

## Call for applications: PhD bursary for 2022

### Social-ecological regime shifts in the Anthropocene

**Deadline for applications: 12 June 2021**

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#### Project background

We live in a new planetary era – the Anthropocene - where human activities have become a major driver of ecosystem dynamics at local to global scales. There is growing evidence that the risk of transgressing tipping points that could trigger catastrophic environmental and societal regime shifts, such as the collapse of important fisheries or collapse of the Greenland ice sheet, are increasing. Such regime shifts threaten the supply of essential ecosystem services on which human societies depend - including provisioning (e.g. crops), regulating (e.g. flood regulation), and cultural (e.g. recreation) services - and can have major impacts on economies, security and health. Better understanding of the potential risks and consequences of regime shifts has been identified as one of five grand challenges for Earth system and sustainability science, and an urgent priority in informing policies to advance sustainable development and build resilience to unexpected changes.

The South African Research Chair (SARChI) in Social-Ecological Systems and Resilience, held by Prof Reinette (Oonsie) Biggs aims to contribute theory, methods and understanding that can help address this challenge by improving our capacity to assess risks and build resilience to high-impact regime shifts that may jeopardize ecosystem services and human well-being. This thematic area of work under the Chair builds on the Regime Shifts Database initiative ([www.regimeshifts.org](http://www.regimeshifts.org)) that is being conducted in collaboration with the Stockholm Resilience Centre in Sweden, and has provided a platform for several student projects and internships. The core goals of the initiative are to provide a synthesis of regime shifts that have occurred in different social-ecological systems, their drivers and consequences for ecosystem services and human well-being, and identify potential strategies for building resilience to undesirable shifts or encouraging transformations to more desirable regimes. A new strand of work is to explore the historical trajectories of interlinked economic, ecological and social regime shifts across time and space, and how a shift in one of these dimensions may triggers further regime shifts in other dimensions at other places and times.

#### Centre for Complex Systems in Transition, Stellenbosch University

The Centre for Complex Systems in Transition (CST, <http://www.sun.ac.za/cst>) builds on a strong history of transdisciplinary research and complexity studies at Stellenbosch University, providing a vibrant hub for solution-oriented sustainability science that hosts leading scientists and students from diverse disciplinary backgrounds in a state-of-the-art research centre. The primary objective of the CST is to provide transformational knowledge on the dynamics of multi-scale social-ecological change, and strategic insights into the new modes of research and governance that can bring about a just transition to a more equitable and sustainable society, in southern Africa and globally.

#### Call for applications

We seek motivated individuals interested to pursue a PhD linked to the Regime Shifts Database initiative, who have a keen interest in sustainability-related research, an interest and ability to integrate across the social and natural sciences, and who enjoy collaboration and working in teams. Interested individuals should have a strong academic track-record, participate in the events and activities of the CST, and be interested in developing a career around topics such as social-ecological systems, thresholds and regime shifts, resilience and risk, complexity thinking, and sustainability transformations. A variety of potential topics could be pursued, relating to one or more of the following:

- Human well-being impacts of different regime shifts
- Impacts of different regime shifts on social and gender equity

- Historical trajectories of interlinked economic, ecological and social regime shifts, drawing for instance on insights from economic history

Supervisors will include Prof Reinette (Oonsie) Biggs, and one or more CST researchers, depending on the topic. Studies will generally be registered within the CST's PhD in Sustainable Development in the Faculty of Economic and Management Sciences, but other options can be considered.

### **Funding**

Bursaries will be funded from the DST/NRF SARCHI chair held by Prof Biggs. The NRF minimum academic requirement for PhD funding is 65% average for the preceding Masters degree. Applicants for doctoral funding must be 32 years of age or younger in the year of application.

Successful applicants will be funded either at Full Cost Study (FCS) or Partial Cost of Study (PCS). The FCS funding will be awarded to South African citizens and permanent residents only, who are either financially needy (i.e., those whose combined household family income is less or equal to R350 000 per annum), living with a disability, or exceptional academic achievers. PCS funding will be awarded to 5% of international students including South African citizens and permanent residents who could not be funded under FCS but meet other minimum requirements for the NRF scholarship funding criteria.

Subject to availability of funds, CST aims to top-up NRF funding to R 138,000 pa (R 11,500 per month). Tuition and reasonable running and travel expenses will also be covered where possible. Successful completion and defense of a research proposal within the first year will be a pre-requisite for continuing with the PhD.

### **Requirements**

Potential PhD candidates should have completed a Masters degree or equivalent. Quantitative analytical skills will be an advantage. All candidates should show evidence of strong scholarly performance. Based on the National Research Foundation's funding guidelines, strong preference will be given to South African nationals and under-represented groups.

### **To apply**

Applications will follow a 2-step process:

#### **Step 1. Apply to CST**

All interested candidates should first apply to the CST by emailing the following documents to [cstenquiries@sun.ac.za](mailto:cstenquiries@sun.ac.za) by **12 June 2021** with the subject line "**PhD application: Regime Shifts**":

- a motivation letter (detailing your previous academic and work experience, and how your experiences and skills speak to the proposed research topic, as well as your specific interests with regard to the proposed project),
- a detailed CV that includes your academic record, previous work experience, any scientific publications on which you have been an author, and the names of at least two academic referees,
- transcripts of academic qualifications,
- at least one example of recent written work (e.g. a paper, report, thesis chapter).

#### **Step 2. Apply to NRF**

Suitable candidates will then be instructed to apply on the NRF system by **1 July 2021**, and link their application to Prof Biggs' SARCHI Chair. Instructions on this process will be communicated to successful applicants in step 1.

***Please note that funding will only be awarded to candidates selected and approved by the NRF.***

### **Enquiries**

Enquiries can be directed to [cstenquiries@sun.ac.za](mailto:cstenquiries@sun.ac.za). Please use the subject line "**Enquiry: PhD Regime Shifts**", as enquiries about multiple adverts are being directed to this address.