Elliot Gould

PhD Candidate, Research Assistant, Consultant

School of Agriculture, Food and Ecosystem SCiences, University of Melbourne

406680382 | ✉ elliot.gould@unimelb.edu.au | 0000-0002-6585-538X | egouldo

Elliot Gould is a PhD candidate at the School of EAgriculture, Food and Ecosystem Sciences, and a Quantitative Research Assistant on the repliCATS project at the School of History and Philosophical Studies, University of Melbourne. Their PhD investigates the transparency and reproducibility of ecological models in applied ecology and conservation decision-making. In their role as a Quantitative Research Assistant, Elliot managed a small team of researchers to develop a data provisioning platform for the repliCATS project, and taken lead responsibility for data management, as well as contributing to research on metascience. They have an enthusiasm for teaching and skill-sharing, particularly with regard to building a strong community of practice in emerging open-science methodology and computational biology within ecology and conservation. Elliot's research seeks to use data science techniques to advance the open-science movement by improving transparency and reproducibility, focussing on ecology and conservation Science. Other research interests include decision-theory, Structured Decision Making, and plant ecology (especially grasslands of the Victorian Volcanic Plains).

Education

Doctor of Philosophy, Science

UNIVERSITY OF MELBOURNE   *November 2017 - Present*

- Thesis Title: Reproducibility and Transparency of Ecological Models in Applied Ecology and Conservation Science

Master of Science (Distinction)

UNIVERSITY OF MELBOURNE   *March 2012 - December 2015*

- Research Training Degree, with 70% original research and 30% coursework. Course Weighted Average Mark: 82.312
- Thesis Title: Managing Grasslands with Models: Resolving uncertainty and allocating effort among a suite of sites.

Bachelor of Science

UNIVERSITY OF MELBOURNE   *March 2005 - November 2011*

- Major in Ecology, First Class Honours Average

Bachelor of Arts

UNIVERSITY OF MELBOURNE   *March 2005 - November 2011*

- Major in Indonesian, First Class Honours Average

Employment History

Quantitative Research Assistant - repliCATS, SCORE Program   *University of Melbourne*

SCHOOL OF HISTORICAL AND PHILOSOPHICAL STUDIES, SCHOOL OF BIOSCIENCES   *February 2019 - Present*

- Systematising Confidence in Open Research and Evidence (SCORE) is a Research Program initiated by the Defense Advanced Research Projects Agency (DARPA) that aims to develop and deploy automated tools to assign 'confidence scores' to Social and Behavioural research results and claims in light of recent evidence about the 'Replication Crisis' besetting Science. The repliCATS project is one team within the SCORE project, based in Melbourne. In this role, Elliot lead a small team within the repliCATS project to build data analysis software and infrastructure to manage and deliver data products to internal teams and external partners. Research components of the role include modelling to investigate predictors of replication success.

Demonstrator / Tutor   *University of Melbourne*

SCHOOL OF BIOSCIENCES   *2012 - Present*

- Environmental Risk Assessment: 2016, 2017, 2018, 2022, 2023
- Vegetation Management and Conservation, 2018, 2019. In addition to demonstrating, I co-developed a teaching and learning module, and developed and delivered a workshop teaching the basics of data-science in R using data collected by the students.
- Applied Ecology: 2014, 2015.
- Ecology: 2014.
- Biology of Cells and Organisms: 2012, 2013, 2014, 2015.

Research Assistant, Various Roles   *University of Melbourne*

SCHOOL OF BIOSCIENCE, SCHOOL OF GEOGRAPHY   *2015 - Present*

- National Environmental Science Programme, Threatened Species Recovery Hub: Conservation actions for Threatened Ecological Communities.
- Various plant ecology and Structured Decision Making projects, involving: data analysis and visualisations, building shiny Apps, model building and testing.

Scholarships and Awards

Metascience 2023 travel award
ORGANISATION   *2023*
- $300 USD travel award to attend the Metascience 2023 conference in Washington, D.C

AIMOS top-up scholarship
ASSOCIATION FOR INTERDISCIPLINARY METARESEARCH AND OPEN SCIENCE (AIMOS)   *2022*
- AIMOS will award up to four top-up scholarships per year to PhD or Masters students working on a meta-research project.

Research Excellence Award for Interdisciplinary Research
UNIVERSITY OF MELBOURNE   *2022*
- Nominees will have been collaborators in interdisciplinary research of outstanding influence, that is, the establishment of new, or advancing of existing, collaborations and programs that draw on multiple disciplines typically involving multiple faculties or schools.

Melbourne Centre of Data Science Doctral Academy Fellow
MELBOURNE CENTRE FOR DATA SCIENCE, UNIVERSITY OF MELBOURNE   *2021*
- The MCDS Doctoral Academy aims to bring together a campus wide multi-disciplinary cohort of PhD students (MCDS Doctoral Academy Fellows) to share their research, domain challenges and thoughts around the use, implementation and application of data science in their fields.

Australian Government Research Training Program (RTP) Scholarship
THE UNIVERSITY OF MELBOURNE   *2017 - Current*
- Awarded to high-achieving students undertaking graduate research at the University of Melbourne.

Selected Talks and Workshops

Invited speaker Mini-note Panel: Association for Interdisciplinary Metaresearch and Open Science Conference
Melbourne, Australia

MANY ANALYSTS: HETEROGENEITY IN RESULTS AMONG STUDIES IN ECOLOGY AND EVOLUTIONARY BIOLOGY   *2022*

Big Team Science Conference
Global - Online

A MANY-ANALYST PROJECT IN ECOLOGY AND EVOLUTIONARY BIOLOGY DEMONSTRATES HETEROGENEITY DRIVEN BY ANALYSTS' DECISIONS AND GENERATES NEW QUESTIONS ABOUT VARIABILITY IN THIS HETEROGENEITY   *2022*

Society for Open Reliable and Transparent Ecology and Evoluation Workshop Series
Online - Oceania

WORKSHOP: CREATING REPRODUCIBLE WORKFLOWS IN R WITH THE TARGETS:: PACKAGE   *2022*

Association for Interdisciplinary Metaresearch and Open Science Conference
Melbourne, Australia

RESEARCHOPS: A PRINCIPLED FRAMEWORK AND GUIDE TO COMPUTATIONAL REPRODUCIBILITY,   *2021*

Association for Interdisciplinary Metaresearch and Open Science Conference
Melbourne, Australia

MODELLING AS WAYS OF KNOWING - HOW VIEWING MODELS AS AN EPISTEMIC ACTIVITY IS USEFUL IN ECOLOGY   *2021*

Model Based Research and Reproducibility Workshop
Centre for Open Science, Virgina, USA

WORKSHOP: 'PREREGISTRATION TEMPLATES FOR MODEL-BASED RESEARCH'   *2020*

Department of Land Water & Planning
Melbourne

WORKSHOP: 'PREREGISTRATION TEMPLATES FOR ECOLOGY AND CONSERVATION'   *2020*

Society for the Improvement of Psychological Sciences
Rotterdam

WORKSHOP: 'TRANSPARENCY & REPRODUCIBILITY IN NON-HYPOTHESIS TESTING RESEARCH'   *2019*

MetaScience Symposium & Association for Interdisciplinary Meta-Research and Open Science Conference
San Francisco & Melbourne

POSTER PRESENTATION: 'QUESTIONABLE RESEARCH PRACTICES IN NON-HYPOTHESIS TESTING RESEARCH'   *2019*

Credibility Revolution 2018
Melbourne

TALK: 'QUESTIONABLE RESEARCH PRACTICES IN NON-HYPOTHESIS TESTING RESEARCH'   *2018*

UQ Open Science Conference
Brisbane

TALK 'BEYOND P-HACKING: QUESTIONABLE RESEARCH PRACTICES IN NON-NULL HYPOTHESIS SIGNIFICANCE TESTING'   *2018*

Victorian Biodiversity Conference
Melbourne

WORKSHOP: 'DATA WRANGLING FOR ECOLOGISTS'   *2017*

Research Consultancy, Professional Membership

Department of Environment Land Water & Planning *Consultancy*

Testing and Developing preregistration templates for ecology and conservation using a case study of *March 2020 - Present*
environmental flows management in Victoria, Australia

- This research consultancy contributes to Elliot's PhD. This work involved the design and delivery of a collaborative workshop with DELWP in order to develop preregistration templates and methodology relevant to ecological modelling, in particular within decision-making and applied contexts.

Society for Open, Reliable, and Transparent Ecology and Evolutionary Biology (SORTEE) *Professional Membership*

Founding Member and Secretary / Treasurer, www.sortee.org *2020 - 2022, 2023*

- SORTEE is a service organization which brings together researchers working to improve reliability and transparency through cultural and institutional changes in ecology, evolutionary biology, and related fields broadly defined. Anyone interested in improving research in these disciplines is welcome to join, regardless of experience. The society is international in scope, membership, and objectives. Elliot is a founding member and co-chair of the executive committee.

Publications

Predicting reliability through structured expert elicitation with the repliCATS *PLOS ONE*
(Collaborative Assessments for Trustworthy Science) process

Hannah Fraser, Martin Bush, Bonnie C. Wintle, Fallon Mody, Eden T. Smith, Anca M. Hanea, Elliot Gould,
Victoria Hemming, Daniel G. Hamilton, Libby Rumpff, David P. Wilkinson, Ross Pearson, Felix Singleton Thorn,
Raquel Ashton, Aaron Willcox, Charles T. Gray, Andrew Head, Melissa Ross, Rebecca Groenewegen, Alexandru *2023*
Marcoci, Ans Vercammen, Timothy H. Parker, Rink Hoekstra, Shinichi Nakagawa, David R. Mandel, Don van
Ravenzwaaij, Marissa McBride, Richard O. Sinnott, Peter Vesk, Mark Burgman, Fiona Fidler

- https://doi.org/10.1371/journal.pone.0274429

Method Reporting with Initials for Transparency (MeRIT) promotes more granularity and *Nature Communications*
accountability for author contributions

Shinichi Nakagawa, Edward Ivimey-Cook, Matthew J. Grainger, Rose E. O'Dea, Samantha Burke, Szymon M.
Drobniak, Elliot Gould, Erin L. Macartney, April Robin Martinig, Matthieu Paquet, Kyle Morrison, Joel L. Pick,
Patrice Pottier, Lorenzo Ricolfi, David P. Wilkinson, Aaron Willcox, Coralie Williams, Laura A. B. Wilson, Saras *2023*
M. Windecker, Yefeng Yang & Malgorzata Lagisz

- https://doi.org/10.1038/s41467-023-37039-1

Predicting and reasoning about replicability using structured groups *Royal Society Open Science*

Bonnie C. Wintle, Fallon Mody, Eden T. Smith, Anca M. Hanea, David P. Wilkinson, Victoria Hemming, Martin Bush,
Hannah Fraser, Felix Singleton-Thorn, Marissa F. McBride, Elliot Gould, AndrewHead, Dan Hamilton, Libby *2023*
Rumpff, Rink Hoekstra, Fiona Fidler

- https://osf.io/preprints/metaarxiv/vtpmb/

What state of the world are we in? Targeted monitoring to detect transitions in *Ecological Applications*
vegetation restoration projects

Christopher Stuart Jones, Freya Mary Thomas, Damian Richard Michael, Hannah Fraser, Elliot Gould, Jim
Begley, Jenny Wilson, Peter Anton Vesk, Libby Rumpff *2022*

- https://doi.org/10.1002/eap.2728

Mathematically aggregating experts' predictions of possible futures *PLOS ONE*

A. M. Hanea, D. P. Wilkinson, M. McBride, A. Lyon, D. van Ravenzwaaij, F. Singleton Thorn, C. Gray, D. R. Mandel, A. *2021*
Willcox, E. Gould, E. T. Smith, F. Mody, M. Bush, F. Fidler, H. Fraser, B. C. Wintle

- https://doi.org/10.1371/journal.pone.0256919

Towards open, reliable, and transparent ecology and evolutionary biology *BMC Biology*

Rose E. O'Dea, Timothy H. Parker, Yung En Chee, Antica Culina, Szymon M. Drobniak, David H. Duncan, Fiona
Fidler, Elliot Gould, Malika Ihle, Clint D. Kelly, Malgorzata Lagisz, Dominique G. Roche, Alfredo *2021*
Sánchez-Tójar, David P. Wilkinson, Bonnie C. Wintle & Shinichi Nakagawa

- https://doi.org/10.1186/s12915-021-01006-3

A practical guide for conservation planning using the General Ecosystem Model for *NESP Threatened Sprecies Recovery*
Southern Australian Woodlands. *Hub Project 7.2, Brisbane*

Good, M., Fraser, H., Gould, E., Vesk, P., Rumpff, L. *2021*

- https://www.nespthreatenedspecies.edu.au/media/yvlbs1tk/7-2-a-practical-guide-for-conservation-planning-using-the-general-ecosystem-model-for-southern-australian-woodlands_v3.pdf