they also value the LPG more. Section 3 focuses on each city in isolation. Section 3.1 computes the marginal value and the marginal cost of the LPG for both engineers and artists. Section 3.2 determines the willingness to pay for the LPG on the part of the engineers and the artists. Section 3.3 studies the optimal provision of the LPG in each city when this provision is made on the basis of uniform contributions and majority voting. Section 4 concentrates on the case in which engineers and artists can migrate between the two cities. Section 4.1 examines which creative class members migrate. Section 4.2 first describes and then discusses a key property of the equilibrium distribution of the creative class in the two cities. Section 4.3 studies whether the provision of the LPG in each city is efficient. Section 5 analyzes the section 4 scenario just before migration. Section 5.1 asks how much of the LPG will be provided in each city when this provision is made on the basis of proportional contributions and majority voting. Section 5.2 studies whether any creative class member will now want to migrate. Finally, section 6 concludes and then suggests two ways in which the research described in this paper might be extended.

## **PLAYGROUND FOR INNOVATION. THE INFLUENCE OF TERRITORIAL ANCHORAGE ON THE INNOVATION PROCESS IN THE OUTDOOR SPORT INDUSTRY**

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Since the seminal work of Marshall on industrial clusters, further fueled in the 1980-90s by the works on the innovativeness of Italian industrial clusters, those of Porter or Saxenian on innovation clusters, the French school of Proximity or the regional innovation system theoretical approach, innovation management is increasingly concerned with territorial issues. Most studies offer a meso-analysis of the spatial influence on the innovation, adopting a network approach to understand how a specific localization can impact the innovation performance of organizations. Very few have investigated so far to what extent innovation processes are territorially embedded.

Following Davids & Frenken (2018), we concentrate our analysis on the influence of territorial anchorage on the innovation process of individual firms. Moreover, we introduce a dynamic dimension by analyzing this influence on the different stages of the innovation process.

The objective of this research is twofold: first, we identify the advantages and disadvantages of a strategic territorial embeddedness of innovation teams on the different stages of the innovation process; and second, we outline the levers used by these actors to overcome the obstacles of this embeddedness.

The outdoor sport industry is an interesting research field as the “playground” of most outdoor sports is closely bound to specific territories: mountains for hiking, skiing or trail-running, oceans for watersports... Many outdoor sport companies increasingly consider the interest of locating their innovation teams closer to the practitioners. However, they don't have a precise knowledge on how and when the territorial embeddedness influences their innovation process, although a strategic issue.

For this exploratory study, we adopt a qualitative, multi-case approach through three emblematic case studies in the French outdoor sport industry – Salomon, Décathlon and Raidlight – which deliberately chose to (re)locate their innovation centers close to their main practitioners. Our first results show that territorial embeddedness has a positive but variable influence on the different stages of the innovation process, revealing therefore that certain stages of the innovation process are more territorially embedded than others and that a balance has to be found between centralization and decentralization of innovation teams.

## **AEROSPACE MULTINATIONALS AS INSTITUTIONAL ENTREPRENEURS: A CROSS NATIONAL ANALYSIS OF UK AND AUSTRALIAN ENGINEERING SKILL DEVELOPMENT**

Cassandra Bowkett, HEC Montreal,

Looking at both the UK and Australia, this paper details how several aerospace multinationals are becoming increasingly experimental or entrepreneurial in how they engage with the sector skill system in the UK and Australia to ensure they have access to the professional engineering skills that they need. Organisational and institutional experimentation (Morgan, 2018) are terms used to identify change that occurs at a sub-national level and how firms, governments and other actors can shape their institutional environments, and may be able to change the role of institutions that operate in them (Kristensen and Morgan, 2012). Multinationals are argued to be able to be institutional entrepreneurs as they operate across different national business systems, and so are boundary spanners, experienced in operating with (and in) different institutional environments and are argued to be able to innovate around nationally bounded path dependence (Crouch, 2005, Crouch and Farrell, 2004). This innovation can result in either organisational or even institutional experimentation as these firms shape or change the role of sector or sub-national institutions. Examples of this have been detailed, and have found that multinationals may be able to create different conditions at a local level to those that are formed by the national architecture (Crouch et al., 2009). Research focussing on whether these firms can create these sub-national conditions in relation to skills is sparse (examples include Tregaskis and Almond 2017; Jurgens and Krywdzinski, 2016). This paper addresses this question, focusing on the relationships between aerospace multinationals and actors such as universities, professional associations and innovation bodies that form the sector skill and innovation system in the UK and Australia for professional engineers.

This research a case study approach, this paper is part of a larger comparative institutional IR study. 76 interviews were conducted between 2015-2018 with three aerospace MNCs in

Victoria, four aerospace MNCs in the UK and a number of actors in the skill system including academics in Universities.

This paper argues that many of the aerospace MNCs studied have (as institutional entrepreneurs), created firm based, sub-national skill systems that enable them to access the engineering graduates, and future engineering skills they need. These firms have achieved this by developing close relationships with a handful of universities in both countries. These relationships are often driven initially by the universities specialised research or teaching programmes. There are differences across the two country cases in the level of engagement between the multinationals studied and other actors in the skill and innovation systems. There are some examples of experimentation in both cases, though a greater number of collective examples were identified in the UK case, through government funded innovation infrastructure. While the multinationals studied do appear to potentially have the capacity to shape skill formation, the evidence suggests this is more likely to occur in both countries through firm level agreements. There was little evidence of these firms engaging in truly collaborative endeavours aiming to shape the wider skill formation system without government funding.

### **WATER POVERTY AND AUSTERITY MEASURES: A CASE STUDY OF OFWAT**

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By 2033, 35% of households in England and Wales are likely to be suffering from water poverty. Water poverty is most commonly defined as spending more than 3% of a household's net income on paying the water bill. Austerity measures have increasingly impacted upon citizen's ability to pay, led to issues such as hygiene poverty being on the rise in the UK which disproportionately affects women. In 2015 the Water Services Regulation Authority for England and Wales (Ofwat) introduced measures that require water companies in England and Wales to help 'vulnerable' customers. Experts have voiced their concern in the past about the available measures being able to assist those who are experiencing water poverty, believing that measures are highly restrictive and resemble nineteenth century approaches. In response to this, my research critiques the mechanisms that are in place to help people in water poverty (i.e. economic poverty) by using the case study of Northumbrian Water. It is an ethnographic study based at the company headquarters in North East England and a number of other methodologies are adopted from documentary analysis, open-ended interviews, observations and focus groups. This paper will present the findings of my study so far, critiquing the mechanisms, which are in place to help 'vulnerable' customers, and also questioning the representative-ness of those that are meant to advocate them.

### **UNDERSTANDING FAILURE TO ADOPT INNOVATION BY LOCAL GOVERNMENT FOR SERVICE PROVISION IN DEVELOPING COUNTRIES: A CASE OF NON-IMPLEMENTATION OF FAECAL SLUDGE MANAGEMENT IN ALAPPUZHA, KERALA**

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Unmanaged wastewater remains a challenge across the developing world. The new sanitation ladder being used to monitor progress under SDGs, acknowledges faecal sludge management (FSM) as an alternative to sewerage. The local governments (LGs) having the onus to provide services will have to adopt such innovations. However, not much is known about the adoption process or the challenges faced.

We present the case of Alappuzha, a picturesque, small coastal town in Kerala, India. Officials at all levels agree to the need of FSM; flat topography and high groundwater table make sewerage unfeasible. A judicial order of 2011 triggered the Government of Kerala (GoK) and the LG to take action; 8 years later, wastewater remains unmanaged.

We used qualitative interviews of officials with LG and GoK to assess the enabling environment for implementation of FSM. The policies of higher governments and governing regulations are very supportive. The Union and provincial governments are willing to finance a large part of capital expenditure and households are used to paying for services. Overlaps and gaps in the institutional architecture and weak capacity of the LG are hurdles that can be overcome. The strongest barrier is unavailability of land due to very high population density accompanied by resistance of local elected representatives to place sanitary infrastructure in their wards. This is despite an acclaimed decentralized SWM adopted by the town. We suggest a regional approach as surrounding villages equally need FSM. The GoK will probably have to showcase a model elsewhere to overcome their resistance.

**REGIONAL INFRASTRUCTURE USA; THE DEFINED SUB-STATE DISTRICT ADVANTAGE: 1968 VIRGINIA AREA DEVELOPMENT ACT; LOCAL AND REGIONAL PLANNING FOR ECONOMIC DEVELOPMENT; AND NORTHERN VIRGINIA – ONLY REGION IN AMAZON'S TOP 20 CITIES**

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Promotion of multi-jurisdictional regional approaches for development began in the 1920 in the United States. Metropolitan Councils of Government and Regional Planning Commissions were incentivized and promoted in States from 1950s on. Virginia's General Assembly adopted in 1968, recommendations of its 1967 Metropolitan Areas Study Commission, the Virginia Area Development Act (VADA), to meet the challenges of substate areas, both metropolitan and rural. This led to a state-wide system of defined Planning Districts (PD) with incentives for local government to organize and charter a new political subdivision, the Planning District Commission (PDC). Its task was to develop a District Comprehensive Plan, adopted by the Commission and localities. The single purpose authority was the only mechanism for multi-jurisdictional infrastructure, such as water, sewer or transportation. Where used, there being no mechanism to coordinate planning, significant mismatches occurred. Under the VADA, a Service District Commission would be chartered, having a directly elected body, and would replace the Planning District Commission to implement the adopted plan in a coordinated way, unlike authorities. By Executive Order in 1972, Governor A. Linwood Holton required all State agencies to use the 1968 defined Planning Districts or multiples, for their sub-state districts. This administrative action established a rich regional data base for agencies and the public with the PD number, 1 to 22, functioning as a FIPS region code. Though PDCs could only plan, not implement, local governments were wary of the Service District as a mechanism for consolidation. The planning emphasis proved to be the ultimate strength, as limited implementation was enabled in the 1980s, with the Service District option being eliminated by the 1995 Regional Cooperation Act update of the VADA. Sub-state District alignment led to Planning Districts achieving "Region as Place," exemplified by Northern Virginia, Planning District 8, the only multi-jurisdictional region in Amazon's top 20 Cities. The Virginia Department of Transportation has used the Planning District Commissions and geography for its planning and implementation since the 1990s. In the Amazon competition, the Governor, representing the interests of the Commonwealth, the State as a region, could coordinate State resources for and with the Northern Virginia local governments for this sub-State geographic region. The capacity to do so has been building since the 1960s. The workforce commuted for Northern Virginia extends deep into other Virginia Planning District regions, as well as other

parts of the Mid-Atlantic region, due in part to the population dispersion Civil Defense policies of the 1950s. It considered a rational response to the threat of a Soviet surprise nuclear attack on Washington, D.C. This response, used to some degree for every large city in the U.S., led to suburbanization of the country by 1970 and the automobile becoming transportation. This would not work in Europe, so it was tried and abandoned quickly. Systems of sub-State districts are common in the U.S., but the degree to which they have any coordination for regional infrastructure planning and implementation, as Virginia does, is an area where research could be productive for U.S. regional development policy.

### **NOT REGIONAL ENOUGH: THE ILLIANA EXPRESSWAY AND THE OUTER LIMITS OF CHICAGOLAND**

Julie Cidell, University of Illinois,

The far southwestern suburbs of Chicago have become home to the largest concentration of inland logistics activity in North America. While the Chicagoland region has prioritized logistics as a form of economic development, the growth in truck traffic to, from, and within this subregion has overwhelmed local roads and highways. A variety of new infrastructure projects have been implemented and/or proposed in response, from extended Interstate highway exit ramps to prevent trucks queuing on the highway, to a private toll bridge, to a new expressway meant to bypass existing chokepoints and enable the wider distribution of truck traffic between Illinois and Indiana.

The Illiana Expressway went through a complicated review process before being voted down by the state governor. Although there were many reasons for the highway's defeat—inadequate environmental review, a public-private partnership that placed too much risk on the public, and more—one key element was the inability of project proponents to gain regional support. At a distance of 45-50 miles from downtown Chicago, the corridor is no farther away than commuter rail lines to the north and northwest. But the south and southwest suburbs have always been underdeveloped, and so when regional organizations discussed including the Illiana in their long-term plans, the issue arose of whether this was truly a regional infrastructure project. This paper discusses the debate around the Illiana Expressway in terms of the discursive construction of the geographic limits of the Chicagoland region, including implications for other metropolitan areas.

### **SOLUTIONS TO RESILIENCE CHALLENGES IN PLANNED COMMUNITIES: A CASE STUDY IN THE UK**

Daniela Constantin, Bucharest University of Economic Studies, Romania

According to 2030 Agenda for Sustainable Development, making cities and human settlements „inclusive, safe, resilient and sustainable” represents one of the major goals, pointing out the close relationship between resilience and sustainability when it comes to rational urban development (Zhang and Li, 2018). Urban resilience contributes to this paradigm „the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience”(100 Resilient Cities). In order to ensure the capacity to respond the urban community needs and changing conditions, a two-pronged approach to urban systems pressures and challenges have to be applied in a pragmatic manner, based on a pre-emptive, integrated vision: on the one hand, the systemic problems of new settlements are solved in anticipation, „balanced and manageable” sites being developed; on the other hand, the current and ongoing weaknesses and stresses of the existing settlements are addressed (Jain, 2014). This vision suggests that

resilience-building in planned communities responds in advance, with lower costs, a series of resilience challenges such as housing affordability, access to labour markets, traffic congestion, access to public spaces, natural hazard risk to community, access to basic services (water, sanitation, electricity) compared to existing communities. However, while the planned communities are populated with their residents and develop, various resilience challenges appear, requiring adequate strategies, plans and concrete actions. This paper discusses the challenges that have to be faced in order to keep the master-planned communities resilient and the solutions proposed in this respect, requiring an integrated approach, using for the case study the story of Milton Keynes – Buckinghamshire, UK, the most famous 'new town' in Europe and one of the most cited examples of successful new towns in the world. Besides the study of a large number of significant documents, the research included field trips to Milton Keynes and interviews with city-planners during the author's visit to the University of Oxford in November 2018.

## **INNOVATION SYSTEMS IN MID-SIZED CITIES: RESILIENCE, ADAPTABILITY AND MULTILEVEL GOVERNANCE**

Charles Conteh, Brock University, Canada

Current research on innovation policy has coalesced around an understanding of the state as an “entrepreneurial” agent engaged in dynamic, strategic, visionary, courageous risk-taking mobilization of resources in pursuit of strategic industrial goals (Mazzucato 2018). Most studies of innovation examine the structure, density and diversity of industrial specialization within a given geographic area and economic cluster (Wolfe and Gertler 2016). Much of the literature has focused on large or “global” city-regions (Scott 2001; Storper 2014; McFarland 2018). Often overlooked in the literature, however, are smaller and mid-sized city-regions. The main objective of the proposed research, therefore, is to address the current gap in our understanding of innovation in mid-sized regions. The project is premised on the fact that innovation systems and processes in such regions possess peculiar characteristics, constraints and opportunities that warrant a closer investigation. Mid-sized city-regions over the past two decades have established their place as organic units of innovation systems in an increasingly complex global value chain of production and exchange (McFarland 2018). In particular, mid-sized cities with postsecondary institutions have emerged as hotbeds of innovation systems as local universities, colleges and anchor research institutions in these regions align their mission and mandates to strategically serve as conduits of industrial knowledge generation, dissemination and mobilization. A large factor influencing this trend in Canada is a plethora of federal and provincial programs aimed at spreading the dynamics of innovation beyond major centres like Toronto, Vancouver, Montreal and the like. Some of the main federal programs in Canada include the National Centres of Excellence (NCE), the Strategic Innovation Fund (SIF), and most recently the Supercluster Initiative. At the provincial level, in Ontario, key programs include the Ontario Centres of Excellence (OCE) and the relatively new Ontario Network of Entrepreneurs (ONE). The proposed paper will examine the main characteristics, strengths and challenges of these innovation programs in mid-sized city-regions.

The second objective of the proposed paper is to provide a dynamic analysis of innovation systems that moves beyond merely accounting for levels of research and development (R&D) expenditure or measures of economic growth and competitiveness. The discussion will focus instead on the strategic goals of the key stakeholders in an ecosystem, the character of local networks, and their engagement with relevant aspects of the broader national environment. The paper will draw insight from a body of work that analyzes the sustainability of innovation as a profoundly complex process (Room 2012; Clark 2014; Wolfe and Gertler 2016). Building on this literature, the paper will investigate the resilience and adaptive capacities of innovation

systems in midsized regions. The term resilience in this discussion refers to a city-region's elasticity to cope with major industrial perturbations while adaptability points to the exploitation of crises as opportunities, leading to positive transformation.

The empirical focus of the paper will be on two mid-sized city-regions in Ontario, Canada, namely, Niagara and Windsor. These two cases are both border-regions that have benefitted from the locational advantages of Canada-US cross-border trade and investment flows, but have also suffered economic decimation in the 1980s and 1990s due to global industrial restructuring. Since the early 2000s, both regions have pursued a plethora of economic reinvention strategies. The discussion will shed light on the spatial entity of these two nascent regional innovation systems, drawing lessons about their social dynamics and institutional assets and constraints. In particular, given the multitiered institutional character of innovation policy in Canada's federal system, the discussion will address fundamental questions about the extent to which innovative processes in mid-sized regions are locally embedded.

## **REGIONS RISING: HEALTH AND AGTECH STARTUPS AS DRIVERS OF REGIONAL INNOVATION**

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Christine Jorm, NSW Regional Health Partners, Australia  
Gary Morgan, MPT Innovation Group, Australia  
Rod McClure, University of New England, Australia

If the pulse of the Australian regional economy could be felt we might conclude that the heartbeat is slowing, it's been damaged by drought, farm consolidation and the movement of processing and manufacturing offshore. High rates of unemployment and depression characterize many communities. The New England North West region of Australia is one of a number of regional communities investing to revitalize, through an Incubator for startups. Innovation ecosystems can nurture, connect and multiply opportunities by creating an intentional community of founders to build scalable startups and new economy jobs. The SMART Region Incubator (SRI) is a leading regional incubator, supported by The University of New England, and the Federal and State Governments. The SRI has attracted expert mentors, corporate sponsors and investors to its operations to support early stage companies. A key strategy for this two-year old Incubator is to work with health and agtech startups across the region to help them scale up and grow and achieve success with their regional, national and international customers. The SRI continues to experiment with new ways of engaging talent, facilitating connections across sectors and attempting to fast-track innovation and job growth. This paper highlights what has been achieved to-date including the number of startups supported, investment attracted, revenues, and new jobs created in these sectors. The paper also captures the impacts of an incubator that are more complex to measure: shifting mindsets, increasing collaboration across sectors, inclusion and the capacity to think differently, and enact new and innovative health and agricultural practices to benefit regional communities.

## **PROTEST AND DEMOCRATIC POSSIBILITIES ACROSS REGIONAL GEOGRAPHIES OF DIFFERENTIATED RISK**

Abigail Cooke, University At Buffalo, SUNY, United States  
Alice Huff, UCLA, United States

This paper examines the highly uneven regional geography of immigration ordinances within the United States and how this patchwork of pro- and anti-immigrant policies shapes immigration-focused public protest. The paper draws on county-level policy choices about

cooperation with Immigration and Customs Enforcement (ICE) and the occurrence and news coverage of pro-immigrant protests since the last presidential election. Using descriptive statistics and content analysis, the paper provides evidence on protests in relation to the regional policy environment which shapes risk, particularly risk for immigrant protestors: where do the protests occur, what spurs them, and what justifications and claims are raised by protesters across differential geographies of risk. While there are protests in places across the policy spectrum, the catalysts and construction of justifications for the protests vary substantially depending on the policy environment. Local catalysts and appeals to the 'deservingness' of particular local resident migrants are more common in places with low levels of immigrant protections. National catalysts and more universal appeals are more common in places with higher levels of immigrant protections. Implications for the possibilities of contestation in general and the democratic participation undertaken by people whose legitimacy as civic actors is contested are drawn out.

### **BUILDING URBANITY IN THE 'ARTIFICIAL CITY': RESIDENT PERCEPTIONS AND EXPERIENCES IN MOROCCO'S NEW CITIES**

Laurence Côté-Roy, McGill University, Canada

In 2004, Morocco's Ministry for Habitat launched an ambitious national strategy to manage rapid urbanization, outlining the creation of 15 brand new cities across the kingdom. The 'Villes Nouvelles' program was implemented to mitigate the persistent nationwide housing crisis, relieve the proliferation of informal housing, and to meet national development goals. Morocco's ambitious city-building agenda is contextualized in the proliferation of new urban mega-developments in the Global South since the 1990s, as a strategy to attract investment and fast-track development. To date, there are few ethnographic studies focused on residents of new cities, leaving a considerable theoretical and empirical gap on ordinary residents' perceptions of these new urban spaces. Based on in-depth interviews conducted in 2016 and 2018 with residents, civil society organizations, planning professionals and government officials in three of Morocco's new cities (Tamesna, Zenata Eco-City and Benguerir Green City), this presentation asks what insights pioneering residents' accounts of daily life in new cities can provide for present and future new city projects in Morocco and across Africa. It suggests that resident interpretations of life and of urban space in new cities can provide one metric for the measurement of the new urban developments' 'success'. This presentation also reflects on the discrepancies between the intended goals and current achievements of new cities. Accordingly, it discusses the challenging development of a sense of belonging in a new city, the opaque and unresolved questions of urban governance and service provision, as well as the unachieved and problematic ideals of social diversity.

### **THE GEOGRAPHY OF SOCIAL CONNECTEDNESS AND KNOWLEDGE FLOWS IN THE UNITED STATES: NEW EVIDENCE FROM PATENT CITATIONS**

Andreas Diemer, London School of Economics and Political Science, United Kingdom  
Tanner Regan, London School of Economics, United Kingdom

This paper investigates the role of social connectedness of regions in knowledge transfers. We use an index of social connections based on the entire network of friendships in the US, while knowledge transfers are measured using US patent citations. We find that alternative proxies for social connections are inadequate to fully capture the social geography. The paper builds on previous work by conceptualising and estimating the specific causal channel of social connections on knowledge flows. We find a small, but significant effect of social connection on patent citation. A pair of counties moving from the 25th to the 75th percentile of the Social

Connectedness Index in our sample raises the probability of a patent citation between the two counties by 6.5 percentage points. Further, this effect appears to be stronger for citations of patents that are younger, and farther away in the technological space.

## **THE ATTRACTION OF KNOW-HOW: AN ANALYSIS OF THE RELOCATION OF KNOWLEDGE INTENSIVE BUSINESS SERVICES (KIBS) IN QUEBEC**

Jean Dube, Université Laval, Canada

Diego Cardenas, Université Laval, Canada

The relocation of companies is a major issue in the development of non-metropolitan areas. The departure of headquarters and jobs and their relocation to large cities present many challenges for public decision-makers especially in terms related to economic vitality. Knowledge intensive business services (KIBS) are innovation resources that regions could use to develop their territories and push for a conversion of economic activities. Development trajectories are thus shaped by two phenomena: i) the anchoring of firms in certain territories and ii) the movement of firms in space. KIBS searches for environments with local amenities and externalities that focus on innovation. Although these factors are mostly found in developed regions, KIBS are still located all throughout the Quebec territory. Yet the future destination of KIBS is uncertain and could be influenced by these factors as well.

Two important questions then arise: do business movements follow particular patterns in space? Does the differentiation/disparity in regional resource endowment explain the relocation of KIBS? This research aims to identify the origin-destination patterns of KIBS that move in the regions of Quebec in order to analyze the development of their trajectories and to identify the factors that would explain the restructuring of the KIBS geography. The empirical analysis is based on a construction of the relocation network and the estimation of a quadratic adjustment procedure (QAP) regression model in order to verify the influence of the physical (e.g. roads and air) and organizational (e.g. branch offices) and other demographic variables on the relocation of KIBS. The main contribution of this research lies in its use of a relational approach (that results from Network Analysis) to study the economic relations between regions.

## **SUBCENTERS AS DESTINATIONS: JOB DECENTRALIZATION, POLYCENTRICITY, AND THE EVOLUTION OF COMMUTING PATTERNS IN CANADIAN METROPOLITAN AREAS, 1996-2016.**

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Since the Second World War, the spatial structure of employment in major North American cities has shifted from predominantly monocentric compositions, with single city centres, to new polycentric arrangements involving a growing number of subcenters in the metropolitan periphery. This shift has not been without consequences for the commuting of workers, with an increasing dislocation of traditional commuting flows towards the city centre. Often poorly equipped with transit infrastructures and located at the junctures of highway interchanges, the rise of suburban employment zones has often been argued to generate growing environmental and traffic congestion problems in cities. However, the promises brought by new planning practices such as Transit-Oriented Development (TOD) has more recently put into question the presumed association between polycentricity and the unsustainability of metropolitan transport behaviors. While a vast literature exists on the evolution of metropolitan commuting patterns from the perspective of workers' place of residence (origin),

few studies have considered the evolution of transport behaviour at the place of employment (destination).

This study takes a different approach by looking at the evolution of commuting patterns between different types of employment zones in Canadian metropolitan areas between 1996 and 2016. Using data from the Canadian Census, we identify employment zones through the use of an employment ratio and propose a classification of subcenters based on k-means.

Our results support the hypothesis that subcenters, as destinations, strongly impact individual mobility behaviour. While suburban employment zones are generally associated with longer commuting distances and the predominance of motorized modes of transportation, we find important differences between the types of subcenters as well as emerging sustainable commuting behaviours in employment zones with TOD characteristics. Though these results do not directly assess whether differences stem from transformations in the workforce or the induction of the transit infrastructures over time, they raise the importance of considering employment zones in sustainable metropolitan transport planning.

### **THE URBAN SEA'S BLUE ECONOMY DEVELOPMENT POTENTIAL**

Michaela Garland, Southern Connecticut State University,

The Blue Economy concept is gaining momentum now more than ever as the United Nations, heads of state, and ocean experts and activists continue to gather and discuss how to sustainably use the oceans. Comprised of a range of economic sectors that include aquaculture, marine biotechnology, energy, maritime transportation/trade, tourism, environment, maritime construction, and maritime services, as well as their related policies, the blue economy sets out to determine whether the use of ocean resources is sustainable. With numerous plans and other blue economy initiatives being initiated in the United States regarding the blue economy potential in the Atlantic Ocean, Pacific Ocean, and the Great Lakes, it is important to also acknowledge the blue economy potential in Long Island Sound. As of recently both the Northeast Ocean Plan and Long Island Sound Blue Plan have emerged as initiatives to engage with the northeast's ocean and maritime resources sustainably. Long Island Sound holds high potential for collaboration within the maritime industry surrounding the blue economy concept because of its geographic proximity as an inland urban sea. Many studies done on the maritime industry in this area have only been at the state level. Therefore, using ENOW's county level data set and NOAA's zip-code business patterns, this paper's aim is to provide an estimate for the blue economy in Long Island Sound as a whole and to highlight the significance of a blue economy cluster for regional development.

### **THE DYNAMICS BETWEEN INDUSTRY-SPECIFIC AND ENTREPRENEURIAL ECOSYSTEMS: LESSONS FROM MONTRÉAL'S AND TORONTO'S ARTIFICIAL INTELLIGENCE ECOSYSTEMS**

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Chay Brooks, University of Sheffield, United Kingdom

Tim Vorley, University of Sheffield, United Kingdom

Recent years have seen a proliferation of research in the entrepreneurial ecosystems (EE) arena (e.g. Stam, 2015; Spigel, 2017; Acs et al., 2018). However, the concept has received significant criticism, especially for failing to distinguish itself from other similar concepts such as Regional Innovation Systems (RIS) (Alvedalen and Boschma, 2017) and for lacking clarity on interdependencies between different elements (Stam, 2015). Moreover, De Massis et al. (2018) argue that entrepreneurial opportunities come in various forms, including new technologies,

and are typically industry-specific, yet the underlying mechanisms whereby the industrial sector shapes entrepreneurial phenomena remain little understood. Thus, the inter-related dynamics of industry-specific ecosystems (ISE) and EE remain underexplored compared to more generic discussions of EE (Audretsch et al., 2018).

Through a case study of Montréal and Toronto, both international hubs for Artificial Intelligence (AI), and drawing on in-depth interviews with stakeholders and entrepreneurs from the two cities, the paper highlights the interdependencies between AI as an ISE and the generic EE. While EE and RIS are discussed as almost antithetical approaches to economic development, the paper shows that RIS and EE are in fact complementary in explaining how science-based innovation is turned into commercially viable innovation and how RIS contributes to regional economic growth through EE. Specifically, knowledge and innovation are the product of RIS and are generated within ISE, with the generic EE acting as a filter through which the knowledge and science-based innovation is commercialised. The paper also considers policy implications and directions for future research.

## **POWER CONSTELLATIONS IN METROPOLITAN GOVERNANCE: THE CASE OF LISBON, PORTUGAL**

Jorge Gonçalves, Instituto Superior Técnico - University of Lisbon, Portugal

Some metropolitan areas of the countries of the European Union have experienced enlargement and shrinking cycles with physical, social and economic consequences in any case. Alongside these cycles led by the financial and economic context, it is also possible to identify changes in the way these metropolitan spaces organize and govern in order to integrate a whole constellation of new interests and public, private and associative actors in the decision-making process or at least in the discussion of the best institutional designs for metropolitan governance.

This article intends to contribute to the clarification of this transformation framework of metropolitan areas, pressured by competition among themselves but also with large cities and metropolises, under the perspective of their governance, based on the Lisbon case (Portugal), presenting the preliminary results of the ongoing research project MetroGov3C - Metropolitan Governance in Lisbon Metropolitan Area in context of Conflict, Competition and Cooperation.

In addition to describing the MetroGov3C project and its objectives, the presentation will focus on the governance models that have been successively proposed in legal/institutional, academic/scientific or technical dimensions related to economic and political contexts and to identify the contradictions and dispersions that subtract efficiency and efficiency from metropolitan areas.

The multiplication of governance models according to the perspective and interest of the leading entities leads to inefficiencies in the global metropolitan system, identifiable in problems of mobility, housing and even environment.

## **A COMPARATIVE STUDY OF REGIONAL COMPETITIVENESS IN LATIN AMERICA: KEY REGIONAL PERFORMANCE INPUTS**

Sergio Gonzalez, Universidad Camilo Jose Cela, Chile

Latin America has high levels of regional inequality. Cross-country comparison is critical to understand the success of some regions and the stagnation of others. There are regions in Latin

America that consistently show high levels economic, social and environmental indicators. These regions have a high endowment of factors associated with regional competitiveness.

First, research establishes that regions such as the Metropolitan region in Chile compete for foreign investment while companies within regions like O'Higgins and Antofagasta regions in Chile compete for product placement in international markets. These types of competition take place mainly between countries, but there are no comparative studies of regional competitiveness between countries for Latin America. Secondly, this paper reviews the existing measurements of regional competitiveness within countries in Argentina, Colombia, Chile, Mexico and Peru identifying common factors in competitive regions. Finally, defining regional competitiveness as "the ability to offer an attractive and sustainable environment for firms and residents to live and work" (Annoni and Dijstra, 2017) and using an input-output competitiveness model (Aiginger and Firgo, 2017) a set of regional indicators is used to measure regional competitiveness in Chile, Colombia and Mexico. The measurement allows comparison of regional competitiveness and performance across countries. The research results show that these regions have a superior endowment of regional inputs such as human capital and technological infrastructure and allocate networks of high-tech of companies.

#### **TYOLOGY OF TERTIARY EDUCATION IN EUROPE: A DATA-DRIVEN ALGORITHM APPROACH TO EXPLAIN LAGGARS AND LEADERS**

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Rosario Scandurra, Autonomous University of Barcelona, Spain  
Kristinn Hermannsson, University of Glasgow, United Kingdom  
John Gross, Farmingdale State College, United States

Tertiary education institutions (TEIs) are often seen as (co)drivers of regional economic development through both demand-side (e.g. the spending of TEIs), and supply-side (e.g. creation of human capital, the graduates). Recent literature has provided mixed evidence on whether TEIs can sensibly influence region's human capital formation and attractiveness to students. In this work, we shed further light on how TEIs contribute to regional convergence in human capital formation by first typifying TEIs across four European countries, Germany, Italy, Poland, and the U.K., and by then quantifying the influence that each type of TEI has had on the ability of regions (NUTS2) to attract students and graduates, that is the TEI-type influence on regional convergence. The typification step utilizes and compare results from multiple specifications of a data-driven algorithm, Affinity Propagation (AP), using four multi-variable dimensions: size, internationalization, research output, and mobility. To estimate the effects of TEI types on graduates' formation and student attraction, we utilize AP results in a panel of NUTS2 regions from the selected countries for 2002-2012. Our work contributes to the ongoing research on the role of higher education in fostering regional economic development, and, methodologically, to the increasing attention to data-driven, threshold-less typification algorithms in social sciences.

#### **TOWARDS ACHIEVING JUST TRANSITIONS IN THE COASTAL ZONE: IDEAS FORM THE RSA RESEARCH NETWORK ON SUSTAINABILITY TRANSITIONS IN THE COASTAL ZONE**

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John Morrissey, Mary Immaculate College, University of Limerick, United States  
Catherine Chambers, University Centre of the Westfjords, Iceland

In 2015 John Morrissey, Cat Chambers and Patrick Heidkamp applied for and received a Regional Studies Research Network Grant focused on exploring Sustainability Transitions in

the Coastal Zone, which ran from 2016 to 2019 and was comprised of four research network workshops: the first workshop was held at the University Centre of the Westfjords in Ísafjörður, Iceland in January 2017, the second at Liverpool John Moores University in the UK in September 2017, the third one at Skálanes in Seyðisfjörður, Iceland and the fourth one at Mary Immaculate College/University of Limerick in Limerick, Ireland. A total of 50 researchers contributed to the network's goals of 1) interrogating the dynamics of coastal zones as economic spaces situated in a complex socio-ecological context and 2) catalyzing a discourse on new coastal economies, addressing problems of lock-in and system inertia in the current regime and exploring means to foster radical innovation for sustainable and resilience based coastal development.

The aim of this paper is to summarize the findings from the research network—through a collaborative mixed-method writing exercise of all workshop participants—and to advance a set of policy recommendations aimed at assuring a just transition in the coastal zone.

### **WHAT PLACE FOR INNOVATION IN KNOWLEDGE-BASED URBAN DEVELOPMENT? THE CASE OF INNOVATION DISTRICTS IN NORTH AMERICA**

Patrick Kilfoil, McGill University, Canada

Innovation has been positioned as a key driver for economic development at multiple spatial scales, including and particularly at the regional and city scales. However, the relation between urban settings and innovation is often assumed rather than tested empirically (Shearmur 2012). Several forms of policy intervention have been attempted to help foster urban innovation and enhance city competitiveness, such as the innovation district urban development model (Katz & Wagner 2014). Innovation districts are inner-city revitalization strategies that seek to assemble sufficient density and diversity of activities to foster innovation in a single neighborhood that symbolizes a city's innovative capacity and economic prosperity (Leon 2008). Using semi-structured interviews with government officials, economic developers, entrepreneurs, and real estate developers, this study examines three cases of innovation districts in Montreal, Toronto and Philadelphia. We find that the innovation district model is best understood as a multi-faceted discourse pertaining to innovation processes, real estate development, and public realm upgrading rather than a set of precise policy measures. Innovation is used to facilitate certain policy decisions and investment choices not only because it sustains a “successful” policy model, but also because it creates publics that are receptive to such policy ideas, a finding that echoes Baker & McCann (2018). More precisely, the placemaking strategies through which these spaces are created are premised upon the construction of new spatial imaginaries that rely on unsubstantiated claims regarding the urban nature of innovation and local capacity to enhance urban competitiveness in a globalized economy.

### **OK COMPUTER: THE CREATION AND INTEGRATION OF AI IN EUROPE**

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Bernardo S. Buarque, Spatial Dynamics Lab, University College Dublin, Ireland

Ronald B. Davies, University College Dublin, Ireland

Ryan M. Hynes, University College Dublin, Ireland

This paper investigates the creation and integration of Artificial Intelligence (AI) patents in Europe. We create a panel of AI patents over time, mapping them into regions at the NUTS2 level. We then proceed by examining how AI is integrated into the knowledge space of each region. In particular, we find that those regions where AI is most embedded into the innovation

landscape are also those where the number of AI patents is largest. This suggests that to increase AI innovation it may be necessary to integrate it with industrial development, a feature central to many recent AI-promoting policies.

### **SITE-SENSITIVE CONCEPTS FOR KNOWLEDGE-BASED URBAN DEVELOPMENT: THREE FINNISH CITY DISTRICT CASES**

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Ari Hynynen, Tampere University, Finland

In this paper, we make an effort to understand the ongoing urban development processes and, based on this, to outline some general principles for knowledge-based urban development. Our starting point is to identify the continuum of immaterial and material urban development that links together local economic and innovation policies as well as urban planning. Now, the latest phase seems to be focusing on the new urban areas and districts, which have been loaded with economic and innovative objectives included in smart urban strategies, accompanied by modern forms of local innovation policies.

Cities go through continuous transformation processes, manifested diversely in different times. Currently, the new urban districts are planned to be unique places within cities packed with different functions, interests and potentials. Consequently, the planning and developing processes of these districts should also be quite specific. In this respect, we suggest that these areas need site-sensitive development concepts that binds the different sub factors together making the development process and its outcomes more coherent and manageable. The sub factors of the site-sensitive development concept are as follows: 1) Connection with other urban development processes, 2) Planning and development process, 3) Functional and physical core of the district, 4) Smart innovation, 5) Financing and investment models and 6) Marketing and communication.

In this paper, three city districts in three Finnish cities are analysed from the perspective described above. The analysis is based on standard case study methodology and several data sets (e.g. thematic interviews, planning documents).

### **INNOVATING ON THE MARGINS: EVOLUTIONARY RESILIENCE AND POLICY CO-PRODUCTION**

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Sara Hassan, City REDi Birmingham Business School, United Kingdom

Lisa Goodson, University of Birmingham, United Kingdom

Aleksandra Kazłowska, University of Birmingham, United Kingdom

State rescaling and statecraft theory suggest that global financialization poses a threat to social and spatial justice whilst fuelling in the homogenisation of place. Meanwhile, a decade of austerity welfare politics has resulted in an increasing disconnect between citizens and urban transformation as the financialization of city-regions increases and local-regional governance in England is fragmented and under invested. In this environment, the concept of resilience has been advanced within public policy discourse as a mechanism to insulate citizens and communities from austerity and other anthropogenic and natural shock events. Whilst the relevance of resilience to regional systems may be in the realm of 'slow burn' shock events, there remain questions as to the relevance of the concept and how an evolutionary approach would work. Collaborative planning and co-production of knowledge requires innovations in the reconfiguration of our public institutions and the re-purposing of governance architectures

that were fashioned in a different era. This paper draws on research for a three-year Urban Innovative Actions (ERDF) project on poverty and urban transformation. The results point to the unlimited potential for universities as mechanisms with leverage to connect citizens to assets across scales and empower local communities to challenge the basis of how cities and regions are transformed. The paper therefore provides a perspective on the limitations of asset based community development in addressing the rescaling of our cities and regions and how innovation in the co-production of knowledge can provide a visible pathway for evolutionary resilience across scales.

## **SPATIAL KNOWLEDGE STRATEGIES**

Pengfei Li, HEC Montréal, Canada

Harald Bathelt, University of Toronto, Canada

The paper explores how firms strategically leverage the uneven geography of knowledge. Based on spatial sources of knowledge and modes of connection, we propose a typology of four spatial knowledge strategies, knowledge replicating, knowledge scouting, knowledge connecting, and knowledge integrating. Further, we develop four propositions on their cluster configurations and argue that replicating and scouting strategies occur in a context from clusters to non-clusters and from non-clusters to clusters, respectively, while connecting and integrating happen in a context from clusters to clusters. We conduct interviews with 49 headquarter-subsidiary cases of MNEs between Canada and China and adopt the fuzzy-set comparative qualitative analysis to find strong evidence to the propositions. The four spatial knowledge strategies reveal the diverse practices of firms to profit from knowledge difference over space. Complementing the spatial clustering tendency of knowledge, a well-documented process in economic geography, the paper suggests there are also forces by firms to modify or consolidate the uneven geography of knowledge.

## **KNOWLEDGE COLLABORATION ROUTINES FOR REGIONAL COMMUNITY-BASED OPEN INNOVATION: A COMMUNITY OF PRACTICE APPROACH**

Jorge Tiago Martins, The University of Sheffield, Information School, United Kingdom

In this paper, I propose to examine the routines that support the dynamics of knowledge collaboration when organisations engage in regional community-based open innovation. I adopt a Community of Practice lens to explore the dynamic nature of knowledge collaboration in two European industrial territories: the Sheffield City Region - an international advanced manufacturing hub - and the Norte Region of Portugal, where a fundamental driver of regional smart specialisation is the textile and footwear industry. The inquiry is driven by the questions of what organisational routines support knowledge dynamics at the organisation-region boundary, and how do such dynamics shape knowledge collaboration outcomes. Data was collected over a 6-month period through semi-structured interviews with 45 actors of the Regional Innovation System - firms, Higher Education Institutions, Research and Development centres, business incubators, local executive boards, chambers of commerce and industry - in both regions. Following a multiple-case analysis approach, we conducted within-case and cross-case analyses in order to inductively identify emergent themes and to formulate theoretical constructs. The result of the analysis is a relational model that examines knowledge collaboration and explains how specific governance and social identity construction routines contribute to knowledge translation and knowledge transformation. It identifies the routines that organisations enact when engaging with the region, and theorises the role played by those routines in helping to overcome the complexity inherent to corresponding knowledge boundaries. These findings contribute to the regional innovation literature and simultaneously

to the literature on the management of knowledge collaboration, particularly at the intersection of organisation and community.

### **LOW-TECH INSTITUTIONS, SERIOUS LEISURE SEEKERS AND USER INNOVATION IN THE ECONOMIC PERIPHERIES: THE HOBBYIST ENTREPRENEUR**

Kirsten Martinus, University of Western Australia, Australia

At its most simple, economic geography sees markets as institutions which shape and are shaped by place and space through various social and economic processes. However, it has tended to focus on particular spatialities of co-location and agglomeration, and narrowly-defined knowledge economy industries of services, advanced manufacturing, and high-tech. This is largely as due to an urban bias in research and policy, where the urban core experience dominates discourse on industry change with little known of peripheries in either a geographic or industry sectoral perspective. The industries focused on tend to be associated with large corporations or R&D facilities in medium to high-tech industries over low-tech industries (which are often in resource-related sectors, small businesses and in the spatial peripheries). Low tech is thought of as contributing less to economic development, therefore attracting less policy attention and support. Despite this, low-tech plays a major role in OECD economies and is increasingly subject to pressures of globalisation and technological change.

Low-tech is generally characterised as an industry with high level maturity and slow change rate. Such factors tend to also facilitate actor embeddedness in traditions and methods, which makes institutional change and the introduction of innovative practices difficult. This paper explores the limited theorising to date on institutional disruption and innovation in low-tech, specifically focusing the role of non-firm actors in low-tech science-based industries (LTSBI). It does so through a case study of the revival and restructuring of the Western Australian beekeeping industry, much of it a product of the activities of hobbyists. It finds that the current models of user innovator (prosumer, user entrepreneur, social or institutional entrepreneur) are unable to explain how hobbyists have evoked this transformation. It introduces the hobbyist entrepreneur as an alternative user innovator type, highlighting their importance to industrial reform particularly in the low tech science-based sector.

### **MARCH OF THE ROBOTS: REGIONAL NARRATIVES OF TECHNOLOGY INNOVATION AND PUBLIC SUPPORT FOR ARTIFICIAL INTELLIGENCE “PLATFORM POLICY” AS HISTORICAL CONTINUITY IN PITTSBURGH’S “EDS AND MEDS” ECONOMY**

Andrew McGee, Carnegie Mellon University, United States

Over the past two decades, public officials, journalists, regional planners, and private sector leaders from Pittsburgh, Pennsylvania, have sought to portray the Rust Belt city as an ascendant high-technology hub, an Appalachian peer of San Francisco, Seattle, or Austin. Media depictions, municipal policy, and promotional efforts by prominent local non-profit foundations all seek to parlay the region’s “eds and meds” reputation for information-driven fields of health care, higher education, insurance, and banking into a “start up”-focused culture that prioritizes technological innovation as the basis for regional economic development. Though not dissimilar to “innovation agendas” in other U.S. metropolitan areas, this recent Pittsburgh campaign has in unconventional ways historicized and contextualized the region’s bid for prominence in artificial intelligence, robotics, and software development by portraying the former “Steel City” as a inevitable driver of a digital, algorithmic future precisely because of its contested, checkered past as a site of resource extraction, industrial decline, environmental degradation, and labor strife. As an historian of technology, policy, and culture,

I seek to examine this rhetorical framing, one that self-consciously embraces the complexity of the region's technological past while frequently overlooking, obfuscating, or misrepresenting select historical parallels to present day consequences of "innovation-driven" regional policy. What can Pittsburgh's embrace of a portion of its technological past tell us about its present-day infrastructure for innovation? And what do the elements omitted from the region's public narrative indicate about that strategy's frailties?

## **FACTORS FOR P3 SUCCESS IN THE UNITED STATES**

Erin McLaughlin, University of New Orleans, United States

As the infrastructure of the United States continues to decline and be underfunded, many policymakers at the federal, state and local levels have begun to look to public-private partnerships (P3s) as an alternative delivery method and a way to move infrastructure projects forward quicker, and with funding that is not coming exclusively from government sources. One of the hallmarks of President Trump's infrastructure agenda has been an increase in the use of P3s. However, public-private partnerships are not well-suited for every project type. This brings us to the question of what kinds of projects make the most sense for states and localities to pursue under P3 delivery? This paper explores that the answer does not lie in seeking revenue streams, but rather the main reason P3 projects work is because they are structured correctly, in a flexible manner, and follow best practices and good governance—which is so necessary for the complex delivery types included in P3 project delivery.

## **AGAINST INNOVATION: TECHNOLOGY, POST-POLITICS, AND POLITICAL INACTION**

Byron Miller, University of Calgary, Canada

Aida Nciri, University of Calgary, Canada

We question the increasingly common policy focus on technological innovation, arguing that innovation discourses often represents a form of post-politics, based on a double fiction. First, a temporal fiction: the claim that we do not yet have solutions to our current problems. Second, a social fiction: the notion that markets are the best mechanism to solve our most pressing problems. We illustrate this argument with two empirical examples in which technological innovation is taken as a panacea and status quo socio-material relations are maintained while promoting technical fixes. We use the examples of 1) a district heating system using a pilot solar thermal storage system and 2) a smart climate resilience strategy heavily relying on the promotion of electric vehicles. Both examples are from Alberta, Canada. In the district heating case a modest technological success led to inaction: the project failed to be replicated due to exorbitant costs, and de facto policy became to wait for the technology to become competitive rather than adopt currently feasible alternatives. In the climate resilience case heavy emphasis on electric vehicles was coupled with inaction on urban sprawl and auto-centricity more generally. In both cases policies emphasizing innovation served to divert attention from and/or block alternative solutions that were readily available. Instead of robust policy debate around transforming urban governance and socio-material infrastructure, innovation discourses were associated with acceptance of the status quo, and hope for future technological solutions.

## **INSTITUTIONAL EXPERIMENTATION IN THE MONTRÉAL AEROSPACE CLUSTER: NEW CHALLENGES AND ROLES FOR REGIONAL AGENCIES**

Lucie Morissette, HEC Montréal, Canada

Christian Lévesque, HEC Montréal, Canada

Sara Perez-Lauzon, HEC Montréal, Canada

This paper examines the evolution of regional institutions in the development of the aerospace industry in the Montreal agglomeration. Over a thirty years period these regional agencies have played a leading role in the consolidation of this industry and the creation of various governance mechanisms to foster private sector innovation. Greater integration into the global economy and the restructuring of the value chain have substantially modified the dynamic within the cluster and force regional agencies to engage in new domains and fields to influence industrial policies. They have been involved in the creation of a network of institutions to upgrade skills at the sectorial level and in initiative to increase small and medium enterprises innovative capabilities.

Drawing on interviews conducted with a variety of actors (workplace and industrial union representatives, managers, government officers, etc.), the paper highlights how regional agencies take on and combine new roles to support private sector innovation. This process requires the construction of alliances with new actors at various scale and the development of new capabilities and resources to cope with the challenges innovation in this global industry. In order to play a leading role in policy development and implementation at the subnational level, these agencies need to build new narratives that bridge the multiple interests at play.

## **JUST TRANSITIONS IN THE COASTAL ZONE**

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C. Patrick Heidkamp, Southern Connecticut State University, United States

Coastal areas represent a frontline in the battle for sustainability. Many coastal communities have suffered from regional economic restructuring or remain under pressure from concentrations of development and resource over-exploitation, while coastal ecosystems are subject to overuse, loss of resilience and increased vulnerability. However, the coastal zone remains neglected in discussions of low carbon transition, with much contemporary discussion of transition being either aspatial or based on implicit assumptions about spatial homogeneity. In addition, the social context for low-carbon transition has been afforded insufficient study and to date. It is clear however that the challenge of a low-carbon economy raises fundamental questions of equity and social justice as well as of environmental protection. Citizens at the lower end of the socio-economic spectrum are likely to be worst affected in any low-carbon transition due to higher proportional energy burdens and more constrained capacity to absorb additional costs, for instance. The low-carbon transition therefore poses some fundamental questions:

- What does transition mean for communities in coastal zones, confronted by both climate mitigation and adaptation pressures?
- Are there vulnerable groups, exposed by adaptation and transition processes?
- How can procedural justice principles be applied in vulnerable coastal communities to address adaptation and transition imperatives?

This paper aims to address these research questions through an examination of socio-technical transitions with an explicitly socio-spatial focus in the context of coastal communities. The paper will focus on how coastal communities have responded to coastal adaptation pressures

to date and will interrogate community visions of and support for, low carbon transition pathways. Principles of distributive and procedural justice, community participation and 'Just Transitions' will be applied to provide a novel and much needed socio-spatial perspective on sustainability transitions processes in coastal communities, providing new insight into varying socio-spatial vulnerabilities and capabilities in the context of coastal sustainability.

## **NEW CITIES AND URBAN GOVERNANCE: EXPERIMENTS, INNOVATIONS, AND AMBIGUITIES**

Sarah Moser, McGill University, Canada

The number of new city projects continues to grow as they become normalized as a key economic development strategy in emerging economies. Many of these new city projects are being developed as part of special economic zones that function as extraterritorial states of exception and many are experimenting with new forms of urban governance on an unprecedented scale. New city projects represent entrepreneurial urbanism taken to an extreme. Instead of mayors and elected city councils they have CEOs and corporate management structures. They also have, or inspire to have, different legal systems than the rest of the country.

This paper examines the tensions, ambiguities, and innovations related to urban governance in three new city projects: King Abdullah Economic City and Neom, both in Saudi Arabia, and Forest City in Malaysia. Each represents an attempt to engineer a privatized experimental zone with liberal economic and social policies that are both global and shaped by a variety of local forces. I examine the consequences of innovations in governance through the three new city projects and provide insight into who benefits from this arrangement and who is disadvantaged.

## **DIGITALISATION, SPATIAL FIXITY AND URBAN LIVING**

Anupam Nanda, Henley Business School, University of Reading, United Kingdom

Spatial fixity is a key attribute of the built environment and plays a crucial role in shaping up cities and communities. The locational desirability of a spatially fixed structure depends on the physical distance (from the places of economic interests). The notion of distance has also evolved over the years due to technological innovations in transport. Especially, over the last couple of decades, internet penetration has greatly improved across the world and digitalisation of services has intensified with much implications for the notion of physical distance, especially within the traditional framework of the bid rent theory. With the advent of 5G and AI-based capabilities, cities are expected to increasingly rely on digital platforms to provide services and manage service deliveries. While the uptake is of varying level across the world due to inequality in resource endowment and institutional framework, the direction of change is quite strong. This, however, entails significant challenges and implications for locational sorting. As individuals and organisations adapt to the digital world, their behavioural intensity will crucially shape the future cities. In this paper, we develop a theoretical model of urban living behaviour of the citizens. With a primary survey analysis, we examine several testable hypotheses within a discrete choice modelling framework. The results shed light on the theoretical predictions and highlight the areas of concerns.

## **INFRASTRUCTURAL REGIONALISMS: AN INITIAL RESEARCH AGENDA**

Jen Nelles, Hunter College, CUNY, United States

JP Addie, Georgia State University, United States

Michael Glass, University of Pittsburgh, United States

We are in the midst an infrastructural epoch that belies the notion of infrastructure as a staid or neutral set of technical solutions to the challenges of late-capitalist society. As cities within the Global South develop new infrastructures for transportation, information and communication, sanitation, and habitation, cities across the Global North are holding different discussions that often revolve around infrastructural decline and austerity. What global conversations about growth and decline, investment and disinvestment have in common is the sense that our collective urban futures are grounded in the capacity of infrastructural systems to sustain them. Research across the social and policy sciences has taken heed of these discussions in ways that is referred to as an ‘infrastructural turn’ that attends to infrastructure as a central element that makes the urban possible in its myriad forms. Calls to open the ‘black box’ of infrastructure are emerging as a major concern, both as a focus for empirical research and as a methodological orientation. This paper seizes on this infrastructural ‘moment’ to lay out a critical research agenda that focuses on the regional dimension of these debates about the production of urban and metropolitan space. Specifically, it outlines why we need to interpret, through a regional lens, (1) how we study and produce knowledge about infrastructure; (2) how infrastructure is governed across or constrained by jurisdictional boundaries; (3) how we ‘see like a region’ and, crucially, who gets to drive the construction of spatial imaginaries through infrastructure; and (4) how individuals and communities differently experience and ‘live’ the region through infrastructure. This paper provides a foundation for the RSA Network on Infrastructural Regionalism that will explore these questions over the next three years (2019-2022).

## **THE LABOUR PROCESS UNDER INDUSTRY 4.0: VARIEGATED PATTERNS OF SHOPFLOOR POLITICS AND TECHNOLOGICAL CHANGE**

Daniel Nicholson, Cardiff University, United Kingdom

The last several years have seen a renewed interest in the impact of technological change on work, employment and labour markets. And while much of the research in this area has focused on the potential for widespread technological unemployment or even ‘jobless future,’ the available empirical evidence does not suggest a drop in aggregate employment. There is, however, evidence that suggests that technological work reorganisation may be a powerful disruptive force. This research examines how new technologies are reorganising work in the manufacturing sector where a set of technologies known as Industry 4.0 have the potential to dramatically reorganise work in coming years. The core theoretical framework for this research labour process theory. Labour process analysis, with its emphasis on the point of production and the agency of workplace actors, mitigates against macro focus and technological determinism of much of the extant literature. Presenting the preliminary findings of comparative research from workplaces in the aerospace sector, I describe how three explanatory factors are shaping the way that Industry 4.0 is reshaping the organisation of work in the sector. The first two factors fall within the tradition purview of labour process theory: (1) managerial factors (economic, technological, discursive); and (2) trade union factors (resistance, cooperation, consent). The third explanatory factor ‘extends’ traditional labour process ‘beyond the shopfloor’ to examine regional factors such as industry policy and innovation networks through a synthesis with Theodore and Peck’s variegated capitalism.

## **INCREASED INNOVATION: A REGIONAL OPPORTUNITY OR CHALLENGE?**

Peter O'Brien, CURDS, Newcastle University, United Kingdom

Innovation is seen as a core element of national, regional and local economic strategies designed to improve productivity through the formulation and diffusion of new ideas, products and processes. The UK government, as set out its recent national industrial strategy, has made a commitment to spend an additional £7bn on R&D and innovation activity between 2017 and 2022. Whilst this new investment represents a significant response to addressing major and complex economic, societal and environmental challenges, there are valid questions as to the extent to which such funding may reproduce geographical inequalities. The spatial imbalances in R&D and innovation activity within and across the UK have been determined and reinforced, to a large extent, by a series of national science and research policies that have long prioritised 'excellence' over 'place' and applied types of research. Using the case study of the Yorkshire region, in the UK, this paper, currently at a formative stage, seeks to illustrate some of the tensions and contradictions between a highly-centralised and notionally 'aspatial' national innovation system and the nature of a particular innovation environment that exists in an 'under-performing' region. The analysis examines the roles and contributions of specific institutions, such as universities, which are seen as the principal actors in stimulating innovation in a region where there has long been limited private sector investment in R&D and innovation.

## **UNDERSTANDING THE DYNAMICS OF FOREST LAND USE CHALLENGES, CONSEQUENCES AND PROSPECTS FOR MITIGATION IN SIERRA LEONE**

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Sierra Leone population is 7,092,113 and 70.73% of this depend on forests for livelihoods. Agriculture's contribution to GDP in 2017 was 60.07% (Statistics Sierra Leone, 2018); but unsustainable land uses deepens deforestation and land degradation. This paper summarizes five baseline studies on factors and actors that potentially undermine forest health and rural development; with Kori Chiefdom as case study and focused on climate change vulnerability, farming systems, alternative livelihoods, gender inclusivity and review of implementation instruments. Data collected using semi-structured questionnaires, personal observations and oral interviews were analysed using descriptive and content analyses. Results revealed all communities have only natural forests, seasonal streams and at least 58.00% of respondents from each community were farmers; at least 67.00%, 35.00% and 15.00% engaged in charcoal production, firewood collection and wooden-poles extraction respectively as alternative livelihoods. At least 57.40% of farmers practised shifting cultivation; at least 54.50%, 78.70% and 80.60% cleared 1-to-2 acres of land yearly; using each acre for up to 5years before encroaching more forests and practiced slash and burn land preparation systems respectively. Farmers opined their activities were responsible for soil nutrients loss. The communities have no health clinics, public power supply, economic assets, suffer irregular rainfall and dry spells; including pests and diseases regimes. Furthermore, 100.00% of youth, most men (above 50.00%) and 100.00% of women affirmed that women attended forest user group meetings, held positions and active in forest governance. Finally, regulatory instruments and implementation are weak.

## **UNLOCKING THE SKILLS AND TALENTS OF MIGRANTS AND REFUGEES**

Conrad Parke, United Kingdom

Peter Lee, Univeristy of Birmingham, United Kingdom

Austerity together with globalisation have provided the conditions for superdiversity and growing spatial inequalities at a local and regional scale in the UK. In the West Midlands, for example, the West Birmingham and Smethwick neighbourhoods are a recognised area of superdiversity and high deprivation. These local outcomes are a manifestation of the effects of policies, conflicts and citizen entitlements (panarchy) at global, national and regional level which reflect exploitation of capital and labour across scales (state rescaling). This paper reflects on innovations in evolutionary regional resilience and mechanisms to connect deprived communities to regional assets. The paper provides evidence from an ERDF funded project (USE-IT! 2016-19) aimed at contributing to the Inclusive Growth agenda by helping recent arrivals with overseas health qualifications in this community overcome the barriers to finding work in the health sector. After just two and a half years, the project is now supporting over 200 doctors, paediatricians, nurses, midwives, bio-medics, anaesthetists, pharmacists etc. and expanded to work with four hospital trusts not just one. Through this process USE-IT! has also tested and proven an innovative approach to local partnership working that is helping to unlock a large public sector asset as an “anchor institution” which is now benefiting the surrounding community across a number of social issues. Through this process the USE-IT! provides lessons that could be applied to other institutions and innovations in inclusive growth which this paper provides evidence and mechanisms to contest the notion that such places do not matter (Rodrigues-Pose, 2018).

## **(IN)SUBORDINATION AND THE REGIONAL SECOND CITY CONUNDRUM**

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This paper introduces and develops the concept of 'regional second cities.' We start by situating the regional second city concept in the urban development literature and connecting with emerging efforts to understand and improve conditions in 'overlooked' cities. We emphasize that in contrast to the decades of urban crisis, when most cities of the global north shared similar experiences (or at least concerns) of decline and abandonment, the current post-crisis urban experience is more variegated. Some cities have clearly shifted from combating decline to managing growth, while others continue to struggle for solvency and stability. It is this landscape of uneven development, with its particular guiding logics and path dependencies, that has inspired scholars to break from the focus on a handful of global winners and bring new attention to previously overlooked cities and urban spaces. After outlining these efforts, we then emphasize the importance of approaching such cities relationally and of calling into question the standard terms of success as often framed in urban development research and practice. A case study of the city of Tacoma, WA, is used to exemplify the regional second cities concept.

## **CREATIVE AND CULTURAL INDUSTRIES IN CROATIA**

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In recent time creative and cultural industries (CCIs) have been recognised as an important sector in boosting economic welfare through generation of jobs, revenues and cultural engagement. The most widely accepted definition of the creative industries delineates this sector as “those industries which have their origin in individual creativity, skill and talent and

which have a potential for wealth and job creation through the generation and exploitation of intellectual property” (DCMS, 1998:3). In the EU, CCI contribute to 4.2% of GDP and account for 3.3% of the EU’s working population (EY, 2014). A number of governments around the world have begun to introduce policies to support and promote the development of the sector. However, a solid understanding of the economic potential of CCI is still lacking. The aim of the paper is to objectively assess the importance of creative and cultural industries (CCI) in Croatia in the economic structure and its contribution to economic growth and employment, to assess the structure of legal forms in the private sub-sector of CCI and accordingly use appropriate databases. CCI-policy context and major growth barriers to CCI face in the context of knowledge-based economy. On the basis on main findings of this research a set of policy recommendations of strategic importance will be formulated.

### **EFFECTIVE STAKEHOLDER ENGAGEMENT IN COASTAL TRANSITIONS: OUT WITH THE DAD MODEL AND IN WITH THE MOM METHOD**

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The coastal zone is home to around forty percent of the world’s population. Coastal areas are environmentally sensitive, and hold immense economic importance for human development. Furthermore, increasing population density and climate change impacts are forcing transitions in these coastal areas. The concept of the “coastal zone” depicts the ecological interface between marine and terrestrial environments. This space serves as a geographical reference point for investigating the social, economic, and political factors that interact in the process of sustainable environmental management. Emerging literature on coastal transitions in the face of climate change establishes a need for identifying appropriate stakeholder engagement processes for long term coastal transition management (Heidkamp and Morrissey, 2019; Berkes, 2019). To date, many coastal transitions engagement efforts have relied on a top down -- decide, announce, defend -- “DAD” model (Susskind & Elliot, 1983), which has been largely ineffective in providing meaningful opportunities for stakeholder engagement (Dietz and Stern, 2008; Moser and Boykoff, 2013; Berkes, 2019). As such, in this paper we present a “MOM” model for stakeholder engagement that can be applied in coastal transitions contexts. The MOM model is comprised of three stages. First, M - maximize stakeholder capacity to participate. Second, O - organize stakeholders into established systems and subsystems. And third, M - manage stakeholders adaptively through transition cycles. In this paper we present the theoretical foundations of the MOM model and describe practical ways in which this model can be applied. The need for effective stakeholder and public engagement is clear, and the MOM model provides a simple framework for exploring how to effectively engage stakeholders in long term, coastal transitions efforts.

### **MODEL OF LAND VALUE CAPTURE (LVC) FOR TRANSIT-ORIENTED DEVELOPMENT (TOD) USING RATIONAL CHOICE INSTITUTIONALISM PERSPECTIVE: A CASE FROM JAKARTA, INDONESIA**

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The study aims to explain institutional phenomena on Land Value Capture (LVC) mechanism occurred in the development of TOD Dukuh Atas, Jakarta. It uses a qualitative approach in which the primary data obtained from the key stakeholder interviews and the secondary data

acquired from theoretical review, agency data, and popular media. Unlike the previous researches which emphasizing the methods, experience, calculation of LVC, this study generates an institutional model of LVC comprises input of value creating and value managing of actors' cooperation, the process of value arrangement with rational choice institutionalism perspective, and outcomes of the arrangement process by perceiving at actors' benefits. As an analysis tool, the model combines several theories, such as: land development process model, rational choice institutionalism, Transit-Oriented Development elements and Land Value Capture. To elaborate the results, content analysis is used by applying coding and interpretation methods. The study reveals that referring rational choice institutionalism perspective for formulating LVC model is relevant, since both theories purpose to obtain optimal economic values/ benefits. The actors' strategy/ in considering and approving the deal reflects the most rational option. However, the decision is not balanced with the risk calculation that may arise. The application of rational choice institutionalism theory can trigger the profit-oriented action thought by actors, without breaking the rules/ agreement of cooperation. However, it is also found that the developer acts irrationally in the involvement of the cooperation mechanism. We argue that a non-rational approach can better explain the behavior and actions of developers.

## **REGIONAL DEVELOPMENT LESSONS FROM/FOR AFRICA IN 2020**

Timothy Shaw, Carleton U & UOttawa, Ottawa, Canada,

Africa is a quarter of the world's states. It has also been a centre for regional organisations, especially as so many are land-locked. Its myriad inter-state institutions are increasingly matched by innovative formal & informal non-state networks for digital communication, energy, health, logistics, migration, trade, water...and conflict, drugs, extremism & guns. So, for example, Somalia is not a simple fragile or failed state; its community & economy are a significant part of the political economy/culture of Ethiopia & Kenya & multi-generational diasporic hosts like Canada & the US. And some leaders on the continent are now advancing the notion of 'developmental regionalism' as well as developmental states like Botswana & Mauritius. African analysts/think-tanks point to the increased range of choices presented by the BRICS/EMs & new foundations like Gates & Ibrahim. Together these may improve the prospects for African 'agency' in 2020.

## **EXPLORING THE CAPACITY FOR INNOVATION: THE CHANGING NATURE OF LOCAL AUTONOMY IN U.S. REGIONS**

Thomas Skuzinski, Virginia Tech, United States

The capacity for innovation at the regional scale often depends on the voluntary participation of local governments in various forms of intergovernmental relations, such as interlocal coordination, interlocal agreements, and voluntary regional organizations. The capacity for local governments to function as participants in regional innovation depends on the autonomy they have been granted by higher levels of government, both on its objective legal construction as expressed in constitutions, legislation, and regulation, and on the subjective perception of this autonomy by administrative and political actors in local government. This study uses document analysis of state law to trace recent developments in the objective construction of autonomy, and explores subjective perceptions of autonomy via analysis of survey data collected from local government actors in United States metropolitan areas from 2017-2019. Contemporary research on this topic in the U.S. is especially salient because of ongoing efforts to recentralize autonomy away from the local level via reactive and punitive preemption of local legislative actions by state governments, and the chilling or freezing of local policymaking

that is expected in the wake of such efforts. Results show that a significant gap exists in local actors' understanding of autonomy, that perceptions of autonomy vary in systematic ways with local government institutional and socioeconomic characteristics, and that the tendency toward underestimation of local autonomy suggests fears of chilling effects are justified.

### **THE MANY ROLES OF CHANGE AGENCY IN THE GAME OF GREEN PATH DEVELOPMENT**

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Teis Hansen, University of Lund, Sweden

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The rapidly expanding stream of path development studies is recognizing that translating the observations from past paths to conscious path creation necessitates linking agency conceptually to path development frameworks. In this paper, we argue for the need to focus more explicitly on the roles various actors play in the evolution of regional economies. The assumed roles of many actors have been highlighted but not specified further in the literature. We argue that there is a need to reach beyond the generic definitions and general descriptions of policy organisations and explore whether similar actors take on different roles, and whether different actors may assume similar roles. The main objective of the paper is to compare the roles actors play when enhancing green path development. The following are the main research questions: (a) Which are the core organisations in green path development in Nordic regions; (b) what their main roles in relation to other actors are; and (c) what are the differences and similarities in agency in the case regions. We scrutinize these questions in the context of green path development in six Nordic regions in three countries (Denmark, Finland, Sweden). Empirical analysis is based on 77 interviews with key actors as well as the analysis of secondary data consisting of all the main policy documents.

### **FROM NEOLIBERAL STATE TO WELFARE STATE? SOLUTIONS TO OVERBUILDING IN ORDOS CITY, CHINA**

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Overbuilding is a noteworthy phenomenon in 21st-century China. To date, despite the burgeoning inquiries on the causes of overbuilding, few studies have probed the government's solutions to this detrimental phenomenon in China. This study aims to fill this gap by employing a case study research strategy, focusing upon Ordos City, China, where severe overbuilding has occurred. Employing an analytical framework of state intervention, and drawing on the concepts of neoliberal state and welfare state, this study examines the solutions carried out by Ordos municipal government to mitigate overbuilding in the post real estate bubble period since 2012. It is found that Ordos government has adopted a hybrid mode of governance, containing welfare-oriented measures such as purchasing idle land from developers and exchanging unsold new apartments with dilapidated houses for the poor, and market-oriented policies such as employing preferential policies to attract investment, as well as city marketing and branding, to tackle overbuilding. These efforts from the local government have ameliorated the issue of overbuilding to some extent, and Ordos city has witnessed a sign of recovery in its real estate market. Theoretically, it sheds light on the resilient and path-dependent features of neoliberal governance in the Chinese context, and validates the existence and effectiveness of local welfare state in China. It also indicates that neoliberal state and welfare state are not mutually exclusive, and that strong state capacity in the case of Chinese cities can be beneficial to initiate timely interventions to correct government and market failures such as overbuilding.

## **HOW RADICAL INNOVATION EMERGES AND EVOLVES IN THE PERIPHERIES: THE CASE OF INDIE CINEMA SCENE IN NORTHERN PARISIAN**

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Artistic field, broadly considered, is largely concerned with collective innovation (Suire et al, 2018) and socio-spatial dynamics. Artists need some geographical proximity to co-shape artistic production with peers, critics and audience (Sgourev, 2013). Some scholars claim that some urban neighborhood typified by singular amenities (Silver and al, 2011) can nurture creativity by favoring mixing and collision between artistic fields and artists (Currid, 2005; Jacobs, 1969). To sum-up, the emergence of an artistic movement considered as a collective innovation is strongly correlated to an urban neighborhood atmosphere, socio-spatial interactions and formal/informal interactions between peers, between artists and their audience. However, nor the abundant literature related to cluster dynamics or the more recent one related to innovation and entrepreneurial ecosystems (Alvedalen and Boschma, 2017) can fully capture these complex socio-spatial dynamics even if a sustainable creative city framework (Cohendet and al, 2010) already gives use some useful insights. What we suggest here, is a new category of entrepreneurial ecosystem very closed to the way a "musical scene" is organized (Straw, 1991) and this explorative paper comes-up with the following research question: How a localized emergent and deviant artistic movement (indie french double vague cinema) can emerge and survive in the vicinity of a strong and vertically cultural cinema industry (Europa Corp) in Northern Parisian? The answers take the form of some new proposals for evolutionary economic geography and innovation studies literature related to collective innovation-based system.

In a nutshell, we claim that a deviant artistic movement needs three interrelated peripheries or marginalities (Grabher, 2018) ; a geographical ones, a structural ones and a cognitive ones. But to collectively test and explore what could make sense for an audience, a user or a neglected king (Grabher et al, 2009) is always a partner in crime to prototype some useful pieces of art. The "Scene" is a fruitful framework to understand and follows up the emergence and trajectory of a localized artistic movement strongly based on bricolage (Suire, 2019 ; Levi-Strauss, 1962). This is a collective say to initiate new innovative pathways. The legitimation journey (Cattani et al, 2017) of this indie cinema double vague is based on a detailed qualitative research case and introduce regional studies readers a way to figure out the emergence of a deviant collective innovation.

## **FROM THE ASHES TO THE GLOBAL SPOTLIGHT: MECHANISMS RENEWING REGIONAL PATH IN A PERIPHERAL LOCALITY**

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This paper focuses on factors promoting a transition from the periphery of the economy to the centre of the bio- and circular economy. The key question is, which mechanisms facilitate the shift from a stagnated regional industrial path to a successful path of green growth. The current literature on regional path development emphasizes factors like industrial structures with inter-industry relatedness and regional assets but also extra-regional institutional influences and institutional agency.

The empirical case, a small forest bio-economy town in Central Finland, reveals that mechanisms to enhance regional green growth are multiple. The engine of the change is the green turn in the forest industry. While certain regional factors, like natural resources, are important, external factors are crucial in the transition. Overall, actors operating across multi-

scalar and multi-sectoral systems push the regional path into a direction of green economy and regional success.

The results are based on semi-structured interviews of the key local, regional and national level private and public actors, and a survey of relevant policy documents, organizational material and statistics.

For the policy-makers, the results may provide insights into how a less favoured region may facilitate a transition from a stagnated position to the path of green growth.

### **FORGET THE 3R'S (RECLAIMING, REVITALIZING, RESTORING): ENACTING HYBRIDITY AS URBAN WATERFRONT ASSEMBLAGE**

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The urban literature on waterfront development and spatial change is shaped by consistent potentials - and critiques. On the one hand, waterfronts are treated somewhat uncritically as sites of economic reinvention, environmental restoration, and social evolution; they are celebrated as nodes of transformative success in the sustainable urban development of cities and regions. On the other hand, political economy and environmental sustainability critiques have earned a trenchant counter-position, emphasizing claims to the waterfront rooted in social, economic, and environmental justice that are frequently elided and ignored by dominant patterns of capital accumulation and urbanization. In the experience and study of actual urban waterfronts, we find more complicated phenomena, where spaces are imagined, performed, and produced in multi-layered and sometimes-surprising ways. As sites of rapid change and investment, nevertheless bound by their spatial histories, local cultures, and the vagaries of changing global and regional conditions - environmental and otherwise - waterfronts offer a generative, variegated, and deeply empirical perspective on the potential usefulness of assemblage thinking for urban theory and development.

### **INNOVATION AT LOCAL ENTERPRISE PARTNERSHIP LEVEL: THE INTERACTION OF INNOVATION ASSETS, INFRASTRUCTURE, FUNDING, INSTITUTIONS AND GOVERNANCE**

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Research indicates innovation is essential for long-term economic growth. Nesta (2014) estimated 63% of productivity growth in the UK in 2000-2008 developed either directly or indirectly from innovation.

The importance of 'place' in innovation is the focus of increasing research. Porter's diamond on national competitive advantage stressed the role of external factors (Dögl et al., 2012, p.193). Growing recognition exists of the importance of local and regional factors in influencing innovation and competitiveness (OECD, 2007; Doloreux & Panto, 2004).

This paper will further research into how Local Enterprise Partnerships (LEPs) in England drive innovation. Established in 2010, LEPs are business-led partnerships linking the private sector, local authorities, higher and further education and the voluntary sector to drive growth strategically in local communities. Research has mapped local comparative advantages in innovation (BIS, 2015) and benchmarked how the general environment varies between LEPs

(e.g. concerning place attractiveness, workforce, entrepreneurship) (Smart Specialisation Hub, 2018). However, understanding of the challenges regional institutions face in securing external funding, and the strengths of LEPs' approaches is limited.

Based on qualitative interviews with LEPs across England and analysis of grants awarded to LEPs and their partners, this paper will examine the relationship between entrepreneurial and innovative activity at LEP level, funding secured, innovation assets, infrastructure and institutional setups. It will highlight challenges different LEPs face securing funding in view of contrasting institutional setups and resource availability. It will stress the role of research-intensive universities in securing innovation funding, emphasising the importance of universities in local economic development.

### **ADDRESSING CASTE, GENDER AND REGIONAL ECONOMIC DISPARITIES THROUGH ENTREPRENEURSHIP POLICY: AN ANALYSIS OF STARTUP INDIA**

Anish Tiwari, Dublin City University, Ireland

A high rate of entrepreneurial activity, in general, has been shown to create economic value and promote economic development. This article evaluates how the entrepreneurship promotion programme entitled 'Startup India' is challenging the deep-rooted concerns of caste, gender and regional economic inequality in India. The under-representation of Women, Scheduled Castes (SC), Scheduled Tribes (ST) and Other Backward Classes (OBC) in the entrepreneurial sphere has often been attributed to their limited social networks, lack of access to quality education, finance and mentorship. This article tracks the developments made in Startup India Programme since its inception in 2016, and finds that through the creation of an online networking platform, an open access knowledge bank and free online courses, Startup India has not only been successful in improving the representation of the otherwise marginalized sections of the society but has also helped in addressing the challenge of regional disparity by encouraging start-ups in economically and socially underdeveloped regions. This article also reports a shift in society's perception of entrepreneurship as a career alternative, and documents the bureaucratic, financial and legal hurdles which have hampered the roll-out of the programme. The article concludes with a discussion of the future directions of the policy, drawing on the election manifesto of the re-elected Modi government.

### **FROM CASUAL HOME-SHARERS TO COMMERCIAL OPERATORS: A COMPARATIVE ANALYSIS OF REGIONAL SHORT-TERM RENTAL MARKETS**

David Wachsmuth, McGill University, Canada

Scholarly interest within urban and regional studies on the dynamics of short-term rental (STR) markets has exploded in recent years, with researchers examining the housing impacts of Airbnb and its competitors, the STR regulatory landscape, and the increasingly ubiquitous community opposition to STRs. However, this research is still largely dominated by single-city case studies, which has made understanding the broader regional dynamics of STRs elusive. How do central-city, suburban, and peripheral STR markets interact? What are the key principles of variation among and between these spatial contexts?

This study addresses this deficit through a comparative analysis of all short-term rental activity in North America from 2016-2018. Using new methods for spatial analysis of big data, I examine key empirical patterns and identify mechanisms of regional convergence and divergence in short-term rental activity.

## **INCUBATORS ARE MORE THAN PLATFORMS: CIRCULAR INNOVATION IN THE REGIONS**

Matthew Wysel, University Of New England, Australia  
Derek Baker, University of New England, Australia  
William Billingsley, University of New England, Australia  
Lou Conway, University of New England, Australia

Platforms broker valuable interactions between actors in multisided markets. Regional incubators and accelerators typically channel government initiatives to start-ups who provide value to consumers and institutional investors. Neither model is circular as value multiplies linearly to platform providers or consumers. A novel approach to nonlinear value multiplication through the creation of mid-chain circular economies is presented. Stakeholders for incubators and accelerators are united around shared valuations of operational and marketing data as they seek greater utilisation of existing programs while government and corporate investors seek validation of impact from participants and graduates. Results from a recent pilot of the University of New England (UNE) SMART Data Community (SDC), a community of researchers, entrepreneurs and producers, are presented to contextualise the ongoing creation of a broader circular economy of incubators. This innovation framework, SMART Region.Systems, builds on the success of BANKS.Community, the online meeting place for the people, data and products of the UNE SDC by facilitating innovation bridges between accelerators and incubators. Participants and graduates are guided through validated pathways enabling members of SMART Region.Systems to non-linearly multiply impact across regions, attracting and transferring value-carrying entrepreneurs. This paper presents the conceptual framework and method behind the formation of the UNE SDC and SMART Region.Systems. Considerations for the scaling of circular innovation in regional labour markets and regional sustainability of innovation are also discussed.

## **A MICRO-PERSPECTIVE OF REGIONAL KNOWLEDGE SPECIALIZATION: ARE YOUNGER FIRMS MORE LIKELY TO BREAK THROUGH PATH DEPENDENCE FOR REGIONS?**

Jingyuan Zeng, Sun Yat-Sen University, China

This paper aims at identifying the potential for regions to break through path-dependence and create new paths for knowledge specialization. Based on a case study of 336 cities and 627 patent classes in China, this paper links the above two types of regional knowledge specialization to the micro-dynamics of firms – particularly focusing on their path-breaking initiatives across different life cycle stages. Results from two-way fixed-effect linear probability models shows that the key to de-lock regions from path-dependence ultimately lies in the innovative intensity of young firms. As firms reach more mature stages, they are less likely to depart from their core technological competences, inducing a higher degree of path-dependence in regional knowledge specialization. Taking into account the unique characters of economic transition in China, this study further discovers that the privatization of ownership structure boosts the path-breaking potential of young firms. The conclusions provide new in-sights for the latecomers that also seek to “leap” out of peripheral areas and occupy a more central position in technological change.

## **UNDERSTANDING COMMUNITY GOVERNANCE IN CHINA'S LAND EXPROPRIATION-INDUCED RESETTLEMENT NEIGHBORHOODS THROUGH REGIME THEORY: A SHANGHAI CASE**

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Zhu Qian, University of Waterloo, Canada

In China, to meet the demand of urban land use in expansive urbanization, the state expropriates rural land from village collectives and offers compensation and resettlement arrangement to landless villagers. Villagers' uneasy life transformation in land expropriation-induced resettlement neighborhood (LEIR) brings administrative challenges to government apparatuses and community agents. By employing a case study in suburban Shanghai, this research uncovers the rationale and effectiveness of community governance in LEIR neighborhoods. Through the conceptual lens of regime theory, the study demonstrates how formal governmental entities (the central state and subnational governments) and grassroots community regulative forces (residents' committee, homeowners' association, and property management agency) work across boundaries to form regimes in order to tackle the governance challenges associated with villagers' life transformation in resettlement neighborhoods and to facilitate villagers' life changes with regard to residency and social identity. The formation of such governing coalitions is achieved through the establishment of stable relationships that focus more on solidarity, coordination, and mutual support for accomplishing difficult administrative goals than on hierarchical power leverages aiming at intensifying social control from below. Accordingly, governmental authorities and grassroots community associations share resources, blend capacities, and extend institutional embeddedness to help relocated villagers to become members of urban society.

## **RETHINKING THE CITY AND INNOVATION: A POLITICAL ECONOMIC VIEW FROM CHINA'S BIOTECH**

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Fulong Wu, University College London, United Kingdom

The city is arguably where innovations concentrate. Agglomeration and diversity are two major explanations for why innovations concentrate in the city. Existing studies tend to focus on knowledge dynamics, in particular interfirm networks, while paying insufficient attention to the process of urban development in which knowledge dynamics are materialized. We concur that the city itself does not possess such a power for innovation (Shearmur, 2012). Rather, it is an arena where various actors exert impacts on knowledge dynamics. In a view from China, we reveal why bio-tech innovations concentrate in particular places and what political economic processes contribute to such concentration. We highlight the need for a political economic analysis in economic geographical studies of innovation.

## **UNLOCKING THE CHAINS - GLOBAL LEADERS IN SMALL EUROPEAN COUNTRY**

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Lead firms are usually linked to metropolitan regions, advanced economies and/or highly innovative tech industries and global giants. This view on global lead firms is rather simplified and biased, though dominating the literature. The aim of our paper is to look for more particular lead firms that have taken a lead position of particular GPN even contrary to the general conditions and to what the theory would predict. Investigating 35 detailed case studies of various lead firms located in metropolitan regions, rural areas, focusing on service, traditional

or tech industries we look in detail into what are the factors that have enabled these firms to break the chain and climb the ladder up to the lead position and what patterns can be found among these factors regarding the type of upgrading, path-dependency and/or industry and knowledge base.

	<b>A</b>	Hudalah, 26 Huff, 10 Hynes, 16 Hynynen, 17	
Addie, 1, 23 Arnold, 2 Axon, 26			<b>J</b>
	<b>B</b>	Jolly, 28	
Baker, 32 Bangura, 24 Batabyal, 2, 3 Bathelt, 18 Beladi, 2 Berthinier-Poncet, 4 Billinglsey, 32 Bowkett, 5 Brooks, 13 Brunelle, 12 Buarque, 16		Kazlowska, 17 Kilfoil, 16 Kogler, 1, 16 Kolehmainen, 17 Kourtit, 3	<b>K</b>
	<b>C</b>	Lee, 17, 25 Lengyel, 1 Lévesque, 21 Li, 18 Lincoln, 24	<b>L</b>
Calder, 6 Cardenas, 12 Chambers, 15 Chhajed, 6 Christoffel, 7 Cidell, 8 Constantin, 8 Conteh, 9 Conway, 10, 32 Cooke, 10 Côté-Roy, 11		Martins, 18 Martinus, 19 McGee, 19 McLaughlin, 20 Miller, 20 Morissette, 21 Morrisey, 15, 21 Morteau, 29 Moser, 22	<b>M</b>
	<b>D</b>		<b>N</b>
Davies, 16 Diemer, 11 Dube, 12 Dubouloz, 4 Duquet, 12		Nanda, 22 Narayanan, 6 Nciri, 20 Nelles, 1, 23 Nicholson, 23 Nijkamp, 3	
	<b>G</b>		<b>O</b>
Garland, 13 Gherhes, 13 Glass, 1, 23 Gonçalves, 14 Gonzalez, 14 Goodson, 17 Graziano, 15 Gross, 15		O'Brien, 24 Otesile, 24	
	<b>H</b>	Parke, 25 Pendras, 25 Perez-Lauzon, 21	<b>P</b>
Hansen, 28 Hassan, 17 Heidkamp, 15, 21 Hermannsson, 15 Hoffman, 30		Qian, 28, 33	<b>Q</b>

	<b>R</b>	Thevenard-Puthod, 4 Tiwari, 31	
Rasic, 25 Regan, 11 Riley, 30 Ruiz, 4 Russo Kelly, 26			<b>V</b>
	<b>S</b>	Vorley, 13	
Sao-Ngegba, 24 Scandurra, 15 Septiandiani, 26 Shaw, 27 Sheriff, 24 Skuzinski, 27 Sotarauta, 28 Su, 28 Suire, 29 Suvinen, 28, 29 Syabri, 26		Wachsmuth, 31 Whittle, 1 Williams, 25 Winarso, 26 Wu, 33 Wysel, 32	<b>W</b>
	<b>T</b>	Yocom, 30	<b>Y</b>
Taufen, 30 Taylor, 30		Zeng, 32 Zhang, 33 Zizalova, 33	<b>Z</b>