



## PhD Projects Available: The Evolutionary Origins of Family Life

The BEER Group at the University of Tasmania and The Lizard Lab at Macquarie University have two exciting, fully funded (@ \$27,082/year), PhD projects available. The projects are linked to an ARC Discovery Project recently awarded to Geoff While and Martin Whiting (in collaboration with Tobias Uller and Charlie Cornwallis; University of Lund). Its aim is to reveal the evolutionary origins of social living in lizards. If you are an enthusiastic and passionate student who is interested in understanding why animals live together and enjoys being part of a vibrant research environment then please email Geoff ([gwhile@utas.edu.au](mailto:gwhile@utas.edu.au)) or Martin ([martin.whiting@mq.edu.au](mailto:martin.whiting@mq.edu.au)) with an expression of interest and your CV. Further details on the projects can be found below.

### Background

Explaining why complex cooperative societies have evolved is a major challenge in evolutionary ecology. While we have gained tremendous insights into the processes responsible for the maintenance of complex sociality, we know comparably little about the processes responsible for its origins. To address the latter we need to study taxa which exhibit a broad diversity of social systems, including simple and facultative social groups. *Egernia* lizards have the right features as they range from solitary species to species with different social (family) group sizes and complexity. This provides us with a unique opportunity to focus on the conditions that allowed for an initial emergence of social associations between family members from an ancestral solitary state and how this has facilitated steps towards greater social complexity.

### The Projects

Complex social organisation should emerge, first and foremost, when individuals regularly interact with one another. Theoretically, it is predicted that this process will be aided by phenotypic plasticity, since this enables individuals to make facultative decisions on whether or not to stay with their natal group. However, the causal role of phenotypic plasticity in transitions between levels of social complexity has received limited attention. We have two available PhD projects that will directly address this short coming. Specifically, these projects will use a combination of detail field and experimental studies with state-of-the-art molecular and comparative methods to examine a) how local ecology induces social plasticity in solitary species; b) how social interactions are refined in social species; and c) whether within-species plasticity predicts between-species divergence in social complexity. Combined these projects will provide key insights into the fundamental processes underlying the evolution of family units and the helping behaviour that characterise cooperative societies across animals.

Deadline for applications for these two PhD projects is the 31<sup>st</sup> of March 2018 with an expected start date of June – August 2018 in time for the field season. For more information on the research groups please see [www.beergrouputas.wordpress.com](http://www.beergrouputas.wordpress.com); [www.whitinglab.com](http://www.whitinglab.com); [www.ullergroup.se](http://www.ullergroup.se); [www.charliecornwallis.org](http://www.charliecornwallis.org).

