

## Genevieve Diedericks

PhD thesis entitled: *Determining the mechanisms driving the invasion success of the smallmouth bass (Micropterus dolomieu, Lacepède 1802)*

Supervisor: Prof Cang Hui,

Co-supervisors: Prof Sophie von der Heyden, Dr Olaf L. Weyl

Nature never ceases to amaze me! Born and raised in South Africa, a beautiful country with a wealth of biodiversity and endemism, I was inspired to pursue a career in Zoology. However, due to the multitude of organisms and systems we are blessed to be able to choose from, I decided to follow the 'jack-of-all-trades' route. My fascination with genetics and population structuring became the basis for my research, while incorporating ecology, the environment and a species' life history characteristics to explain the genetic patterns observed. For my BSc honours project I looked at the karyotype and genetic placement of the Grey rhebuck (*Pelea capreolus*), while working on the genetic structuring of the Cape girdled lizard (*Cordylus cordylus*) for my MSc. Currently I am busy with my PhD, looking at the mechanisms driving the invasive success of the smallmouth bass (*Micropterus dolomieu*) in South Africa.

Though *M. dolomieu* is known for its invasiveness, relatively few studies (neither in its native or invasive range) have been conducted on this species, with most drawing their conclusions from studies undertaken on the sister species, the largemouth bass, *M. salmoides*. It is, however, known that *M. dolomieu* can invade and establish itself in a range of habitats in a very short period of time, and significantly alter freshwater habitats in their introduced range, thus making it an ideal template taxon for elucidating the characteristics of invasiveness. By utilizing an array of methods, spanning different disciplines, I aim to evaluate the potential mechanisms driving a species' invasive success.

### Publications:

Broeckhoven, C., Diedericks, G., Hui, C., Makhubo, B.G., Mouton, P. le F.N. Enemy at the gates: rapid defensive trait diversification in an adaptive radiation of lizards. **Evolution**. doi: 10.1111/evo.13062.

Minoarivelo, H.O., Diedericks, G., Hui, C. 2015. An introduction to phylogenetic analysis and modelling in ecology. **Computational Ecology and Software**. 5(4): 328-339.

Broeckhoven, C., Diedericks, G., Mouton, P. le F.N. 2015. What doesn't kill you might make you stronger: Functional basis for variation in body armour. **Journal of Animal Ecology**. 84(5): 1213-1221.

Diedericks, G., Daniels, S.R. 2014. Ain't no mountain high enough, ain't no valley low enough? Phylogeography of the rupicolous Cape girdled lizard (*Cordylus cordylus*) reveals a generalist pattern. **Molecular Phylogenetics and Evolution**. 71: 234-248.

**Robinson, T.J., Cernohorska, H., Diedericks, G., Cabelova, K., Duran, A., Matthee, C.A.** 2014. Phylogeny and vicariant speciation of the Grey Rhebok, *Pelea capreolus*. *Heredity*. 112(3): 325-332.

### Conference Proceedings:

**Diedericks, G., Daniels, S.R.** "Delineating the biogeographical patterns of two co-distributed Squamata, *Cordylus cordylus* and *Pachydactylus maculatus*, in South Africa", Mediterranean Congress of Herpetology **2011**. Marrakesh, Morocco - Poster.

**Diedericks, G., Daniels, S.R.** "Delineating the biogeographical patterns of two co-distributed Squamata, *Cordylus cordylus* and *Pachydactylus maculatus*, in South Africa", Zoological Society of South Africa Conference **2011**. Stellenbosch, South Africa - Poster.

**Diedericks, G., Daniels, S.R.** "Ain't no mountain high enough, ain't no valley low enough? Attaining biogeographical barriers using *Cordylus cordylus* as template taxon", SEH 17th European Congress of Herpetology **2013**. Veszprém, Hungary - Oral Presentation.

**Diedericks, G., Von der Heyden, S., Weyl, O.L.F., Hui, C.** "Does source-sink dynamics facilitate the invasive success of *Micropterus dolomieu*". Aquatic Biodiversity and Ecosystems **2015**. Liverpool, United Kingdom - Oral Presentation.

**Diedericks, G., Broeckhoven, C., Hui, C., Makhubo, B.G., Mouton, P. le F.N.** "Enemy at the gates: rapid defensive trait diversification in an adaptive radiation of lizards", 8th World Congress of Herpetology **2016**. Hangzhou, China - Oral presentation.

### Popular articles:

- Nature Scitable blog: [http://www.nature.com/scitable/blog/accumulating-glitches/body\\_armor\\_is\\_not\\_always](http://www.nature.com/scitable/blog/accumulating-glitches/body_armor_is_not_always)
- New Voices in Science 2015 popular article. [pdf](#)

### Awards:

- 2013: Runner-up: MSc presentation at the 17th SEH European Congress of Herpetology, Veszpre, Hungary
- 2015: Runner-up: Best PhD presentation at the DST-NRF Centre of Excellence for Invasion Biology Annual Research Meeting, Stellenbosch
- 2015: New Voices in Science finalist - Popular article
- 2015: New Voices in Science finalist – Photograph
- 2016: Full travel scholarship (representing Africa) to the 8th World Congress of Herpetology, Hangzhou, China

### Links:

- Website: <https://sites.google.com/site/geneviediedericks/>
- Google Scholar: <https://scholar.google.co.za/citations?user=kh3dRwoAAAAJ&hl=en>
- ResearchGate: [https://www.researchgate.net/profile/Genevieve\\_Diedericks](https://www.researchgate.net/profile/Genevieve_Diedericks)