The following PhD vacancies and research topics within the School of Geography were compiled in November 2013 and were correct at the time of publication.

For further guidance on pursuing a PhD in any of these areas, please consult the School of Geography website or contact the relevant members of academic staff as listed below.

**Cultural and Historical Geography**

**Anti-colonial nationalism**

Supervisor:  **Steve Legg** ([stephen.legg@nottingham.ac.uk](mailto:stephen.legg@nottingham.ac.uk))

An interest in how political movements challenges the justifications for, and mechanisms of, colonialism. With a particular interest in the interrelationship between the scales of the home, the city, and the international.

**Historical geographies of South Asian urban politics**

Supervisor:  **Steve Legg** ([stephen.legg@nottingham.ac.uk](mailto:stephen.legg@nottingham.ac.uk))

An interest in the city as a pivotal space of colonial south Asia, bringing together interests in formal politics with those of policies regarding housing, policing and sexuality.

**Interwar imperialism, federalism and constitutional reform**

Supervisor:  **Steve Legg** ([stephen.legg@nottingham.ac.uk](mailto:stephen.legg@nottingham.ac.uk))

An interest in how constitutions were created and revised in colonial settings to accommodate the demands of both imperialists and nationalists, creating in the process spaces of experimentation and innovation for the government of everyday life.

**Estate landscapes of Britain and the Caribbean**

Supervisor:  **Susanne Seymour** ([susanne.seymour@nottingham.ac.uk](mailto:susanne.seymour@nottingham.ac.uk))

**Legacies of slavery and colonialism in the British countryside**

Supervisor:  **Susanne Seymour** ([susanne.seymour@nottingham.ac.uk](mailto:susanne.seymour@nottingham.ac.uk))
Epidemic history of twentieth century Britain
Supervisor: Matthew Smallman-Raynor (matthew.smallman-raynor@nottingham.ac.uk)

Wartime population displacement and disease
Supervisor: Matthew Smallman-Raynor (matthew.smallman-raynor@nottingham.ac.uk)

Cultural and historical geography of trees, woods and forests in Britain and Europe
Supervisor: Charles Watkins (charles.watkins@nottingham.ac.uk)

Historical geography/environmental history of 20th century warfare
Supervisor: Mike Heffernan (mike.heffernan@nottingham.ac.uk)

History of modern cartography
Supervisor: Mike Heffernan (mike.heffernan@nottingham.ac.uk)

Historical geography of the silk road
Supervisor: Mike Heffernan (mike.heffernan@nottingham.ac.uk)

British women’s imperial emigration societies in the nineteenth century
Supervisor: Georgina Endfield (georgina.endfield@nottingham.ac.uk)

The role of physical relief models in public settings.
Supervisor: Gary Priestnall (gary.priestnall@nottingham.ac.uk)

This research would explore the historical role of physical landscape models as situated displays in public settings. Several case studies are available, including models of the English Lake
District created by Flintoft and Mayson. There is potential to explore the use of such displays up to the present day in the context of museums and visitor centres.

Environment and Society

Social movements and food system sustainability - 'Meat Free Mondays' in Brighton
Supervisor: Carol Morris (carol.morris@nottingham.ac.uk)

Ancient woodland management policies in England 1970-2010
Supervisor: Charles Watkins (charles.watkins@nottingham.ac.uk)

Sustainable urban land management
Supervisor: Paul Nathanail (paul.nathanail@nottingham.ac.uk)
Predicting brownfields Circular land use can be more efficient if land is kept in beneficial use by early recognition of impending abandonment and hence implementation of a reuse strategy. Effective predictive tools are needed to assist in planning when to intervene.

Third sector management of engineered public open space
Supervisor: Paul Nathanail (paul.nathanail@nottingham.ac.uk)
Ageing and less mobile populations could maintain access to services and enhanced social capital by making better use of small pockets of underused space that are present in many housing estates built over the past 30 years.

(Un)Sustainable development
Supervisor: Paul Nathanail (paul.nathanail@nottingham.ac.uk)
The concept of sustainable development has become so ubiquitous that it is no longer able to function as a decision making criterion. Indicators of development that would be unsustainable would be useful in informing land use planning policy.
Source zone nano-remediation

Nano particles are being used or considered for use in treating dissolved phase contamination. The effectiveness of such particles in source zone remediation is currently not understood. This project would involve field scale experiments to understand the extent to which source zone remediation is feasible.

Geological model confidence for CO2 storage and shale gas extraction

Supervisor: Paul Nathanail (paul.nathanail@nottingham.ac.uk)

Currently uncertainty in the geological models of CO2 storage units or shale gas reservoirs is a major item on economic appraisal risk registers. It has been recognised that existing information could reduce that uncertainty. This project would explore the extent to which quantitative estimates of uncertainty in engineering geology models of the deep sub surface can be developed.

Ecosystem services, natural capital and human well-being

Supervisor: Roy Haines-Young (roy.haines-young@nottingham.ac.uk)

Collaborative agri-environmental governance

Supervisor: Susanne Seymour (susanne.seymour@nottingham.ac.uk)

The geographies of food security science

Supervisor: Susanne Seymour (susanne.seymour@nottingham.ac.uk)

Geosciences

Environmental and evolutionary convergence in the macroecology of predators worldwide

Supervisor: Adam Algar (adam.algar@nottingham.ac.uk)
Detecting and predicting species responses to climate change in a data-deficient world

Supervisor: Adam Algar (adam.algar@nottingham.ac.uk)

Modelling lake isotope proxies for improved data-climate model comparison

Supervisor: Matthew Jones (matthew.jones@nottingham.ac.uk)

The project looks to increase our understanding of natural archives used for obtaining proxy climate data, in this case lakes. By creating models of how the lake turns the isotope signal in atmospheric waters into the geological record we measure, we can better test climate models against past climatic scenarios and improve our reconstruction of past climates.

Reconstructing the hydro-climate of Eastern Jordan through the Last Glacial Interglacial Transition

Supervisor: Matthew Jones (matthew.jones@nottingham.ac.uk)
Gary Priestnall (gary.priestnall@nottingham.ac.uk)

Working alongside archaeological investigations in the eastern Jordan desert, this project will use combined sedimentary and GIS modelling techniques to reconstruct past hydro-climate conditions.

Climate change and global water resources: quantifying uncertainties across multiple simulation models

Supervisor: Simon Gosling (simon.gosling@nottingham.ac.uk)

This project would suit a candidate with good numerical abilities and who is interested in the modelling of global river flows. The research will involve the analysis of large datasets of river flow projections under climate change scenarios from several global hydrological models (GHMs). The datasets will be compared and contrasted to explore, for example, how flood hazard and droughts might change over the next 50 years, and to assess how certain we can be about the projected changes. Experience of programming in languages such as MatLab, FORTRAN, and R would be an advantage.
Development of a heat wave and human health early warning system for the city of Nottingham, UK

Supervisor:  **Simon Gosling**  ([simon.gosling@nottingham.ac.uk](mailto:simon.gosling@nottingham.ac.uk))

This project will involve establishing a heat wave warming system for Nottingham. The system will account for physical (e.g. weather, building density) and social (e.g. education, income) factors that can affect vulnerability to heat stress. Candidates with a strong interest in GIS and/or environmental modelling are encouraged to apply.

An assessment of the relationship between synoptic-scale weather systems and human health in the UK

Supervisor:  **Simon Gosling**  ([simon.gosling@nottingham.ac.uk](mailto:simon.gosling@nottingham.ac.uk))

This project will involve applying a synoptic scale classification system to define ‘weather types’ for various UK cities. These will then be used with human health data to explore how the weather effects health across the UK. Candidates with a strong interest in weather and climate and environmental modelling are encouraged to apply.

Carbon cycling in lowland tropical lakes

Supervisor:  **Sarah Metcalfe**  ([sarah.metcalfe@nottingham.ac.uk](mailto:sarah.metcalfe@nottingham.ac.uk))

**Suzanne McGowan**  ([suzanne.mcgowan@nottingham.ac.uk](mailto:suzanne.mcgowan@nottingham.ac.uk))

Chlorophyll and carotenoid pigments as biomarkers for palaeoenvironmental reconstruction

Supervisor:  **Suzanne McGowan**  ([suzanne.mcgowan@nottingham.ac.uk](mailto:suzanne.mcgowan@nottingham.ac.uk))

Climatic extremes in the tropical Americas: frequency and response

Supervisor:  **Sarah Metcalfe**  ([sarah.metcalfe@nottingham.ac.uk](mailto:sarah.metcalfe@nottingham.ac.uk))

Combining frequency decomposition techniques with artificial intelligence and machine learning for precipitation series prediction

Supervisor:  **Nick Mount**  ([nick.mount@nottingham.ac.uk](mailto:nick.mount@nottingham.ac.uk))
Correcting for ground data error in mapping from remotely sensed imagery
Supervisor:  **Giles Foody** ([giles.foody@nottingham.ac.uk](mailto:giles.foody@nottingham.ac.uk))

Projection Augmented Relief Models as tools for geovisualisation
Supervisor:  **Gary Prietsnall** ([gary.prietsnall@nottingham.ac.uk](mailto:gary.prietsnall@nottingham.ac.uk))

This research would explore the potential for using dynamic projection onto physical landscape models as a method of communicating spatio-temporal patterns in the context of the geosciences. Several case study applications are available including river catchment studies and wind farm location analysis, exploring the use of this technique as a tangible display connected to a Geographical Information System.

Developing novel proxies for investigating palaeoenvironmental change along the Antarctic coastal margin
Supervisor:  **George Swann** ([george.swann@nottingham.ac.uk](mailto:george.swann@nottingham.ac.uk))

Investigating changes in the North Pacific Ocean biological pump over the Mid-Pleistocene Revolution
Supervisor:  **George Swann** ([george.swann@nottingham.ac.uk](mailto:george.swann@nottingham.ac.uk))

Mapping risks from natural hazards
Supervisor:  **Paul Nathanail** ([paul.nathanail@nottingham.ac.uk](mailto:paul.nathanail@nottingham.ac.uk))

Reducing the ground data requirements for supervised classification of remotely sensed imagery
Supervisor:  **Giles Foody** ([giles.foody@nottingham.ac.uk](mailto:giles.foody@nottingham.ac.uk))

Remote sensing for object-based image analysis
Supervisor: **Paul Aplin** ([paul.aplin@nottingham.ac.uk](mailto:paul.aplin@nottingham.ac.uk))

Object-based image analysis (OBIA) operates at the scale of real-world objects rather than image pixels, offering a means of observing the landscape in a realistic context. The development of OBIA has accelerated over the past decade and can now be considered mainstream, with commercially available software and a wide user community. Initially, development of OBIA was driven largely through technological progress, and not as a result of application to environmental problems and studies. Consequently, the work undertaken tended to be proprietary and experimental. The focus of development is now shifting away from technological advancement and towards thoughtful application and implementation, and research is needed on transferable approaches that can operationalise use of OBIA in real-world contexts.

**Remote sensing image analysis to characterise change in a tropical peatland environment**

Supervisor: **Paul Aplin** ([paul.aplin@nottingham.ac.uk](mailto:paul.aplin@nottingham.ac.uk))

Tropical peatlands are known to have considerable significance in the global carbon (C) cycle, but their sink strength is under increasing threat from changes in land use and climate. Currently there is limited information on the composition of the forest in tropical peatland and our understanding of such peatlands is constrained by this lack of detailed knowledge on the small scale variation in vegetation structure. The aim of this project is to use remote sensing approaches to quantify the changing nature of tropical peatland environments and link this to wider land use and climate change.

**Combining frequency decomposition techniques with artificial intelligence and machine learning for precipitation series prediction**

Supervisor: **Nick Mount** ([nick.mount@nottingham.ac.uk](mailto:nick.mount@nottingham.ac.uk))

Machine learning and artificial intelligence approaches to rainfall-runoff prediction in river catchments have been an important and growing focus of hydrological research over the last two decades. Whilst good results can be obtained, the complexity of the methods used often makes it difficult to determine how legitimate these models are. This issue is particularly true in wavelet conjunction models, where the model inputs are composed of selected frequency components of hydrological data, rather than the complete data. These models have been shown to perform well, but the reason for this performance is not properly understood and their legitimacy is therefore questionable. This project will explore the reasons behind the performance of wavelet conjunction models of rainfall-runoff and deliver the missing assessment of their physical legitimacy.
Understanding river channel evolution in the world’s mega-rivers: a signal processing approach.

Supervisor: Nick Mount (nick.mount@nottingham.ac.uk)

Understanding the patterns of river channel evolution in the world’s largest rivers is complicated by both their scale and the fact that the changes that can be observed are composed of many different characteristic frequencies of channel response that are superimposed upon one another. Whilst remote sensing methods have allowed us to monitor and quantify channel change patterns at the scale necessary to investigate mega-rivers, methods for analysing these patterns remain limited. Recent advances indicate that frequency localisation techniques, with their origins in signal processing, may offer real potential. Exploring this potential will be the focus of this project.

Economic Worlds

Performativity and the economy

Supervisor: Adam Swain (adam.swain@nottingham.ac.uk)

Economic geographies of Ukraine

Supervisor: Adam Swain (adam.swain@nottingham.ac.uk)

Geographies of economic performance in the former Soviet Union

Supervisor: Adam Swain (adam.swain@nottingham.ac.uk)

The business of comedy: the economic geography of stand-up

Supervisor: Andrew Leyshon (andrew.leyshon@nottingham.ac.uk)

A geography of 're-shoring': Britain, China and the reversal of job outsourcing.

Supervisor: Andrew Leyshon (andrew.leyshon@nottingham.ac.uk)
A critical geopolitics of 'currency wars'
Supervisor: Andrew Leyshon (andrew.leyshon@nottingham.ac.uk)

Luxury consumption and branding: luxury retailing and consumption in an age of austerity
Supervisor: Louise Crewe (louise.crewe@nottingham.ac.uk)

Retail design and the city: how store architecture fashions the contemporary city
Supervisor: Louise Crewe (louise.crewe@nottingham.ac.uk)

The geographies of the fashion modelling industry: people, places, bodies and aesthetic labour in fashion modelling
Supervisor: Louise Crewe (louise.crewe@nottingham.ac.uk)

Geographies of bio-financialisation
Supervisor: Shaun French (shaun.french@nottingham.ac.uk)

Mapping everyday financial subjectivities
Supervisor: Shaun French (shaun.french@nottingham.ac.uk)

Governmentalities of insurance and risk
Supervisor: Shaun French (shaun.french@nottingham.ac.uk)

Geographies of business and management education
Supervisor: Sarah Hall (sarah.hall@nottingham.ac.uk)

This project sits at the interface between economic geographies of knowledge and learning and the resurgence of interest in the geographies of education. It will examine through empirical
research how business and management education shapes the continued geographical variation within the global economy.

**Geographies of economic elite employability**

Supervisor:  **Sarah Hall**  (sarah.hall@nottingham.ac.uk)

This project contributes to the resurgence of interest in elites within the social sciences. It does so through focusing on the neglected, but important, issue of early career elites. The project will examine the strategies used by early career elites in securing entry into and upward mobility within elite global labour markets and the consequences of this for both elites themselves and the corporations they work for.

**Geographies of financialization**

Supervisor:  **Andrew Leyshon**  (andrew.leyshon@nottingham.ac.uk)

**Geographies of the musical economy**

Supervisor:  **Andrew Leyshon**  (andrew.leyshon@nottingham.ac.uk)

**Neo-liberalism and regional change**

Supervisor:  **Adam Swain**  (adam.swain@nottingham.ac.uk)