We are inviting proposals for PhD research projects under our five-year programme “Transformative Innovation, the 4th Industrial Revolution and Sustainable Development”. Funded by the South African National Research Foundation and the British Council, the programme is a research collaboration between the University of Johannesburg, the African Centre for Technology Studies (ACTS) in Nairobi and the Science Policy Research Unit (SPRU) at the University of Sussex in the UK. The programme builds on the expertise of three partners to strengthen African scholarship for examining transformative innovation and its policy dimensions, in the context of the fourth industrial revolution (4IR) and efforts to achieve sustainable development. Over the course of the programme, we expect to support a total of eight PhD projects with full studentships: five based at the University of Johannesburg, two based at Jaramogi Odinga University of Science and Technology (JOUST) in Kenya, and one based at SPRU in the UK. All PhD candidates will undertake joint workshops and short training courses in South Africa, Kenya and the UK, and PhDs will involve some degree of joint supervision across the partner organisations. In addition, the PhD research programme will engage with the Transformative Innovation Policy (TIP) Africa Hub, with the aim of bridging research and policy-making by involving students with the narratives, practices and networks of policy experimentation.

We invite prospective candidates to submit a short research proposal as part of their PhD application. Preference will be given to proposals that involve comparative research between two or the three related countries (South Africa, Kenya and the UK). Details of what is expected in a proposal, and how to apply, are given below.

Background information

The 4IR has taken centre-stage in academic and policy debates due to its potential to transform economies and societies across the world. Rapid technological advances in artificial intelligence, robotics, the internet of things, biotechnology and others are likely to have considerable impacts in our production, consumption and social systems. While acknowledging that the magnitude of change is likely to be unprecedented, the direction of such change remains uncertain. There is an increasing realisation that, if the direction of change is not carefully steered, the 4IR will exacerbate existing social challenges. A commonly identified risk is that 4IR technologies could leave millions of people across the world without jobs, intensifying income inequalities. In this respect, the challenges faced by African countries are considered greater than those faced by technologically advanced countries.

Klaus Schwab, who invented and pushed the concept through the World Economic Forum, listed 23 shifts comprising the 4IR. Although these shifts identify areas of disruption, they offer no assessment of the impact on sustainable development, which must incorporate the thorough integration of both social and environment sustainability if we are to achieve the transformation ambitions expressed in the Sustainable Development Goals (SDGs).
Our five-year research programme aims to develop and test new theoretical frameworks to understand transformation, in the context of the 4IR and from an African perspective, by unpacking the social and technological relationships that explain the rate, direction and patterns of (radical) innovation adoption, diffusion and use.

The literatures on innovation systems and socio-technical transitions constitute the pillars of our approach in this programme. Both theoretical streams provide important insights for policy, paying attention to the institutional environment in which new technologies develop and diffuse. However, these literatures hardly interact with each other and their application in Africa remains limited. By using the transformation lens, we will also look at the governance and policy issues of how to exploit the transformative potential of 4IR technologies to address the SDGs.

Our main research question is thus twofold: (a) how are changes in innovation and socio-technical systems influenced by the rapid technological developments under the 4IR? and (b) how can the transformative potential of these changes be exploited to encourage sustainable development?

**PhD research topics**

We are seeking PhD proposals for social science research that can inform the agenda outlined above. Ideally, proposals will be interdisciplinary, relevant to socio-technical and innovation system approaches, and each will outline a creative and imaginative doctoral research project designed around a specific research question.Whilst the specific research question is to be determined by the applicant, we welcome proposals that focus on African contexts in any one or combination of the following four areas: energy, mobile money, agricultural biotechnologies and industrial production systems.

**Eligibility**

a) Applicants should preferably have a Masters in Economics, Political Sciences, or related disciplines, with demonstrated interest in sustainable development and innovation. Preference will be given to applicants with interdisciplinary Masters in relevant fields: e.g. Innovation Studies, Development Studies, etc. (However, suitable students from any disciplinary background can be considered – see below)

b) The research pre-proposal must demonstrate interdisciplinary methodological skills.

**Student selection will be based upon evaluation of:**

1) A short pre-proposal (maximum 10 pages) describing the candidate’s proposed PhD research. Pre-proposals will be selected on the basis of the alignment of the proposed research with the theme of this Call.

2) A short motivation explaining how the pre-proposal aligns with the thematic focus of this programme

3) Candidate’s CV

4) A recommendation letter from a supervisor and/or senior scholar familiar with the applicant’s trajectory.
ONLY FOR APPLICANTS TO THE UNIVERSITY OF JOHANNESBURG

A maximum of 5 applicants will be selected under this call at the University of Johannesburg.

The selection of applicants at the University of Johannesburg will follow the South African Ministerial guidelines for grant-funded students, where priority will be given to South African nationals, black and female applicants.

PhD pre-proposal structure

The pre-proposal should be no longer than 10 pages, and must include the following:

1) Introduction
2) Summary of Preliminary Literature Review
3) Theoretical/Conceptual Framework
4) Main research question and/or research objectives
5) Planned research methodology
6) Proposed structure of study
7) References

PhD studentship

Selected applicants will receive a bursary to cover their tuition fees and basic living expenses, in line with the National Research Foundation guidelines.

Students will have to be registered as full-time students in order to receive a bursary.

Doctoral degree studies require a minimum of two years and a maximum of five years registration for full-time studies.

PhD application process

Selected applicants will have to go through the regular application process at the University of Johannesburg.

Students will register under one of the following PhD programmes:

- PhD in Economics with specialisation in Innovation (background in Economics required)
- PhD in Public Management and Governance with specialisation in Innovation (any disciplinary background can be considered)

Key dates

Deadline for submission of applications: 6th October 2019

Applications must be submitted to Ms Cebekulu at thembelac@uj.ac.za

Content-related questions for applicants at the University of Johannesburg can be sent to erikakm@uj.ac.za