



Australian  
National  
University



筑波大学  
University of Tsukuba

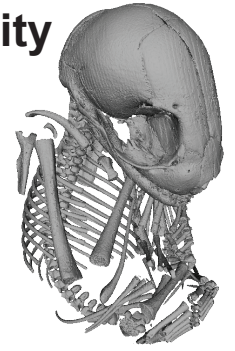


MONASH  
University



## PhD opportunity at the **Australian National University**

We are offering a fully-funded 3 year PhD position at the Australian National University. The project will employ 3D modelling and develop shape analysis methods to study skeletal growth in bats.



### PROJECT BACKGROUND

Bats possess some of the most extreme mammalian adaptations. Having evolved both echolocation and self-powered flight, bats underwent one of the greatest adaptive radiations in mammalian history, which enabled them to exploit an enormous untapped foraging niche: insects in the night sky. Bat echolocation is considered one of the most complex and diverse modes of sensory perception in animals, but its origin and evolutionary history is a highly contentious issue that remains unresolved. This is due to difficulty in inferring the echolocation capabilities of fossil species, along with a lack of molecular markers for echolocation in bats and their potential relatives. The broad aim of this project is to combine insights from craniofacial development, evolution and form-function engineering tests to uncover echolocation traits and assess how differences in cranial shape relate to sound production.

### THE PHD PROJECT

The PhD student will use developmental series to quantify craniofacial growth patterns across echolocating and non-echolocating bats and their mammalian relatives, developing novel approaches to identify and characterise macroevolutionary variation in the development of cranial bones.

### THE PROJECT TEAM

The PhD student will work with a multi-disciplinary team of researchers, led by Dr Laura Wilson at ANU, in collaboration with Assoc. Prof. Daisuke Koyabu (University of Tsukuba, Japan), Prof. Sue Hand (UNSW) and Assoc. Prof. Alistair Evans (Monash University).

### THE STUDENT

The successful applicant must have an excellent grade (i.e. H1 or HD) in an Honours or MSc research program in a relevant subject area and proven skills in scientific writing. The student should have a strong quantitative background in evolutionary morphology/biology or zoology and a willingness to learn 3D modelling approaches. Experience with microCT, diceCT or geometric morphometrics is desirable.

### THE INSTITUTION

The Australian National University is a member of the Group of Eight, Australia's leading research-intensive universities, and is ranked 31st in the world (QS World Rankings 2021). The student will be embedded with the ARC ITTC on multiscale 3D imaging, modelling and manufacturing at the ANU: <https://m3d.edu.au/>  
To find out more about research in our labs, please see: Wilson - <https://tinyurl.com/h9tctbmh>, Koyabu - <https://tinyurl.com/jphbnxdh>, Hand - <https://tinyurl.com/5xjspr26>, Evans - <http://evomorph.org>.

### APPLICATIONS

Interested applicants should send a cover letter outlining their motivation and experience, an academic CV, and a list of contact information for 1-3 academic referees to Dr Laura Wilson ([Laura.Wilson@anu.edu.au](mailto:Laura.Wilson@anu.edu.au)) by **3 Sept 2021**. This domestic scholarship is open to Australian citizens and permanent residents.

The successful candidate will be awarded a 3-year PhD scholarship (~AU \$28,597 p.a. tax free [2021 rate], indexed annually), commencing Oct-Nov 2021.