**Division (delete as appropriate):**  Health Sciences

**Project Title:**  Analysis of the health, well-being, and life satisfaction of people who live in slums using observational data

**Application Deadline:**  15th June 2018

**Degree (delete as appropriate):**  PhD

**Mode of Study (delete as appropriate):**  Full time

**Project suitability (delete as appropriate):**  Home / EU

**Supervisor(s):**  Samuel Watson, Celia Taylor

**Funding body (please tick as appropriate):**  Other (please specify)

**Has the funding been awarded?:**  Yes

**If the project requires consumables, please specify the amount and who is responsible for covering the cost:**  Reasonable consumables relating to project fieldwork will be funded by the NIHR Global Health Research Unit, subject to approval.

### Project Summary including key research questions, aims and anticipated outcomes (max 300 words)

The rapid pace of urbanisation in many low and middle income countries has led to the substantial growth of slums and informal settlements. As a result there has been an increase in the prevalence of health and social issues associated with living in slums, but little is known about the general health status, well-being, and life satisfaction of those that live in these areas and how it is affected by their social and economic circumstances.

This project will form part of the NIHR Global Health Research Unit on Improving Health in Slums currently conducting work in Nigeria, Kenya, Pakistan, and Bangladesh. It will make use of the multi-site cross-sectional household survey data from eight slums, as well as any other relevant data sources, such as DHS surveys and the longitudinal NUHDSS based in Nairobi, Kenya. The aim of the project is to use statistical and econometric observational data modelling techniques to understand the variation in and factors that affect health status, well-being, and life satisfaction. Specific analyses may include, but are not limited to: modelling the relationship between health, well-being, and life satisfaction; a geo-spatial analysis of health, well-being, and life satisfaction across slum sites; modelling the relationship between social and economic circumstances, and particularly the role of access to health care, in determining health, well-being, and life satisfaction.

The project will serve to contribute towards understanding the lives of the urban poor to inform urban, health, and public policy. We would anticipate that these analyses would generate papers for submission to peer-reviewed journals, we would also anticipate the
Describe the methodology and techniques to be employed (max 200 words)

This PhD will be based in the NIHR Global Health Research Unit on Improving Health in Slums that is addressing health services in slums in 4 countries (Nigeria, Kenya, Pakistan, Bangladesh). The student will be embedded in an interdisciplinary, international team and have access to training programmes.

This project will predominantly make use of applied statistical and econometric modelling techniques for observational data. The key data source for the proposed analyses will be the multi-site cross-sectional household survey being currently conducted in eight slum sites across four countries. Proposed specific analyses include, but are not limited to the following:

- Exploratory analysis of the relationship between health status, well-being, and life satisfaction. This would use graphical analysis techniques and hierarchical modelling methods to explore the variance and covariance in these measures.
- Geo-spatial analysis of health, well-being, and life satisfaction within slum sites. The development and application of generalised geo-statistical models to explore the geospatial variation in the key outcomes and its relation to salient features including health facilities, roads, refuse, and rivers.
- Modelling the relationship between social and economic circumstances, and particularly the role of access to health care, in determining health, well-being, and life satisfaction.

We envisage the development of Bayesian methods and the use of statistical software R and Stan, but specific methods will be developed in conjunction with the student. A student with a Masters or good undergraduate degree in statistics or economics or other quantitative field with an interest in global health would be ideally suited to the role.