NEXUSS CDT Research Experience Placement Supervisor Proforma 2018

Lead Supervisor:	Dr Booker Ogutu
Email:	B.O.Ogutu@soton.ac.uk
Other supervisors	Dr Jane Catford, Dr Marije Schaafsma and Dr Becks Spake
University/Research Organisation:	University of Southampton
Department:	Geography
Project Title:	The use of remotely sensed data to evaluate vegetation condition and dynamics at a Ramsar wetland site

Total Student Support Costs:	£2000 (£200 for 10 weeks)
Based on a minimum of £200/week full time for a minimum of 8 weeks and maximum of 10 weeks and a £500 Research and Training Support Grant.	

Proposed Start Date: **Monday, 19 June 2018**	Proposed End Date: **August, 31 2018**
Projects should run over the summer vacation and we recommend that projects will have terminated by 21 September 2018.	

Brief Summary – please provide a brief summary (maximum 300 words) of the project.
This should include:
- *Project outline;*
- *Links to staff/School/Centre activity as appropriate;*
- *Supervisory arrangement;*
- *How space/equipment/supporting resource demands will be met;*
- *Elements of the project that will incorporate elements other than computer/modelling e.g. fieldwork and data collection;*
- *How the project will enhance the skills of the appointed student;*
- *Any intellectual property rights concerns that may arise from the work.*

Project
The intergovernmental Ramsar Convention treaty provides the framework for the conservation and wise use of internationally significant wetlands. The effectiveness of Ramsar designation in promoting wise use of wetlands has principally been measured by assessing changes in wetland bird populations before and after designation. However, there has been little evaluation of designation impact on aspects such as vegetation condition.

This project aims to use remote sensing (RS) data to evaluate the condition and dynamics of vegetation in the Elephant Marsh wetland and its wider catchment in Malawi, a recently designated Ramsar site. The project will use freely available RS data to characterise vegetation

change, identify encroachment into the Marsh, and evaluate the land cover/land use change in the catchment of the wetland. Results from this study aim to improve management and wise-use policies of this wetland.

Supervision
Dr Booker Ogutu-Remote Sensing (Lead supervisor), Dr Jane Catford- Ecologist, Dr Marije Schaafsma- Environmental Economist, and Dr Becks Spake -Biogeographer, will jointly supervise the project.

Links to staff
This project supports the supervisors' FSHMS-SIRDF-funded development of a research proposal for the Elephant Marsh, which aims to redress its governance to enhance local benefits and biodiversity outcomes.

Space and equipment
Data are free, a desktop computer and relevant software are available (in the PGR hub) in Geography.

NERC remit
Terrestrial and freshwater environments subject; ecosystem-scale processes and land use research area.

Skills
The student will gain skills in remote sensing, data collation, R statistical programming and GIS. The student will also have an opportunity to learn how to conduct vegetation surveys with Dr. Catford on grasslands and coastal wetlands near Southampton. The student will be encouraged to present in seminars in Biology and Geography to develop their communication skills.

IP
The student will co-author any publication leading from this project.

Please give an indicative timescale for the student's work over the length of the project: (maximum 150 words).
This should include:
- *The broad tasks the student will undertake;*
- *An indicative timescale for these tasks.*

Broad task	Aim	Required time / weeks	Commencement date
Literature review	Definition of the key topics (characteristics and drivers of vegetation change); identification of knowledge gaps.	1	18 June 2018
Data screening and collation	Collate freely available remote sensing data (partly identified by the supervisors)	2	25 June 2018
Data preparation	Use GIS, Remote Sensing and R statistical software to combine datasets and prepare data for analysis	2	9 July 2018
Fieldwork	Gain experience in the field with Jane Catford's lab	1	23 July 2018
Data analysis	Use GIS, Remote Sensing and R statistical software to conduct image and statistical analysis	3	30 July 2018

Reporting	Write a report that summarises the research findings and present results	1	20 August 2018	

Proposed procedure for appointing students, including selection criteria:
Please identify specific criteria that should be considered for the selection of placement students e.g. specific quantitative skills that may be required, subject knowledge etc. If a student has been pre-selected, or the research area has been led by the student, please provide the student's contact details, and a summary of their suitability for the NEXUSS CDT REP programme.

The student must have basic grasp of remote sensing concepts. Furthermore, the student must have strong quantitative skills, basic skills in use of GIS and remote sensing software, and basic data manipulation. The student must have interest in sustainability science and interdisciplinary research.

We will request that interested applicants submit a 300-word statement outlining their interest in the project, and a two-page CV to demonstrate their skills. We will short-list a maximum of three applicants for interview.