

# **An ESRC Strategic Network**

## **Data and Cities as Complex Adaptive Systems (DACAS)**

**ECR/PhD CALL: Digital Tools for Urban Challenges, Workshop in Wuhan, China**

**Organisers:** Jun Luo (Wuhan University), Shidan Cheng (Wuhan University), Ulysses Sengupta (Manchester Metropolitan University), Deljana Iossifova (University of Manchester).

**Dates:** Tuesday, 18 April 2017 – Friday, 21 April 2017

**Location:** No.4 Meeting Room(2nd floor)/School of Urban Design (Mingzhuyuan Building), Faculty of Engineering, Wuhan University

### **Keynotes:**

Smart Cities and Big Data: Dr Zhaohui Liu (Director of Digital City Engineering Research Centre of China Urban Science Institution, Ministry of Housing and Construction)

Data Assessment and Urban Planning Management: Qizhi Liu (Director of Wuhan Land and Urban Planning Bureau)

Public Utility Planning and Implementation - Driven by calculation: Wei Xiong (Director of Wuhan Urban Planning and Design Institute)

**Speakers:** Murilo da Silva Baptista (University of Aberdeen); Shidan Cheng (Wuhan University); Christopher Doll (United Nations University); Alexandros Gasparatos (University of Tokyo); Deljana Iossifova (University of Manchester); Roberto Kraenkel (São Paulo State University); Jun Luo (Wuhan University); Nir Oren (University of Aberdeen); Ulysses Sengupta (Manchester Metropolitan University)

**Application deadline:** 3 March 2017, 23:59 (BST)

**Notification of acceptance:** 10 March 2017

**Deadline for full project contribution:** 01 May 2017

### **Digital Tools for Urban Challenges, Workshop**

This is an invitation to PhD students and Early Career Researchers. The international workshop involving academics and policy makers will discuss how the City of Wuhan can use digital and data tools developed from a Complexity Science perspective (concept transfer, dynamic data analysis and modelling) to address urban transformation. DACAS members will share knowledge and developing technology with

local stakeholders (governments and enterprises) and discuss how to meet the needs of planning policy and design in rapidly urbanising China.

This four-day workshop offers the opportunity to become involved in progressing the development of tools to address urban transformation using transdisciplinary methods. Participants will ideally have some experience in data analysis, spatial systems modelling, social systems analysis, social network modelling, GIS modelling, machine learning, network analysis, syntactical analysis, computer programming, computational modelling, digital gamification, modelling transport systems, data visualisation, computer game development, agent based modelling, gamification or ICT tool development.

The aim of the project is transdisciplinary research and hence researchers are encouraged to apply from a variety of fields including, but not limited to cognitive sciences, game theory, urban planning, governance, human geography, economics, ecology, biology, behavioural economics, engineering, computer science, anthropology, urban studies, public policy, urban sociology and environmental psychology.

Participants will experience different approaches to modelling using a complexity science framework and enter debates on the improvement of these. The work will involve 'hard' and 'soft' datasets. 'Hard' refers to datasets describing spatial morphology, infrastructural provision, etc., as dynamic adaptive systems. 'Soft' refers to datasets describing social epidemiology, family structure, changing norms, personal narratives, etc., as dynamic evolutionary systems.

Currently, selected tools include:

- 1) Public Transport Network Capacity & Planning Analysis (example set in Manchester) – Ulysses Sengupta, Deljana Iossifova, Eric Cheung
- 2) TBC by DACAS Partners
- 3) TBC by DACAS Partners

Digital Tools for Urban Challenges is the fourth of a series of events funded through the ESRC Strategic Network Data and Cities as Complex Adaptive Systems (DACAS). The aim DACAS is to promote an interdisciplinary complexity science approach to the study of urban data and the links between soft and hard systems as the basis for the development of innovative technological applications. DACAS connects non-academic stakeholders from the public, private and third sectors and noted academics with backgrounds in various relevant disciplines in China, Brazil and the UK.

**Applications:** PhD and Early Career Researchers – regardless of their nationality, institutional affiliation or disciplinary background – are invited to apply for the DACAS workshop in Wuhan, China. To apply, please write to Solon Solomou (solon.solomou[at]stu.mmu.ac.uk), with '**DACAS Wuhan**' in the **subject field of your email**. You are asked to submit an abstract (300 words) and to provide a brief CV (up to two A4 pages, .pdf or .doc file).

Your abstract should outline how your disciplinary approach can contribute to current complex urban transformation using data, analytic methods and dynamic models. You should also clearly state how your

own research will be advantaged by your participation in a complexity science based transdisciplinary team of researchers and practitioners.

Participation is free of charge and competitive bursaries are available.

**Bursaries:** Highly competitive bursaries are available and will be awarded based on the quality of the application and commitment to write a short working paper of 4,000 words by 01 May 2017. Papers will be published on the DACAS website or may be selected for publication in an edited volume.

If you wish to apply for one of the bursaries, please indicate this by clearly stating one of the following in your application email:

- a) I can only attend if awarded a bursary,
- b) I would like to attend and a bursary would be very helpful but not essential.
- c) I would like to attend and do not require a bursary.

**Further information:** If you have any questions regarding this event, please email the project assistant, Solon Solomou (solon.solomou[at]stu.mmu.ac.uk), with 'DACAS Wuhan' in the subject field of your email.