

CHRISTOPHER HUNTER LEAN

Curriculum Vitae

School of Philosophy
The University of Sydney,
Sydney, NSW, 2006, Australia

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AOS: Environmental Ethics, Philosophy of Biology and Ecology, Philosophy of Technology, Philosophy of Science.

AOC: Ethics (esp. Bioethics and Metaethics), Philosophy of Social Science, Philosophy of Medicine.

EDUCATION

- 2013 – 2019 **PhD in Philosophy**, Awarded 13.12.19, Australian National University
Supervisor: Kim Sterelny
Thesis: *'Ecological Kinds and the Units of Conservation'*
- 2010 – 2012 **Masters of Arts (Coursework), Philosophy**, University of Utah
- 2005 – 2009 **Bachelor of Science with First Class Honours in History and Philosophy of Science**,
University of Sydney

CURRENT AFFILIATIONS

- Jan 2023- Research Fellow, Theory and Method in the Biosciences, School of Historical and
Philosophical Inquiry, University of Sydney. (Primary Employer)
- March 2023- Associate Investigator, Centre of Excellence in Synthetic Biology, Macquarie University
- Feb 2023- Member, Sydney Environment Institute, University of Sydney
- July 2022- Honorary Fellow, Bacterial Regulation and Transport Laboratory (BRaTlab), University of
Newcastle.

PREVIOUS ACADEMIC EMPLOYMENT

- Oct 2021 – Research Fellow, ARC Centre of Excellence in Synthetic Biology, Institute of Society and
Dec 2022 Culture, Western Sydney University.
- Feb – Sept 2021 Moore Foundation Post-Doctoral Researcher, Biochemistry and Molecular Biology
Department, Dalhousie University
- Nov 2018 – Post-Doctoral Researcher, School of Historical and Philosophical Inquiry,
Feb 2021 University of Sydney
- Feb – July 2018 Lecturer, Department of Philosophy, University of Otago
- Feb – July 2017 Lecturer, School of Historical Philosophical Inquiry, University of Sydney
- Aug – Oct 2015 Lecturer, School of Philosophy, Australian National University
- Jan 2011 – Teaching Assistantship, Department of Philosophy, University of Utah
Dec 2012
- Aug – Dec 2011 Research Assistant for Anya Plutynski (Associate Professor Philosophy University of Utah)

PAPERS

PUBLISHED:

- 2023 'The Evolution of Multispecies Populations: A Multilevel Perspective' *Biology and Philosophy* (with Chris Jones) *Biology and Philosophy*, 38, 40
- 2022 'Community-Level Evolutionary Processes: Linking Community Genetics To Replicator Interactor Theory' *Proceedings of the National Academy of Sciences* (with Ford Doolittle and Joe Bielawski) 119(46), e2202538119
- 2022 'Authenticity and Autonomy in De-Extinction' *Ethics, Policy & Environment* 1-5
- 2021 'Invasive Species Increase Biodiversity and, Therefore, Services: An Argument of Equivocations' *Conservation Science and Practice* 3(12), e553
- 2020 'Why Wake the Dead? Species Identity and De-extinction' *Journal of Agricultural and Environmental Ethics* 33: 571-589
- 2020 'Invasive Species and Natural Function in Ecology' *Synthese* 198(10), 9315-9333
- 2019 'General Unificatory Theories in Community Ecology' *Philosophical Topics* 47(1), 125-142
- 2019 'Can Communities Cause?' *Biology and Philosophy* 34 (6): 1-5
- 2018 'Indexically Structured Ecological Communities' *Philosophy of Science* 85(3): 501-522
- 2017 'Biodiversity Realism: Preserving the Tree of Life' *Biology and Philosophy*, 32: 1083-1103
- 2016 'Biodiversity and Ecological Hierarchy' (with Kim Sterelny) *The Routledge Handbook of the Philosophy of Biodiversity* Ed: Garson, J., Plutynski, A., and Sarkar, S. Routledge, 110-124
- 2016 'The Value of Phylogenetic Diversity' (with James Maclaurin) In *Biodiversity Conservation and Phylogenetic Systematics*. Ed: Pellens, R and Grandcolas, P. Springer Press, 19-37
- 2016 'The Evolution of Failure: Explaining Cancer as an Evolutionary Process' (with Anya Plutynski) *Biology and Philosophy*, 31: 1-19
- 2010 'Improving the scientific credibility of farm systems and on farm dairy research' (with Ian Lean as first author) *Proceedings to the Australasian Dairy Science Symposium*, 126-136

Under Review

Big Data and the Risk of Future Offending (With Allan McCay and Armin Alimardani), Synthetic Biology and Conservation Science, Climate Adaptation as Evolvability (with Michael Weisberg and Rachael Brown), A Synthetic Biologists Guide to Moral Hazard.

174 Citations and H-Index 6 (Google Scholar).

AWARDS, GRANTS, AND SCHOLARSHIPS

- 2023 Inspire NSW/ QLD "Untapped Potential! Wild Yeast and You" \$12,200 (AI)
- 2023 Bio-Platforms Australia Multiomics Grant (\$25,000) "Wild Yeast Biobank: Multiomics in the Wild" Primary Investigator (PI) of a team of five.
- 2022 CSIRO On Prime Program. Pre-accelerator for academic start-ups for "The Native Yeast Biobank: A Resource for Synbio Research". Awarded a \$4500 performance bonus.
- 2022 EMCR Seed Fund (\$25,000) "The Native Yeast Biobank: A Resource for Synbio Research". Primary Investigator (PI) of a team of five.
- 2021 Forrest Prospect Fellowship at the University of Western Australia '*Synthetic Biology and Conservation*' (One and half years of funding equalling \$142,500). Declined to take WSU position.
- 2016 The Vice Chancellor's Travel Grant, Australian National University (\$1500)
- 2013 - 2017 Australian National University Research Scholarship, PhD scholarship
- 2015 Volkswagen Foundation. Funding for attending the 'Superorganisms, Organisms and Suborganisms as Biological Individuals' conference, Gut Sigen (\$2250)
- 2010 -2012 University of Utah, Postgraduate Funding (Teaching Assistantship)
- Under Review** Australia's Economic Accelerator Grant "Wild Yeast Biobank" \$195,000 (AI)

TEACHING

COURSES DESIGNED, LECTURED, AND ADMINISTRATED:

- 2018 Philosophy of Science
2018 Philosophy of Biology
2017 How Biology Matters to Philosophy
2017 Philosophy of Sex (1/2)
2015 Philosophy of Biology (1/4)
2011 – 2012 Introduction to Philosophy: Philosophy and Human Nature (Online)

TUTORING:

- 2019 Environmental Philosophy (with three guest lectures)
2018 Biology, Ethics, and Society
2017 Biology, Ethics, and Society; How Biology Matters to Philosophy; Philosophy of Sex
2015 Philosophy of Biology; Introduction to Philosophy (with guest lecture)
2014 Philosophy of Science
2010 Bioethics; Environmental Ethics (with guest lecture)

PUBLIC OUTREACH

- Dec 2023 “Untapped Potential: Wild Yeast Zoo and You!” The Wild Yeast Zoo team will be running an event at the Woodford Folk Festival (over 5000 people in attendance). We will run a nature walk with wild yeast sampling and present on stage.
- May 2023 ‘Not Natural’ University Science Gallery Exhibition, University of Melbourne Interview.
- April 2023 ‘De-Extinction Part 1 & Part 2’ *Philosophers Zone*. Radio National, Australian Broadcast Corporation.
- May 2022 Invited Talk with The Raffles Institution Singapore “Introducing Synthetic Biology and Ethics”
- March 2022 Camden Rotary Club Public Lecture “Big Data and Sentencing”
- May 2021 Judge for the Australian High School Ethics Olympiad
- Feb 2021 “Cracking Cold Cases: is it in our genes?” Interview for the *Law Society Journal* Issue 74: 29-33
- Jan 2020 “A Relatives Online DNA Test Could Be Used in Your Court Case” Interview with 2SER Radio Station 29.1.2020
- Jan 2020 “Cousin took a DNA test? Courts could use it to argue you are more likely to commit crimes” (with Allan McCay) *The Conversation*. 21.1.2020
- Oct 2018 Comments for *National Geographic* article “Human caused extinctions have set mammal evolution back millions of years”

PRESENTATIONS

SELECT REFEREED CONFERENCE TALKS AND KEYNOTES:

- Aug 2023 “Against Ecocide” International Society for the History, Philosophy and Social Studies of Biology (ISHPSSB Biennial Conference), Toronto.
- Jun 2023 “Invasive Genes in the Synthetic Age” ANZ-PhilBio Workshop, ANU.
- Aug 2022 “Invasive Genes in the Synthetic Age” FordFest: Celebrating the Career of Ford Doolittle
- Aug 2022 “Invasive Genes in the Synthetic Age” Philosophy of Biology in the Mountains Appalachia
- Feb 2022 “Synthetic Biology and Conservation” RISK Conference

- Nov 2021 "Against Ecological Neoliberalism" Invited Keynote for the Australian Postgraduate Philosophy Conference, Online.
- July 2021 "The Rediscovery of Arguments for Biotic Colonialism" ISHPSSB Biennial Conference, Online.
- Mar 2020 'Genetic Genealogies and Sentencing' (Poster Presentation) Ethics and AI International Conference, University of Sydney. (Cancelled due to Covid).
- Feb 2020 'Invasive Species in the Bushfire Crises' Philosophical Reflections on the Bushfire Disaster and Climate Crisis, University of Sydney.
- Jul 2019 'Invasive Species and Biodiversity Realism.' ISHPSSB Biennial Conference, Oslo, Norway.
- Sep 2018 'Remembering the Big Question' Charles Darwin University, Evolving Minds
- Jul 2017 'Species Identity and De-extinction.' Australian Association of Philosophy Annual Conference, University of Adelaide.
- Nov 2016 'Indexically Structured Ecological Communities.' 25th Biennial Meeting of the Philosophy of Science Association, Atlanta, USA.
- Dec 2015 'The Resurrection of Swamp Mammoth; Or our fight against the Romantics.' New Zealand Association of Philosophy, Massey University.
- Jul 2015 'Three Types of Biological Individuality.' Superorganisms, Organisms and Suborganisms as Biological Individuals: Gut Siggen, Germany.
- Jul 2015 'Indexically Structured Ecological Communities.' ISHPSSB Biennial Conference, Montreal.
- Dec 2014 'Ecological Hierarchy and its implications for Biodiversity.' New Zealand Association of Philosophy Annual Conference, University of Canterbury.
- Jun 2014 'The Evolution of Failure: Explaining Cancer as an Evolutionary Process.' Australian Association of Philosophy Annual Conference, Australian National University.
- Mar 2014 'A Phylogenetic Basis for Biodiversity.' 7th Munich-Sydney-Tilburg Conference on the Philosophy of Science - Evolutionary Thinking, University of Sydney.
- Oct 2012 'Reducing Reactive Aggression: MAOA and Responsible Intervention.' North-West Philosophy Conference, Oregon State University, Corvallis.
- Aug 2012 'Foot in Mouth: The danger of representing biological properties with normative language" (Poster Presentation). Rocky Mountain Ethics Conference, University of Colorado, Boulder.
- Jul 2011 'The Ecological Species Concept Should be more than a Citation.' ISHPSSB Biennial Conference, University of Utah.
- Feb 2011 'The Ontology and Boundaries of Ecological Communities.' History and Philosophy of Biology in the Desert, Arizona State University.
- Feb 2010 'The Boundaries of Ecological Communities.' Australasian Association of History, Philosophy and Social Studies of Science, Annual Conference, University of Sydney.

COLLOQUIUM TALKS:

University of Melbourne (2022), National Australian Centre for the Public Awareness of Science (2022), University of Leeds (2022), Centre of Excellence in Synthetic Biology (2021), University of Dalhousie (2021), Groupe De Recherche en Ethique Environnementale (2020), Philosophy of Biology at Dolphin Beach 14 (2020), University of Sydney (2019), Macquarie University (2019), Australian National University (2018), University of Otago (2017), Philosophy of Biology at Dolphin Beach 10 (2016), Australian National University (2014), University of Sydney (2009).

PROFESSIONAL SERVICE

2022 – Now	Section Editor for the “Integrative Conservation Clinic” an online conservation science resource.
2022	Programme Committee, British Society of Philosophy of Science Meeting
2022	EMRC Subcommittee for the Centre of Excellence in Synthetic Biology April Conference Organiser
2021	EMRC Subcommittee for the Centre of Excellence in Synthetic Biology December Conference Organiser
2021	Early and Mid-Career Researchers Subcommittee for the Centre of Excellence in Synthetic Biology
2021	Reviewer for the US Government National Science Fund
2021	Curator for a special issue of The Australasian Philosophical Review.
2021	Programme Committee, British Society of Philosophy of Science Meeting
2019-2020	Organiser, Australasian Association of Philosophy (AAP) Conference.
Aug 2015 – 2017	Student Committee Representative, International Society for the History Philosophy and Social Sciences of Biology (ISHPSSB)
May 2016	Started Annual “Stuff I wish I knew when I started my PhD at ANU” Talk at Kioloa Graduate Conference.
May 2016	Organiser, ‘Evolutionary History and Conservation’ Interdisciplinary Conference. Keynote: Daniel Faith (Australian Museum)
Mar 2013 – 2015	Convenor, Evolutionary Theory reading group at the Australian National University
Nov 2014	Organiser, Sydney-ANU Philosophy of Biology Conference Organizer
Jun 2014	On-site Coordinator, Australian Association of Philosophy Conference
Nov 2013	Organiser, Australian National University Kioloa Graduate Conference
Mar 2012	Organiser, The Ninth Annual Intermountain West Graduate Student Conference (with Blake Vernon and Lucas Matthews). Keynote: C. Kenneth Waters (University of Minnesota).
Jul 2011	On-site Coordinator, ISHPSSB Conference

REFeree: *Acta Biotheoretica, Biology & Philosophy, British Journal for Philosophy of Science, Cambridge Prisms, Conservation Biology, Current Biology, Environmental Ethics, Ergo, History and Philosophy of the Life Sciences, Philosophy of Science, Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences, Synthese, Historical and Conceptual Foundations of Phylogenetic Systematics* (Edited Book) Editor: Andrew Hamilton.

FURTHER SCIENTIFIC EXPERIENCE

Jan 2014	International Biogeography Society Early Career Conference: Participated in the R and BioGeoBears workshops.
Aug – Dec 2013	Learned to build Phylogenetic Trees with Seaview and MetaPIGA
2007 – 2010	Worked at Scibus Cattle Consulting and Research Company part-time over the summer holidays. I helped with field experiments on farms and data entry for analysis and meta-analysis. http://www.scibus.com.au/