GISRUK 2019

27th Annual
GIScience Research UK
Conference

23-26 April 2019
Newcastle upon Tyne

Delegate Handbook

newcastle.gisruk.org

Contents

Contents

Chair's welcome

It is a pleasure to welcome all GISRUK 2019 attendees to the 27th Annual Conference in the successful series dedicated to the showcasing and development of research in the wide-ranging field of geographic information science. Newcastle University last played host to GISRUK in 1995 and GIS education and research has flourished in the decades since. At that time the University's departments of Geography – where significant conceptual and applied geocomputation research was being undertaken – and Geomatics – where an undergraduate BSc degree in GIS was launched – had a mature and effective presence in the GISRUK community. Today that activity has accelerated further and we hope to demonstrate the Newcastle contribution to you this week.

This conference comprises a number of presentations from researchers in the UK and beyond, some shorter contributions designed to offer early research students a platform for explaining their investigations, an extensive poster venue, a range of pre-conference workshops, three intriguing keynote speakers, a topical panel discussion session on open data, and a full social programme. We are grateful to all those who have offered their contributions and are dedicated to making this meeting successful. The main schedule offers 45 full presentations, plus a session of 15 shorter talks by emerging researchers seeking a platform to introduce and interactively discuss their work. 25 posters will be displayed during the dedicated poster session.

If you are a 'first-time' GISRUK attendee, you are particularly welcome, and we hope that you enjoy a stimulating and engaging meeting. Please feel free to engage with your fellow attendees, in the lecture room and during the more informal occasions. Those who are already familiar with our conferences are encouraged to interact positively with others to promote GISRUK. Please use the hashtag #gisruk2019 to contribute to social media during the conference.

I extend further thanks to all the staff and students of Newcastle University who have worked to ensure that this week goes off smoothly in the tradition of GISRUK conferences, and to our generous sponsors, without whom this event could not take place.

Your attention is drawn to the information at the end of this brochure about Prizes, and the meaning of (ECR) alongside many of the main presentations listed in the detailed programme on pages 18-25. These are papers presented by young researchers (and eligible for a specific prize). The fact that there are many presentations in this category is evidence of the success of GISRUK in its major function – the advancement of GIS research through the nurturing and encouraging of young researchers.

We are committed to making this event as 'carbon-neutral' and sustainable as possible. We have provided you with a re-usable bamboo cup for tea and coffee breaks, and water will be available for you to refill your bottle throughout the conference. Newcastle is a very walkable city, so please consider making local journeys on foot while at the conference: volunteers will be happy to help with routes and directions. We have tried to reduce as much as possible the amount of plastic we use at the conference and limited the amount of printed material you are given.

You are encouraged to access the full conference programme (with abstracts) and schedule (including visitor advice) online at www.newcastle.gisruk.org - and please return this brochure for re-cycling when finished with it.

Howay man, gan canny and hev a reet belter time in the toon, why aye!

Dr Craig Robson,
Chair of GISRUK 2019

About GISRUK

The GISRUK conference series is an international conference which has grown out of the UK's national GIS research conference, established in 1993. We have held the conference at venues in the UK and the Republic of Ireland. GISRUK conferences are primarily aimed at the academic community but welcome delegates from government, commercial and other sectors. The conferences attract those interested in Geographical Information Science (GIS) and its applications from all parts of the UK, together with the European Union and beyond. The disciplinary range is broad including, but not limited to, Geography, Environmental Science, Ecology, Computer Science, Planning, Archaeology, Geology, Geomatics and Engineering.

The GISRUK conferences have the following aims:

- to act as a focus for GIS research in the UK, while welcoming researchers from Europe and beyond;
- to provide a mechanism for the announcement and publication of GIS research;
- to act as an interdisciplinary forum for the discussion of research ideas;
- to promote active collaboration amongst researchers from diverse parent disciplines;
- to provide a framework in which young researchers (including students) can see their work in a national and international context.

Organising Committee

GISRUK 2019

Local Chair

Dr Craig Robson

Local Organising Committee and Programme Reviewers

Prof Stuart Barr
Dr David Fairbairn (Chair of Programme Committee)
Alistair Ford
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James Goodyear
Laura Hanson
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Volunteers

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Dr Stefano de Sabbata
Dr Elizabeth Stutchbury
Dr Zena Wood

Sponsors & Supporters

We are grateful to our sponsors, whose logos adorn the back page of this brochure: Ordnance Survey, ESRI (UK), Edina (University of Edinburgh), and JISC.

We acknowledge support from Newcastle University, and the Newcastle-Gateshead Initiative.

The template for this brochure has been kindly supplied by Leicester University, organisers of GISRUK2018, and we acknowledge the contribution of Dr Nick Tate and Dr Stefano de Sabbata.

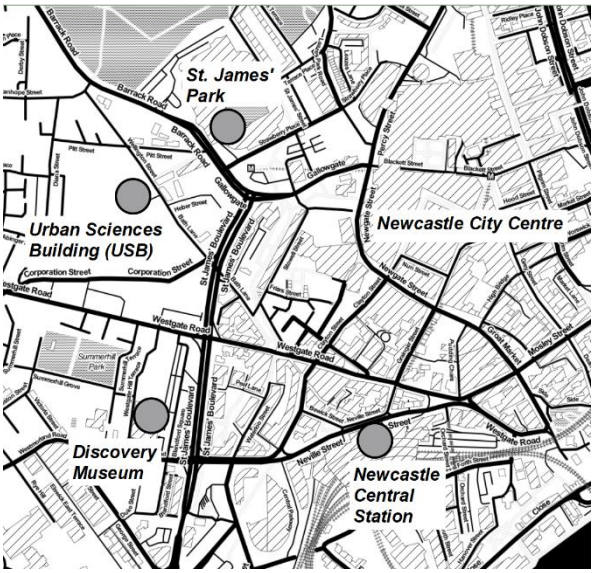
Conference reception

The conference reception, to be held on Wednesday, 24th April 2019, will take place in the Discovery Museum, home to one of the finest collections of technical and scientific material outside London. Located a short walk away from the conference venue, you are welcome to join us for canapés and drinks in the Science Maze, for interactive fun, and the Turbinia Gallery from 17:30. The Turbinia itself takes pride of place in the museum: designed in 1894 by Tyneside engineer Charles Parsons, she was the world's first ship to be powered by steam turbines and until 1899, was the fastest ship in the world.

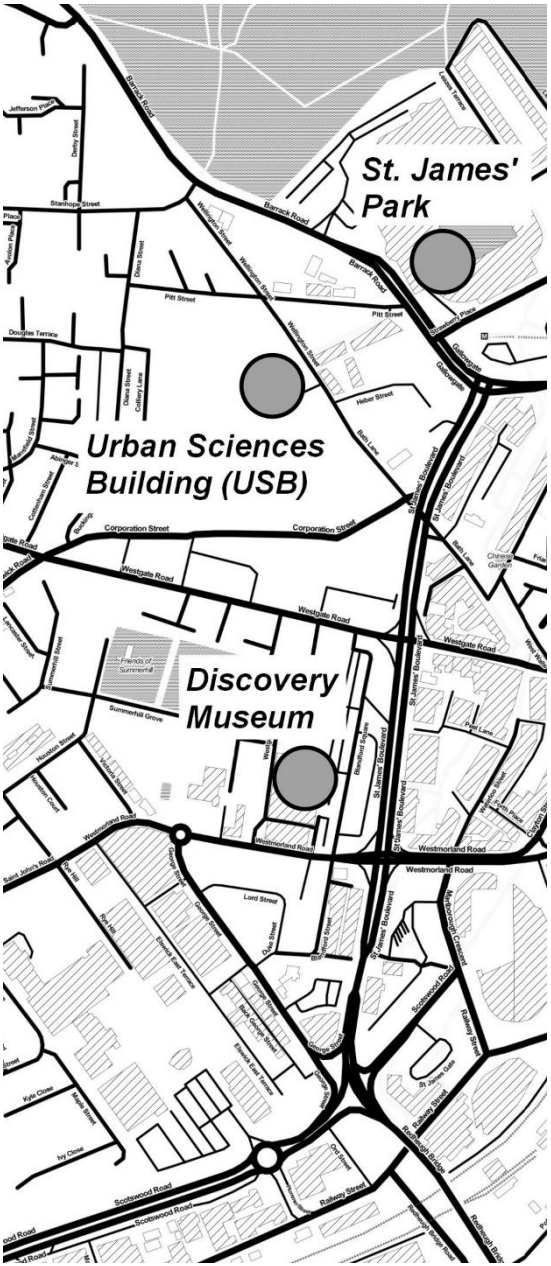
Conference dinner

The venue for the conference dinner on Thursday, 25th April 2019 will be St. James' Park, home to Newcastle United Football Club since 1892. As the major structure within the city-centre of Newcastle, and less than 200 metres from the conference venue, this location is easily accessible. A reception will start from 17:30 with views overlooking the main stadium, followed by a three course meal in the Moncur Suite, a venue which is redolent of past glories and the desire for future success.

Maps (OSM data from Stamen)



Central Newcastle locations



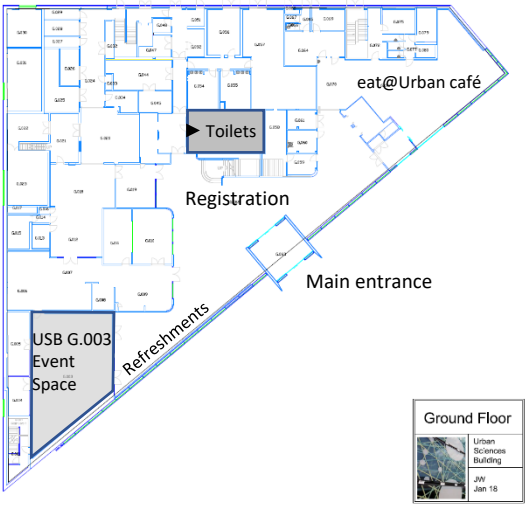
Conference environs

Urban Sciences Building (USB)

The GISRUK 2019 conference is being held in the award-winning Urban Sciences Building, Newcastle University. The welcome and registration area is situated on the Ground Floor, where you will also find the refreshments, the Event Space being used for the Workshops and Poster Session, and the small exhibition area.

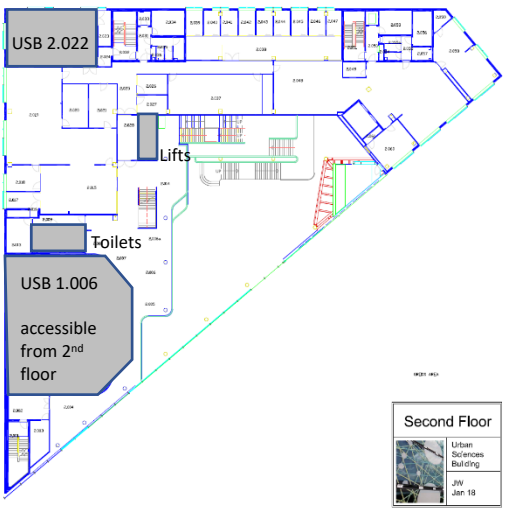
Room 1.006, the Lecture Theatre is on the first floor: you are encouraged to use the entrances also on the Second Floor, where Room 2.022 is located also. The Fourth Floor contains Room 4.005.

Ground Floor

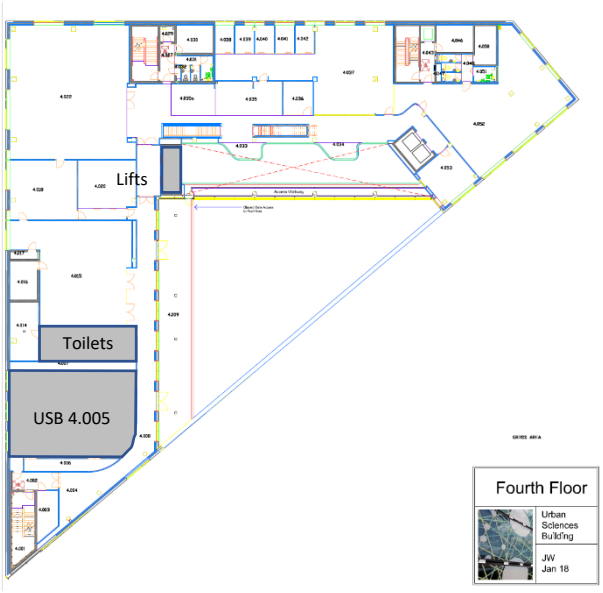


First Floor

Second floor



Fourth floor



Early Career (ECR) Workshops
[all events held in USB G.003 Event Space]

Tuesday, 23 April 2019	
12:30 - 13:00	**Welcome to GISRUK** (Craig Robson)
13:00 - 14:30	***Workshop A*** **Seeing our cities: visualising urban digital twins** (Nick Holliman, Newcastle University)
14:30	*Tea / Coffee Break*
15:00 - 16:00	***Workshop B*** **Accessing open data and using APIs** (Neil Harris, Newcastle University)
16:00 - 17:00	**ECR welcome event and orientation**

Wednesday, 24 April 2019	
09:00 - 10:45	***Workshop C*** **Spatial data with R: an introduction** (Nick Bearman, UCL, and Robin Lovelace, Leeds University)
10:45	*Tea / Coffee Break*
11:15 - 12:30	***Workshop D*** **GIS in industry** (Laura Hanson, Arup)

Programme overview

IME	SESSION: Name [ROOM]		
Wednesday, 24 April 2019			
13:30	*Welcome* **[USB Room 1.006]**		
14:00	*Keynote* **[USB Room 1.006]** Renee Sieber		
15:00	*Tea / Coffee Break*		
15:30	Session 1		
	Track A: Land cover and sustainability **[USB Room 1.006]**	*Track B:* Neighbourhoods and demographics **[USB Room 2.022]**	*Track C:* Understanding and using data **[USB Room 4.005]**
17:30	*Conference reception (Discovery Museum)*		

Thursday, 25 April 2019			
09:05	Session 2		
	Track A: Machine learning and statistics **[USB Room 1.006]**	*Track B:* Exploring place **[USB Room 2.022]**	*Track C:* Households and house prices **[USB Room 4.005]**
10:30	*Tea / Coffee Break*		
11:00	Session 3		
	ECR Track A: Geospatial analysis **[USB Room 1.006]**	*ECR Track B:* Environment and crime **[USB Room 2.022]**	*ECR Track C:* Human issues **[USB Room 4.005]**
12:15	*Lunch break*		
12:45	*Poster session* **[USB G.003 Event Space]**		

13:30	*Panel session* How will the opening-up of geospatial data help the GIS community? **[USB Room 1.006]**		
15:00	*Tea / Coffee Break*		
15:30	**Session 4**		
	Track A: Spatial modelling **[USB Room 1.006]**	*Track B:* Retail and consumers **[USB Room 2.022]**	*Track C:* Analysing bike share data **[USB Room 4.005]**
16:30	*Keynote* **[USB Room 1.006]** Gobe Hobona		
17:30	*Dinner reception (St James' Park)*		
18:30	*Conference dinner (St James' Park)*		

Friday, 26 April 2019			
09:30	**Session 5**		
	Track A: Healthcare **[USB Room 1.006]**	*Track B:* Collecting and visualising data **[USB Room 2.022]**	*Track C:* Transport Analysis **[USB Room 4.005]**
11:00	*Tea / Coffee Break*		
11:30	*Keynote* **[USB Room 1.006]** Thierry Gregorius		
12:30	*GISRUK awards, thanks and GISRUK2020 preview* **[USB Room 1.006]**		
13:00	*Conference closes*		

Sessions 1 to 5 detailed programme

Wednesday, 24 April 2019	
15:30	Session 1 Track A **[USB Room 1.006]** Land cover and sustainability
15:30	(ECR) A Land Cover-Based Assessment of Ecosystem Service Provision in UK Farms and Estates *Thomas Burke, Duncan Whyatt, Alan Blackburn, Clare Rowland and Jon Abbatt*
15:50	(ECR) Re-wetted land use capability assessment for North West England *James Deed, Nigel Watson and Duncan Whyatt*
16:10	An integrated approach to evaluating critical environmental and ecological landscape characteristics across gradients of land-sparing-sharing and urbanity *Matthew Dennis and Philip James*
16:30	(ECR) Global Agricultural Land Loss due to Urban Expansion: Implications on the Sustainability of Global Food Security *Taher M. Radwan, J. Duncan Whyatt, G. Alan Blackburn and Peter M. Atkinson*

Wednesday, 24 April 2019	
15:30	Session 1 Track B **[USB Room 2.022]** Neighbourhoods and demographics
15:30	(ECR) A Scalable Analytical Framework for Spatio-Temporal Analysis of Neighbourhood Change: A Sequence Analysis Approach *Nikos Patias, Francisco Rowe and Stefano Cavazzi*
15:50	Using the spatial analysis of family names to gain insight into demographic change *Justin van Dijk, Guy Lansley, Tian Lan and Paul Longley*
16:10	Fuzzy Geodemographics: Application of Fuzzy c-means *Burcin Yazgi Walsh and Chris Brunsdon*
16:30	Using Big Data to measure the demographic changes in a gentrifying neighbourhood *Guy Lansley, Wen Li and Paul Longley*

Wednesday, 24 April 2019	
15:30	Session 1 Track C **[USB Room 4.005]** Understanding and using data
15:30	Identifying the appropriate spatial resolution for the analysis of crime patterns *Nick Malleson, Wouter Steenbeek and Martin Andresen*
15:50	SWEEP: the Series With Elastic Extents Problem and "Gerrymandering" Urban Time Series *Samuel Stehle*
16:10	Geocoding historical census records in England and Wales *Tian Lan, Guy Lansley, Justin van Dijk and Paul Longley*
16:30	A Global Synopsis of OGC Web Services *J Moules*

Thursday, 25 April 2019	
09:05	Session 2 Track A **[USB Room 1.006]** Machine learning and statistics
09:05	(ECR) Multi-hazard Risk Assessment by Integrating Machine Learning and GIS *Surassawadee Phoompanich, Stuart Barr and Rachel Gaulton*
09:25	(ECR) Learning Digital Geographies through a stacked Multi-Modal Autoencoder *Pengyuan Liu and Stefano De Sabbata*
09:45	Signed chi-squares revisited *Martin Charlton, Chris Brunsdon, Paul Harris and Lex Comber*
10:05	From Minkowski Sum to Concave Hull: Two Case Studies of Open Source Development at Ordnance Survey *Sheng Zhou and Jonathan Simmons*

Thursday, 25 April 2019	
09:05	Session 2 Track B **[USB Room 2.022]** Exploring place
09:05	Exploratory spatial analysis of English place names *Mike Coombes and Colin Wymer*
09:25	Change in Artificial Land Use over time across European Cities: A rescaled radial perspective *Paul Kilgarriff, Remi Lemoy and Geoffrey Caruso*
09:45	Where are the centres of a city? A method to analyze centrality and modal equity of transport in comparable manner across city regions *Henrikki Tenkanen, Jeison Londoño Espinosa and Tuuli Toivonen*
10:05	(ECR) Understanding tourist multipurpose travel behaviour using Weibo check-ins *Zi Ye, Graham Clarke and Andy Newing*

Thursday, 25 April 2019	
09:05	Session 2 Track C **[USB Room 4.005]** Households and house prices
09:05	Taking household data as ancillary information in areal interpolation *Wen Zeng and Alexis Comber*
09:25	(ECR) Performance of home detection from mobile phone data *Maarten Vanhoof, Clement Lee and Zbigniew Smoreda*
09:45	(ECR)) A new insight into residential house price variation across England through linking Land Registry Price Paid Data and Domestic Energy Performance Certificates *Bin Chi, Adam Dennett and Thomas Oléron-Evans*
10:05	(ECR) Geo-propagation from Incomplete Spatial Distribution Data: A Case Study of House Price Estimation *Di Zhu, Tao Cheng and Yu Liu*

Thursday, 25 April 2019	
11:00	Session 3 ECR Track A **[USB Room 1.006]** Geospatial analysis
11:00	Visualising geographic information: improving interpretation through cartograms, hexograms and regular grids *Samuel Langton and Reka Solymosi*
11:15	Exploring the Dynamics of Geodemographics *Jennie Gray, Lisa Buckner and Alexis Comber*
11:30	Data Assimilation for Agent-Based Modelling: An Implementation of the Ensemble Kalman Filter *Keiran Suchak, Nick Malleson and Jonathan Ward*
11:45	Integrating spatiotemporal dynamics for modelling disruption to road travel in flood events *Kate Rawlings, Jim Wright, Alan Smith, Sally Brown and Jeremiah Nieves*
12:00	Optimal Land Use Allocation for the Heathrow Opportunity Area Using Multi-Objective Linear Programming *Melda Salhab and Thomas Oleron-Evans*

Thursday, 25 April 2019	
11:00	Session 3 ECR Track B **[USB Room 2.022]** Environment and crime
11:00	Modelling the dynamics of police demand and resourcing over space and time. *Sedar Olmez, Alison Heppenstall, Daniel Birks and Thomas French*
11:15	Using Agent-Based Models to Inform Policing Decisions in Crime Clusters *Verity Tether, Alison Heppenstall, Nicholas Malleson and Daniel Birks*
11:30	Multi-objective spatial optimization utilising cloud-enabled evolutionary computing. *Grant Tregonning*
11:45	Understanding patterns of consumption-based greenhouse gas emissions in Bristol *Lena Kilian, Anne Owen and Andy Newing*

12:00	A conceptual Model of dynamic Urban potential Energy balance and pilot Model *Gengze Li, Ian Philips and Dave Milne*

Thursday, 25 April 2019	
11:00	Session 3 ECR Track C [USB Room 4.005] Human issues
11:00	Using eye tracking to assess the effectiveness of geovisualisations for multidisciplinary decision making in environmental engineering *Jess Hepburn*
11:15	Simulating Crowds in Real-Time with Agent-Based Modelling and a Particle Filter *Kevin Minors, Andrew West and Nicolas Malleson*
11:30	Developing a methodology for validating pedestrian counts from Wi-Fi sensors to aid in quantifying the ambient population *Annabel Whipp, Nick Malleson and Jon Ward*
11:45	Unpacking aspects of what we see from retail premises to characteristics of the human environment *Sam Comber and Dani Arribas-Bel*
12:00	The role of geospatial data in UK third sector service provision *James Bowles*

Thursday, 25 April 2019	
15:30	Session 4 Track A **[USB Room 1.006]** Spatial modelling
15:30	Spatial Interaction Modelling for Large-Scale Infrastructure Projects *Andrew Smith and Nik Lomax*
15:50	Simulating change in cultural landscapes: towards a Historic Landscape Modelling approach. *Francesco Carrer, Nurdan Erdogan, Ebru Ersoy, Betul Cavdar, Gunder Varinlioglu, Mark Jackson, Tevfik Emre Serifoglu, Engin Nurlu and Sam Turner*
16:10	(ECR) Modelling the impact of recreational activities to inform management of Marine Protected Areas

	Paula Lightfoot, Catherine Scott and Clare Fitzsimmons

Thursday, 25 April 2019	
15:30	Session 4 Track B **[USB Room 2.022]** Retail and consumers
15:30	(ECR) Assessing the Value of Footfall Data in Retail Analytics *Terje Trasberg, James Cheshire and Paul Longley*
15:50	(ECR) A comparative analysis: Retailers' locations and socio-economic deprivation *Oluwole Adeniyi, Paul Whysall and Abraham Brown*
16:10	Local area estimation of expenditure profiles and consumer attitudes *William James and Nik Lomax*

Thursday, 25 April 2019	
15:30	Session 4 Track C **[USB Room 4.005]** Analysing bike share data
15:30	(ECR) Detecting Journeys in Bicycle Sharing Systems from Docking Station Counts *James Todd, Oliver O'Brien and James Cheshire*
15:50	Locating stations in bike-sharing service: a special maximal covering location problem *Huanfa Chen, Yang Zhang and Tao Cheng*
16:10	(ECR) Combining network methods with longitudinal data analysis to examine spatio-temporal variation in bike sharing data *Sarah Gadd, Peter Tennant, Mark S Gilthorpe and Alison Heppenstall*

Friday, 26 April 2019	
09:30	Session 5 Track A **[USB Room 1.006]** **Healthcare**
09:30	Spatially optimized health services – Effectiveness and equality of primary health care service network accessibility in Northern Ostrobothnia *Ossi Kotavaara and Timo Pohjosenperä*
09:50	(ECR) Dynamic Accessibility and the Healthcare Ecosystem *Alfred Long, Jens Kandt, Alistair Leak and Paul Longley*
10:10	Exploring relationships between cancer screening uptake and deprivation using Geographically Weighted Regression *Alistair Geddes*
10:30	(ECR) The usability of open source tools to measure access to health services; analysing mobile cancer unit locations *Richard Williams, Gary Higgs and Mitchel Langford*

Friday, 26 April 2019	
09:30	Session 5 Track B **[USB Room 2.022]** **Collecting and visualising data**
09:30	Cartograms Work Backwards *Chris Brunsdon and Martin Charlton*
09:50	(ECR) Visualising Origin-Destination Data for Geographical Analysis: An Evaluation of Techniques *Kim Butterfield, Roger Beecham and Alison Heppenstall*
10:10	(ECR) Colouring London – A Crowdsourcing Platform for Geospatial Data Related to London's Building Stock *Polly Hudson, Adam Dennett, Tom Russell and Duncan Smith*
10:30	(ECR) Medium Data Toolkit - A Case study on Smart Street Sensor Project *Balamurugan Soundararaj, James Cheshire and Paul Longley*

Friday, 26 April 2019	
09:30	Session 5 Track C **[USB Room 4.005]** Transport analysis
09:30	(ECR) Defining input parameters of Fuzzy Inference Model for detecting Traffic congestions *Maja Kalinic and Andreas Keler*
09:50	Understanding the Dynamics and Context of New York Transportation Hubs *Yunzhe Liu, Alex Singleton and Daniel Arribas-Be*
10:10	(ECR) Analysis of smart card data to understand the mobility patterns of concessionary bus users *Ffion Carney, Paul Longley and Jens Kandt*
10:30	Reproducible road safety research: an exploration of the shifting spatial and temporal distribution of car-pedestrian crashes *Robin Lovelace, Layik Hama and Roger Beecham*

Keynote presentations

KEYNOTE 1

WEDNESDAY, 24 APRIL 2019, 14:00 - 15:00
USB 1.006 LECTURE THEATRE

Professor Renee Sieber

Professor of Geography and Environment
McGill University
Montréal, Canada

Where did all the humans go in GeoAI?

GeoAI is fast becoming the algorithm *du jour* in geospatial research, promising to automate many tedious activities and extract knowledge from big datasets. How do we ensure humans are not rendered irrelevant (or worse yet, entities to be controlled) as GIScientists begin applying the shiny new toy inside the black box? To contextualize the talk I describe past involvement in public participation in computational technologies. I then briefly describe the shiny new toy—the promise of GeoAI—via several applications. Since AI appears to be all about automation of human intelligence it wouldn't seem there is a role for humans. However, humans are extensively involved in cleaning and validating the training data and model output, which is surprising for what is supposedly an automated process. We should not be sanguine about explicating a role for humans, since AI could be seen as the epitome of technocratic control, sublimating political power and bias deep within the algorithm. I conclude with thoughts about the implications of GeoAI for state governance, human comprehension, individual privacy, public engagement and public and private sector accountability.

KEYNOTE 2

THURSDAY, 25 APRIL 2019, 16:30 - 17:30
USB 1.006 LECTURE THEATRE

Dr Gobe Hobona

Director of Knowledge Management
Open Geospatial Consortium
UK

Geospatial Interoperability: A Catalyst for Future Innovation

Every organisation encounters the dilemma of whether to invest in research and innovation at some point in time. That dilemma is caused, in some cases, by the fact that it may take years to turn an idea into profit. Further, the impact or success of an innovation is seldom apparent until far into its development. This dilemma can be seen in the uptake of the three aspects of open innovation namely open source software, open data and open standards. Unlike in historic times, many commercial geospatial technology providers now participate in open source software development, seeing it as a research and development activity. Similarly, many authoritative data providers now offer some of their data under an open licence. Furthermore, many geospatial technology providers offer standards-based interfaces into their products to enable integration of their products with third-party software. This presentation will explore the relationship between open source software, open data and open standards, as well as how geospatial interoperability acts as a catalyst for innovation in each. Focusing on open standards, the presentation will describe how the Open Geospatial Consortium (OGC) monitors technology trends and how it uses the insight gained from analysing the technology trends to guide its future research and innovation.

KEYNOTE 3

FRIDAY, 26 APRIL 2019, 11:30 - 12:30
USB 1.006 LECTURE THEATRE

Dr Thierry Gregorius

Principal Strategic Consultant
Exprodat
Exeter
UK

GIS, Data, Decisions: Dispatches from the Frontlines of Global Business

With over 20 years' experience in Energy, Natural Resources and Environment, and having worked for companies like Royal Dutch Shell and Landmark Information Group, where he occupied global and senior leadership positions, Thierry has worked as a management consultant with Exprodat Consulting (a Getech group company) for the past six years. Here he pursues his passion for helping people transform how they work - with GIS or otherwise - and presents his views on the discipline and the industry through social media. This presentation will develop these views by providing examples of where recent advances in GIS have made a real difference, and pointing at future opportunities where problems are still waiting for a solution.

Panel discussion session

How will the opening-up of geospatial data help the GIS community?

THURSDAY, 25 APRIL, 13:30 - 15:00
USB 1.006 LECTURE THEATRE

The landscape of geospatial data handling is being modified by the influence of increased data availability, the changing practices of data collectors, the enhancement of data by third-party re-sellers, the development of government and official policy on data supply, the activity of 'non-professional' and informal developers, the broadening applications and wider user communities, the maturing of geospatial research and many other factors.

The panel discussion will explore these aspects and attempt to derive a contemporary picture of that landscape. A range of individuals will be invited to contribute their initial views, and the ensuing discussion will open up to the audience – we are keen to record the opinions of all attendees at GISRUK2019. You can contribute questions and observations through https://www.sli.do/ (event code #3006)

Chair
Mark Birkin, *Professor of Spatial Analysis, Leeds University and Director of Urban Analytics, Alan Turing Institute*

Panel members
Damien McCloud, *Associate Director Digital, Arup plc*;
Simon Navin, *Head of Innovation Programmes, Ordnance Survey*;
Hugh Phillips, *Deputy Director of Policy, The Geospatial Commission*;
Anne Robertson, *Head of Services and User Engagement, EDINA*;
Alex Singleton, *Professor of Geographic Information Science, Liverpool University*;
Alexis Hannah Smith, *Founder and CEO, IMGeospatial.*

Posters

The following posters will be displayed in USB G.003 Event Space on Thursday, 25 April 2019 (12:45-13:30):

A study of the raised terraces of Kincraig Point using Structure from Motion and GIS analysis	Cook, Raub and Bates	St. Andrews
The Power Within Digital Data - Identifying Social Isolation and Loneliness	Reedman-Flint	Notting-ham
What can Social Media Data tell us about the Location and Price of Airbnb Rentals?	Wang, McArthur and Hong	Glasgow
Instance Segmentation for Digital Elevation Models	Kazimi, Thiemann and Sester	Hannover
Incidences of deliberate fire in West Yorkshire: Spatio-temporal patterns and influences on trends	Whipp and Malleson	Leeds
Mapping Bikeability Based on OpenStreetMap	Ding and Feng	Edinburgh
Least Cost Paths for Participatory Network Design	Denwood, Huck and Lindley	Man-chester
Influencing factors and Short/Long-term prediction of availability for the Dublin Bike Scheme	George, Timoney and Pham	Maynooth
Detecting Spatial Patterns Through Data Mining Techniques: a Cluster Analysis of the London Cycle Hire System	Sibilia and Haworth	WSP
Comparing the urban environment with socioeconomic characteristics using features extracted from aerial imagery	Green and Arribas-Bel	Liverpool
Development of an image recognition subsystem for cartographic information correction based on monitored data obtained with use of Remotely Piloted Aircraft	Gorelikovs, Urbaha and Urbahs	Riga Technical University
Geographic data analysis and geospatial web applications with R and ReactJS	Hama and Lovelace	Leeds
Probabilistic Spatial Agent-Based Models of Social Simulations	Archer	Leeds

Quantification and Risk Assessment of the 2008 Ogoniland Oil Spill	Obida, Whyatt, Blackburn and Semple	Lancaster
Exploring the Homogeneity of Offenders in Crime Hotspots	Chen, Cheng and Zhang	UCL
Geotechnologies applied to business location studies in urban expansion areas. The case of Augusto Montenegro Ave. in Belém – PA – Brazil	Sousa	University of Beira Interior
Estimating the Prevalence of Shared Accommodation across the UK from Big Data	Samuel, Lansley and Coulter	UCL
Socio-demographic and spatial disaggregation of E-commerce use in the grocery market in Great Britain	Urquhart, Hood, Newing and Heppenstall	Leeds
Analyzing urban vitality patterns with topological data analysis	Samardzhiev and Arribas-Bel	Liverpool
Deep Learning for Demographic Prediction based on Smart Card Data and Household Survey	Zhang, Cheng and Sari Aslam	UCL
Open Big Data Quality: An exploration of Modifiable Areal Unit Problem	Moran, Tiri and Brunsdon	Maynooth
Timing is Everything: an Agent-based Exploration of Last-Mile Freight Timed Delivery Behaviour	Wise, Cheliotis, Mcleod, Cherrett, Allen, Bates, Piecyk and Bektas	UCL
Impacts of Mobility as a Service on existing sustainable modes: A pilot indicator to engage transport decision makers	Philips, Walmsley and Anable	Leeds
Trip purpose identification using pairwise constraints based semisupervised clustering	Aslam, Cheng, Cheshire and Zhang	UCL
Enhancing our understanding of access to sporting facilities in Wales through geospatial analysis	Price, Langford, Higgs and Radcliffe	South Wales

Prizes

Please note that your input is required to award prizes for the most effective presentations at GISRUK 2019. Three prizes of £100 each are awarded – for best paper presented in Sessions 1, 2, 4 and 5; for best paper presented by an early career researcher (ECR) in Sessions 1, 2, 4 and 5 ((ECR) eligible papers are prefixed as such in the detailed programme); and for best poster presentation.

A further prize is decided and awarded by the staff of CASA, University College London for the best paper dealing with spatial analysis.

You are asked to visit the conference website (www.newcastle.gisruk.org) in order to cast your vote before 11:30 on Friday, 26 April 2019. Alternatively you may cast your vote at the computers available at the registration desk.