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Reducing the rate and impacts of biological invasions

20 July 2012

One NRF Bursary Available for MSc/PhD Studies

Modelling Co-Evolutionary Networks

A NRF MSc/PhD bursary is now available. This bursary is supported by a CPRR-NRF grant for *Modelling the co-evolutionary dynamics of ecological networks: the emergence of network architecture*. In contrast to the traditional belief of a random network, ecological systems were found to be highly heterogeneous, coined the small-world and scale-free networks. Identifying network architecture (e.g. nestedness and compartmentalization) and unraveling mechanisms that give rise to distinctive network architecture have become one of the hot contended fields in science. Two fundamental questions that need immediate attention emerge from our recent studies: (i) what mechanisms and processes are behind highly heterogeneous networks; (ii) what the relationship is between the network architecture (e.g. nestedness and compartmentalization) and robustness (e.g. persistence and resilience). That is, how to link processes to patterns and then patterns to function. Since multiple biological mechanisms could be responsible for a single ecological pattern, an integrative and quantitative understanding of the emergence of distinctive network architecture is needed.

The student will likely be supervised by a team led by Dr. Cang HUI at the C·I·B in Stellenbosch University. Students with good modeling skills or having a good understanding of ecological networks will be favored. Please send your enquiry directly to CH (chui@sun.ac.za; 021 808 3413). As according to the NRF policy, South African candidates will be given the priority.

Find out more: http://academic.sun.ac.za/cib/team/academic/chui.asp

Colleagues with appropriate candidates in mind can also contact CH for potentials of a joint supervision.