KATARINA STUART
Curriculum vitae

Evolution & Ecology Research Centre
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RESEARCH INTERESTS

My interests are in invasion biology, exploring the evolutionary mechanisms that drive a successful invasive species. Successful introduced species pose an ecological and financial threat in their invaded range, but also provide an important opportunity to observe rapid evolution within a species as it responds to new ecosystems. Studying the genetic and phenotypic change in invasive species is of great interest to me, as this has applications in many scientific fields, including but not limited to pest control, conservation, organism response to climate change, and general evolutionary mechanisms.

Invasive species; rapid evolution; bioinformatics; genomics; population ecology

EDUCATION

Doctor of Philosophy (Biology) - University of New South Wales 2018-present

Bachelor of Science (Advanced) (Honours) - University of Sydney 2013-2017
Thesis Title: *Mechanisms generating geographic divergence in phenotypic traits within the invasive cane toad in Australia*
Supervisors: Professors Richard Shine & Gregory Brown

PUBLICATIONS

-Preprint-

3. Cardilini APA[†], Stuart KC[†], Cassey P, Richardson MF, Sherwin W, Rollins LA[*], Sherman CDH[*]. (2019) Local signatures of founding populations confound examination of adaptive divergence in invasive populations. *BioRViX*, https://doi.org/10.1101/643569 ([†] indicates joint first authorship, [*] indicates joint last authorship)

-2019-

2. Stuart KC, Brown GP, Shine R. (2019) Proximate mechanisms underlying the rapid modification of phenotypic traits in cane toads (*Rhinella marina*) across their invasive range within Australia. *Biol J Linnean Soc*. 126(1):68-79, https://doi.org/10.1093/biolinnean/bly150

-2018-

1. Hudson CM, Brown GP, Stuart KC, Shine R. (2018) Sexual and geographical divergence in head widths of invasive cane toads, *Rhinella marina* (Anura: Bufonidae), is driven by both rapid evolution and plasticity. *Biol J Linnean Soc*. 124(2):188-99, https://doi.org/10.1093/biolinnean/bly040

GRANTS, SCHOLARSHIPS, & AWARDS

Scholarships
Australian Government Research Training Program Scholarship 2018-2022

Grants
Holsworth Wildlife Research Endowment ($6375) 2019

Awards

The Outstanding Evolution and Ecology Presentation EERC talk ($200)	2019
COMBINE 2018 Symposium 3rd place best oral presentation ($50)	2018
The Outstanding Evolution and Ecology Presentation EERC talk runner up	2018
Edgeworth David Prize in Palaeontology ($50)	2014

Travel Awards

Postgraduate Research Student Support (PRSS) Scheme ($350)	2018
ABACBS National Conference CSL travel award ($200)	2018

SCIENTIFIC PRESENTATIONS

Postgraduate Research Form 2019, *University of New South Wales,* Australia, October 30
Evolution in invasive species: exploring adaptive divergence and selection across the Australian landscape. [talk]

GIW/ABACBS 2019 International Conference, *University of Sydney,* Australia, December 10-11
Using genomics to reveal drivers of invasion success. [poster]

COMBINE/AYRCOB 2019 Symposium, *University of Sydney,* Australia, December 9
Using genomics to reveal drivers of invasion success. [poster]

AES 2019 National Conference, *University of New South Wales,* Australia, November 25-27
Local signatures of founding populations confound identification of adaptive divergence in invasive populations [talk]

ABACBS 2018 National Conference, *University of Melbourne,* Victoria, Australia, November 27-28
Evolution in invasive populations: using genomics to reveal drivers of invasion success in the Australian European starling (Sturnus vulgaris) introduction across Australia. [poster]

COMBINE 2018 Symposium, *University of Melbourne,* Victoria, Australia, November 26
Evolution in invasive populations: using genomics to reveal drivers of invasion success in the Australian European starling (Sturnus vulgaris) introduction across Australia. [talk]

Postgraduate Research Form 2018, *University of New South Wales,* Australia, October 30
Evolution in invasive populations: using genomics to reveal drivers of invasion success in the Australian European starling (Sturnus vulgaris) introduction across space and time. [talk]

TEACHING EXPERIENCE

BABS2204 – Genetics *(UNSW Sydney)* T3 2019
Laboratory demonstrator for a second-year biotechnology and biomolecular sciences subject. Duties include supervising classes to ensure safely protocols are adhered to, marking assignments, and supervising assessable tasks. I was responsible for motivating constructive discussion among students, as well as explaining biological processed to students, and assisting with experimental procedures.

BABS3291 – Genes, Genomes and Evolution *(UNSW Sydney)* T2 2018, 2019
Laboratory demonstrator for a third-year biotechnology and biomolecular sciences subject, teaching students with a range of biological and coding knowledge. Key topics include introduction to evolutionary bioinformatics, fundamental genomic principles, and investigation into recent advancements in the field.

ANGUS 2019 - Data Intensive Biology Summer Institute *(UC Davis)* July, 2019
Teaching assistant at the ANGUS summer course held through the Data Intensive Biology Summer Institute and the Lab for Data Intensive Biology at UC Davis. Taught learners from varied backgrounds (undergraduate to professorial) genomic practices for analysing big shotgun sequencing data sets over the intensive two-week course, as well as working one on one with learners on their own data sets.

BABS1201 - Molecules, Cells and Genes *(UNSW Sydney)* T1, 2019
Laboratory demonstrator for a first-year biotechnology and biomolecular sciences subject. Duties include supervising classes to ensure safely protocols are adhered to, marking assignments, and supervising assessable tasks. I was responsible for motivating constructive discussion among students, as well as explaining biological processed to students, and assisting with experimental procedures.

Private tutor *(Elite Education, various private employers)* 2014 - present
Private tutoring sessions for students studying a range of subjects, years 5-12.

SUPERVISION EXPERIENCE

NSW Year 12 Extension Science Project Supervisor 2019
Primary supervisor for a year 12 student from Elderslie high school, undertaking with them a project looking into environment and phenotype correlations across the cane toads' Australian range. Worked one on one with the student to develop coding, analytical, writing, and general scientific skills to help them produce a report in fulfillment of their course outcomes. Assisted student in preparing a conference presentation, which they gave at the 2019 Australasian Evolution Conference.

ADDITIONAL RESEARCH AND FIELD EXPERIENCE

Research Volunteer - *Deakin University* December 2017
Species collection and transportation to field station.

Research Assistant - *Deakin University* August 2017
Animal husbandry and data collection for a PhD project located at a regional Northern Territory research station.

Honours Research - *University of Sydney* August 2016 – February 2017
Based at a remote research station in Northern Territory, Australia for 6 months while collecting data for completion of my honours thesis.

PROFESSIONAL DEVELOPMENT & TRAINING

UNSW Women in Maths and Science Champions Program (2020)

Sessional Staff Development Program, BABS, UNSW (2020)

Code of Conduct Incident Response Workshop, UC Davis California, Otter Tech (2019)

Bioconductor Hands-on Training Day, 4th Bioconductor Asia meeting, University of Melbourne, Victoria, Australia (2018)

Sample Size and Power Calculations, Stats Central, UNSW, New South Wales, Australia (2018)

ANGUS – Analysing Sequencing Data, Data Intensive Biology Summer Institute, UC Davis, California, USA (2018)

Software Carpentry Workshop – R, Unix shell, Git, Curtin University, Perth, Australia (2018)

SERVICE AND OUTREACH

Sydney Society for Conservation Biology – *President*, *Communications* Oct 2018 - present
Responsible for managing the society board committee, overseeing finances and event organisation and execution. Additionally, responsible for maintaining the social media pages (Facebook and Twitter), and organised and wrote a monthly newsletter for society members.

COMBINE General Committee - *Symposium Coordinator* Dec 2018 – Feb 2020

I was responsible for assembling the 2019 COMBINE symposium committee, supervising the organisation of all aspects of the event. Key roles include meeting outcome deadlines, ensuring budget restraints were met and invoiced, and assisting to organise the assembly of a guest careers panels.

E&ERC Postgraduate Committee Jan 2019 – Jan 2020
My job is to provide a lively, inclusive, fun and academically enriching experience for all postgraduates in the E&ERC. I organise formal and informal centre gatherings, two seminar speakers, encourage student participation in centre activities and help integrate new students.

GIW/ABACBS 2019 Conference Committee – *COMBINE representative* Feb 2019 – Dec 2019
Liaised between the ABACBS conference committee and COMBINE symposium committee to ensure budget and time restraints were met.

AES 2019 Conference Committee April 2019 – Nov 2019
Assisted with the organisation of the 2019 Australasian Evolution Society Conference.

Australian National Museum - *Volunteer* Aug 2014 – Aug 2019
Assisting with running events and demonstration, chaperoning school groups, and general communications and operational duties during Australian Science Week.

Friends of Fogg Dam - *Invited Speaker* October 2016
Gave a talk to a community ecology and restoration group on the developing aspects of my honours research.

PROFESSIONAL MEMBERSHIP

Australian Bioinformatics and Computational Biology Society (2018-2020)
Ecological Society of Australia (2018-2020)

REFERENCES

Professor Richard Shine | Emeritus professor rick.shine@sydney.edu.au
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Dr Gregory Brown | Post-Doc gregory.brown@sydney.edu.au
School of Life Sciences, University of Sydney, Camperdown NSW, 2006 08 8984 9137

Assistant Professor Lee Ann Rollins | Scientia Fellow l.rollins@unsw.edu.au
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