BACKGROUND

We believe that innovation in research can only be propelled by amalgamating skills and perspectives from different disciplines into an overarching framework. In that sense, we want to capitalize on the newest developments in genomics and computational biology paired with classical ecological work to understand how avian speciation works in complex and changing environments.

The “great speciator” bird genus Zosterops, also known as white-eyes, shows a remarkable speciation rate which is unprecedented in birds and one of the highest among vertebrates. This diversification is partly driven by adaptation to rapidly changing environments – yet, the exact processes remain unknown. Therefore, these iconic birds pose an ideal study system to learn more about speciation in a changing world.

WHAT WE OFFER

We have one fully funded PhD position available to work with Prof. Luc Lens and Dr. Jan O. Engler at the Terrestrial Ecology Unit at Ghent University. The position is available for 2+2 years and a salary range of 1900 - 1950€ / Month (+ benefits). The preferred, yet negotiable, starting date is 1st of October 2018. The PhD can be conducted in one of two topics.

TOPIC 1: GENOMICS OF WHITE-EYE DIVERSIFICATION
Jointly with Asst. Prof. Alexander Suh, Dept. of Ecology and Genetics, Uppsala University
Recent insights into rapid species diversification using genomic tools question the notion of vertical processes as leading evolutionary force in favor of network-like structures in which vertical and lateral evolutionary drivers act in concert, e.g. when hybridization leads to adaptive introgression. Using de novo assemblies and whole-genome resequencing of different highland-lowland white-eye lineages across East African sky-islands you will study the role of lateral processes and understand the evolutionary role of genes introgressed that way.

TOPIC 2: SIMULATING SPECIATION IN DYNAMIC ENVIRONMENTS
Jointly with Prof. Juliano Cabral, CCTB, University of Würzburg.
Different speciation models aim to formally describe evolution along elevational gradients. To assess how these speciation models describe white-eye diversification, you will implement a Mechanistic Simulation Model that is spatially-explicit, individual-based, and stochastic, incorporating all processes relevant for biodiversity dynamics. You will run the model under neural and adaptive (informed by genomic outcomes) conditions to understand the role of lateral processes of speciation in changing environments.

Candidates should have an excellent MSc degree in a relevant field, are self-driven, and eager to work in an interdisciplinary and multilateral team. Next to quantitative skills relevant for the respective topic, we expect generally high writing and verbal communication skills to present results of your work in academic journals and at international conferences.

To apply send your complete application, including motivation letter, full CV, publication list, and contact details of two references alongside your preferred topic to Zosteromics@ugent.be. Deadline is 3rd of April 2018.