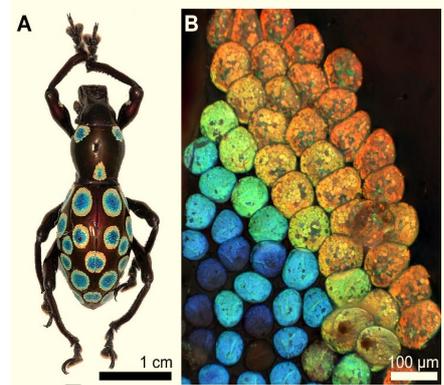


# PhD Project – Nature’s ways to manipulate light

## Commencing 2023

Supervisor: Professor Devi Stuart-Fox  
The University of Melbourne

<https://findanexpert.unimelb.edu.au/profile/155120-devi-stuart-fox>  
[Google scholar publications](#)  
[Personal website](#)



Seago et al. 2008, Wilts et al 2018

Are you interested in how animals produce complex and intriguing colors? Are you open to interdisciplinary research at the intersection of biology and physics (optics and thermodynamics)? This PhD project will investigate the microscopic structures that produce colour (and manipulate light more broadly) in beetles and/or lizards, with applications for bioinspired materials. The project is supervised and fully funded and supported by Prof. Devi Stuart-Fox and collaborators. We are a supportive, diverse, well-resourced lab, and we have fun while doing good science 😊. The student would be based in the School of BioSciences at the University of Melbourne with scope to collaborate more widely.

### Project Description

Colours in nature have been used as a source of inspiration to develop bioinspired materials, but we need to think beyond colour. We need to know how structures that produce amazing colours also ‘optimise’ temperature control, mechanical strength and other properties. This project will focus on multifunctional materials in nature, with an emphasis on colour and infrared properties. There is scope and flexibility to work on different systems (there is funding for beetles or lizards). Techniques would include a range of advanced imaging/microscopy approaches, spectrometry, potentially some liquid chromatography-mass spectrometry for pigment identification. The student will be an integral part of the team, will work with collaborators in different disciplines and institutions and will have the opportunity to develop their own research interests throughout their PhD.

### Location

The University of Melbourne is situated just north of central Melbourne, and is surrounded by good restaurants, bars, cafes. Melbourne always has something to see or do, including great food, music, theatre, or sport. You will have the opportunity to see what Melbourne has to offer with the supportive team of students, postdocs and academics that you will join. The School of BioSciences hosts a vibrant, diverse research community and provides access to cutting edge equipment.

### Requirements

The successful applicant will be assisted in applying for a [Graduate Research Scholarship](#) through the University of Melbourne. These awards are competitive, so a First-class Honours or Masters Degree (or equivalent) is essential.

To apply, please email me by **15 September** briefly outlining your research interests and attach **1)** a CV with contact details for two referees (including a research supervisor) and **2)** your academic transcript/grades. Scholarship applications are due 30<sup>th</sup> September, so it is essential that we meet to discuss options well before the application deadline.

Any questions or for further information, please contact Devi Stuart-Fox, [d.stuart-fox@unimelb.edu.au](mailto:d.stuart-fox@unimelb.edu.au)