

Kate (Kathleen) Lynch

AOS: Philosophy of Biology, Philosophy of Science, Philosophy of Medicine & Public Health, Environmental Philosophy

AOC & Research Interests: Causation, Explanation, Genetics, Genetic Technology, Conservation, Medicine, Evidence, Animal Behaviour, Death, Values in Science

658, North Wing
Arts West Building
Royal Parade, Parkville
VIC 3052

✉ kateemmalynch@gmail.com

🌐 www.katelynch.net

Education

- 2011 – 2015** **PhD in Philosophy, Macquarie University**
Thesis awarded the Vice Chancellor's Commendation
- 2012** (Jan-July) Visiting Scholar. Centre for Philosophy of Science, University of Pittsburgh
- 2010 – 2014** **Bachelor of Advanced Science (Biology), Macquarie University**
Awarded Vice Chancellors Award for academic excellence
- 2011** (Jan-Feb) Visiting student. University of the South Pacific, Fiji
- 2009** **Honours in Philosophy (First Class), University of Sydney**
- 2004 – 2007** **Bachelor of Arts – Philosophy & Psychology, University of Sydney**

Employment

- 2023 (May)- Current** **Lecturer**
Department of History and Philosophy of Science, University of Melbourne
- 2016 – 2023** **Post-Doctoral Research Fellow**
Department of Philosophy & Charles Perkins Centre, University of Sydney
- Jan 2021-Dec 2021 Parental leave (resumed part-time Jan 2022-April 2023)
- Dec 2018- June 2019 Parental leave (resumed part-time June 2019-Dec 2020)
- 2020 -2021** **Adjunct Lecturer**
Department of Philosophy, University of Sydney
- 2016 – 2018** **Post-Doctoral Research Fellow**
Department of Biological Sciences, Macquarie University
- 2016-2017** **Adjunct Lecturer**
Department of Biological Sciences, Macquarie University

Laboratory and Research Group Affiliations

- 2023-current** Melbourne Biodiversity Institute
- 2022-current** Sydney Environment Institute -University of Sydney
- 2016-current** Theory and Methods in Biosciences – University of Sydney
- 2016-2023** Charles Perkins Centre– University of Sydney
- 2014-2018** Evolutionary Ecology Laboratory – Macquarie University
- 2016-2017** Centre for Fruit Fly Biosecurity and Innovation (National)
- 2016-2017** Centre for Biosecurity Futures – Macquarie University
- 2017** Ecosystem Sciences Division-CSIRO National Laboratories, Canberra
- 2012-2013** Neuroethology Laboratory – Macquarie University
- 2010-2012** Centre for the Integrative Study of Animal Behaviour– Macquarie University

Competitive Grants, Awards and Funding

- 2020 CASS Travel Award** (AUD \$3,400.00) [Declined due to Covid-19 outbreak]
- 2017 Australian Academy of the Humanities Travel Award** (AUD \$4,000.00)
- 2016 Templeton Foundation, Genetics and Human Agency Project** (USD: \$321,607.00 total project). Co-investigator with P. Griffiths and I. Dar-Nimrod.
- 2015 Macquarie University Departmental Travel Grant** (AUD: \$2,681.00)
- 2013 Macquarie University Departmental Travel Grant** (AUD: \$2,130.00)
- 2013 Genetics Society of Australia Student Travel Award** (AUD: \$250.00)
- 2011 Macquarie University Post Graduate Research Fund (PGRF) Grant** (AUD: \$5,000.00)
- 2011 Macquarie University Summer Research Scholarship** (AUD: \$1,100.00)
- 2010 Macquarie University Summer Research Scholarship** (AUD: \$1,100.00)
- 2010 Macquarie University Travel Grant** (AUD: \$1,000.00)
- 2010 Australian Research Council Discovery Grant PhD Scholarship (Macquarie)** (AUD: \$78,750.00 – 3 years full tuition and stipend)
- 2009 University of Sydney Honours Scholarship** (AUD: \$5,000.00)
- 2008 Walter Reid Memorial Prize (Sydney)** (AUD: \$500.00)

Publications

Peer Reviewed Journal Articles & Book Chapters

1. Nacko, S., Hall, M.A., Gloag, R., **Lynch, K.E.**, Spooner-Hart, R., Cook, J., Riegler, M. Survival during heat events and variation of thermal tolerance across climate classes in Australian stingless bees. *Journal of Thermal Biology*
2. Van Dooren, T. **et al.** (2023). The ethics of intervening in animal behaviour for conservation. *Trends in Ecology and Evolution*. <https://doi.org/10.1016/j.tree.2023.04.011>
3. Serpico, D., **Lynch K.E.** and Porter T. (2023) New Perspectives on Quantitative Genetics. *Studies in History and Philosophy of Science*. 97: 29-33.
4. Kemp, D.J., **Lynch, K.E.** and St-Jean, S. (2022) Variation in the level of boldness behaviour across individuals, sexes, and strains of the guppy *Poecilia reticulata*" *Marine and Freshwater Research*
5. **Lynch, K.E.** (2021). The Meaning of Cause in Genetics. *Cold Spring Harbour Perspectives in Medicine*, a0405019. Eds. George Davey Smith, Rebecca Richmond and Jean-Baptiste Pingault. A0405019.
6. **Lynch, K.E.** and Blumstein D.T. (2020) 'The hidden ethical costs of conservation' *Science*. 370 (6513), 179-180.
7. Dar-Nimrod, I., Kuntzman, R., MacNevin, G., **Lynch, K.E.**, Woods, M., and Morandini, J. (2021) Genetic essentialism: The mediating role of essentialist biases on the relationship between genetic knowledge and the interpretations of genetic information. *European Journal of Medical Genetics*. 64(1), 104119.
8. **Lynch, K.E.** and Blumstein D.T. (2020) 'Effective Conservation' *Trends in Ecology and Evolution*. 35(10), 857-859.
9. **Lynch, K.E.**, Parke, E., O'Malley M. (2020) 'Microbiome causality: further reflections (a response to our commentators)' *Biology and Philosophy*, 35, 29.
10. **Lynch, K.E.**, Parke, E, O'Malley M. (2019) 'How causal are microbiomes? A comparison with the *Helicobacter pylori* explanation of ulcers.' *Biology and Philosophy*. 34, 62. Target article with 12 open peer commentaries
11. O'Neill, S.J., White, T.E., **Lynch, K.E.**, and Kemp, D.J (2019) 'Male guppies differ in display rate but not diel pattern of display under daily light changes.' *Behavioral Ecology and Sociobiology*. 73: 157.

12. Dar-Nimrod, I., MacNevin, G., Godwin, A., **Lynch, K.E.**, Magory Cohen, T., Morandini, J. (2019) 'Genetic literacy within a national Australian sample: comparisons with other diverse populations.' *Public Health Genomics*, 1-11.
13. **Lynch, K.E.**, White, T.E., Kemp, D.J. (2019) 'The effect of long-term captive breeding upon adult thermal preference in the Queensland Fruit Fly (*Bactrocera tryoni*).' *Journal of Thermal Biology*, 78, 290-297.
14. **Lynch, K.E.**, Morandini, J. Dar-Nimrod, I. Griffiths, P. (2018) 'Causal reasoning about genetics: Synthesis and future directions.' *Behavior Genetics*, 49(2):221-234.
15. **Lynch, K.E.** and Bourrat, P. (2017) 'Interpreting heritability causally.' *Philosophy of Science*, 84(1) 14-34.
16. **Lynch, K.E.** (2017) 'Heritability and causal reasoning.' *Biology & Philosophy*, 32(1) 25-49.
17. **Lynch, K.E.** and Kemp, D.J. (2014) 'Nature-via-nurture and unravelling causality in evolutionary genetics.' *Trends in Ecology and Evolution*, 29(1) 2-5.

Peer-reviewed Commentaries & Reviews

18. **Lynch, K.E.**, Strasser, J., Long, S., Brown, R.L. (*forthcoming*) Two disanalogies with RCTs and their implications for second generation causal knowledge. *Behaviour and Brain Sciences*,
19. **Lynch, K.E.** and Blumstein D.T. (2020) 'Conflicts and triage' *Animal Sentience* 4(27), 24
20. Blumstein, D.T. and **Lynch, K.E.** (2020) 'Innovative yes, but is it rewilding?' *Animal Sentience* 5(28), 8.
21. **Lynch, K.E.** (2019) 'Why microbes not microbiomes are better causal explanations in gut-brain research.' *Behaviour and Brain Sciences*, 42, e76.

Reference Works

22. **Lynch, K.E.** 'Effective Conservation Framework' *forthcoming* The Integrative Conservation Clinic.
23. **Lynch, K.E.** (2019) 'Heritability.' In *Encyclopedia of Evolutionary Psychological Science*. DOI: https://doi.org/10.1007/978-3-319-16999-6_2782-1
24. **Lynch, K.E.** (2019) 'Gut microbiome.' In *Encyclopedia of Evolutionary Psychological Science*, DOI: https://doi.org/10.1007/978-3-319-16999-6_41-1
25. **Lynch, K.E.** (2016) 'Gene environment correlation.' *Encyclopaedia of Personality Differences*. Springer. DOI: 10.1007/978-3-319-28099-8_1470-1

Special Journal Issues

26. Serpico, D., **Lynch K.E.**, Porter, T. (Eds.) 2022. Special Issue of *Studies in History and Philosophy of Science* on "New Historical and Philosophical Perspectives on Quantitative Genetics"

Work In Review

27. Lane, A.S., Lynch, K.E., Arnold, M., Dar-Nimrod, I., Morandini, J., Gawronski, S.A., Griffiths, P.E. The undue influence of genetic information on medical students treatment decisions ([preprint](#))

Work In Preparation

28. **Lynch, K.E.**, Gawronski, S.A., Griffiths, P.E., Bednerik, M., Sun, C. A text-analytic approach to the use of genetic essentialist biases in the Australian Media
29. **Lynch, K.E.** How a focus on intelligence has shaped the nature nurture debate
30. **Lynch, K.E.** 'Indirect Genetic Causes'
31. Sword, G., Griffiths, P.E., **Lynch, K.E.**, and Simpson, S. Should locusts get personalities?

Conference and Workshop Presentations (*Invited, †Refereed)

Indirect Genetic Effects

1. IHSPSSB, Toronto 2023†

What should count as a cause of death?

2. Australia/New Zealand Philosophy of Biology Workshop, ANU 2023†

Genetics and Causal Reasoning

3. Exploring Origins and Impacts of Beliefs about Genetic Causation Conference. Columbia University 2023*

The Goals and Values Underlying Conservation Behaviour

4. Ethics of Conservation Behavior Workshop, The University of Sydney 2022*

Cause of Death

5. HPS Seminar Series, The University of Sydney 2022*

Indirect genetic causes

6. Philosophy Seminar Series, ANU 2022*

On Constructing Science: Clarifications and Implications (with R. Brown, S. Khan & R. Pain)

7. From Causal Reasoning to Scientific Thinking Workshop, ANU 2022*

Gene Environment interplays and Evolutionary Science

8. Australian Academy of Sciences Evolutionary Thinking Forum 2021*

How causal are microbiomes

9. ERC IDEM Conference, Bordeaux, France (virtual event) 2020†

10. Philosophy Seminar Series, University of NSW 2019*

11. The Future of Microbiome Research Conference, Sydney 2018†

How a focus on intelligence has shaped the nature nurture debate

12. ISHPSSB, Oslo 2019†

Nature via nurture: Estimating gene-environment correlation and its impacts on evolution

13. Workshop on Culture and Cognition, CAVE, Macquarie University 2018*

14. Biological Sciences Seminar Series, Colorado State University 2018*

15. College of Natural and Agricultural Sciences, UC, Riverside 2018*

Complex causation: Perceptions and reality (with J. Morandini)

16. Genetics and Human Agency AM, University Virginia 2018*

Inheriting environments

17. Biological Sciences Seminar Series, Macquarie University 2017*

Causation, chance, coincidence, and accident in behaviour genetics

18. Workshop on Chance, Coincidence and Accident, ANU 2017*

Norms and natures: How ideas about the genetic basis and the ethical status of behaviours influence one another (with J. Morandini, P. Griffiths and I. Dar-Nimrod)

19. Genetics and Human Agency AM, University Virginia 2017*

Using formal methods in the debate over heritability and causation

20. Formal Methods for Philosophy of Science, University of Sydney 2017*

What happens when genes cause environments

21. Kenneth Meredith Garven Lecture & Symposium on Determinism, University of Sydney 2016*

The Baldwin Effect and the extended evolutionary synthesis

22. Philosophy Seminar Series, Macquarie University 2016*

23. Genes to Geosciences Annual Conference, Macquarie University 2016†

Estimating complex heritabilities

24. ECR Biology Research Showcase, Macquarie University 2016*

Research frontiers in biology: Being on the front foot of science impact and engagement (With DJ. Kemp and M. Gillings)

25. Environmental Sciences Seminar Series, Macquarie University 2016*

The Norm of Reaction and Causal Explanation

26. HPS Seminar Series, The University of Sydney 2016*

27. Philosophy Seminar Series, ANU 2016*

Interaction's ugly cousin: The impact of G-E covariance on causal interpretations of heritability

28. Causation in Biology Conference, University of Bristol, 2015†

29. Philosophy of Biology at Dolphin Beach Conference 2015*

Heritability and the interventionist account of causation

30. AAP Conference, Macquarie University 2015†

Heritability and the concepts of 'gene' and 'environment' (With P. Bourrat)

31. AAP Conference, ANU 2014†

Epigenetics and heritability

32. Sydney- Australian National University (S-ANU) workshop 2014

Evidence for sources of phenotypic variance and the consequences for evolutionary prediction

33. 7th Munich-Sydney-Tilburg Philosophy of Science Conference:
Evolutionary Thinking, University of Sydney 2014†

A re-revised model of phenotypic variance

34. AAP Conference, University of Auckland 2013†

Decomposing causal intuitions about gene-environment covariance

35. Workshop on Causation in Science and Metaphysics, Macquarie University 2012

Teaching Experience

Department of History and Philosophy of Science, University of Melbourne

2023 Course convenor, lecturer and tutor: HPSC20026: Philosophy of Science

2023 Lecturer: UNIB10024: Sustainability a hope for the future

Department of Philosophy, University of Sydney

2021 Course co-convenor, lecturer and tutor: PHIL3677: Philosophy of Medicine*

2020 Course co-convenor, lecturer and tutor: PHIL3677: Philosophy of Medicine*

*Received student nominated teaching commendation(s)

School of Medicine, University of Sydney

2020 Online coordinator & tutor: OLET1508: Health Challenges: Evolution, Health&Disease

Department of Biological Sciences, Macquarie University

2017 Course co-convenor and lecturer: BIOL334: Conservation Genetics

2016 Course co-convenor and lecturer: BIOL334: Conservation Genetics

2012- 2015 Tutor / Demonstrator: BIOL334: Conservation Genetics; BIOL115: The Thread of Life;
BIOL 208: Animal Structure & Function

Individual Tutor (Disability Services): BBE200: Animal Behaviour; BIOL 260: The Science of Sex; BIOL 334: Conservation Genetics; BIOL206: Genetics; BIOL257: Neurophysiology; BIOL108: Human Biology

Department of Philosophy, Macquarie University

2011- 2014 Tutor / Demonstrator: PHL131: Mind, Meaning and Metaphysics; PHL137: Critical Thinking

Individual Tutor (Disability Services & Indigenous Tutorial Assistance Scheme):

PHIL 137: Critical Thinking; PHIL 262: Body & Mind; PHIL 249: Biology Mind & Culture

OUA Development Officer & Online tutor: PHI220: Body and Mind; PHI310:

Philosophy & Cognitive Science

Guest Lectures

2023 "Can Synthetic Biology prevent mass extinction?" HPSC20024: Debating Science in Society, History and Philosophy of Science, University of Melbourne

"Covid and its Controversies" HPSC10002 Science and Pseudoscience, History and Philosophy of Science, University of Melbourne

2022 "Genetic Causation". PHIL-SHU 91 Philosophy of Biology, Department of Philosophy NYU Shanghai

2022 "Conserving What? Conflicting Values." HPSC2011: Science, Ethics & Society.

- School of History and Philosophy of Science, University of Sydney
- 2021 “Evidence Based Medicine: History, Benefits and Limitations” IMPA3888: Immunopathology Interdisciplinary Unit. Department of Medical Sciences, University of Sydney
- 2020 “How Covid-19 prevention and treatment intersects with sex and gender” IMPA3888: Immunopathology Interdisciplinary Unit. Department of Medical Sciences, University of Sydney
- 2017 “Genes” PHIL2677: Why biology matters for philosophy, Department of Philosophy, University of Sydney
- 2015 (x3) “Heritability (1&2)”; “De-extinction”. BIOL334: Conservation Genetics. Department of Biological Sciences, Macquarie University.
- 2014 (x2) Heritability (1&2) BIOL334: Conservation Genetics. Department of Biological Sciences, Macquarie University.

Student Supervision

- 2023-present Undergraduate research project – Scarlett Cunningham, University of Melbourne
- 2022 - present PhD student (co-supervisor) -Si Qiao Ding, University of Sydney
- 2017-2021 PhD student (co-supervisor) –Samuel O’Neill, Macquarie University
- 2014 Summer research intern –Samantha St Jean, Macquarie University

Media

Radio

- De-Extinction (2 part series). Interviewer & Guest Producer, *The Philosophers Zone*, ABC Radio National April 2023.
- Cause of Death *The Philosophers Zone*, ABC Radio National Nov 2022.
- De-extinction. *Triple J Breakfast with Sally and Erica* September 2020.
- What can genes tell us? *The Philosophers Zone*, ABC Radio National May 2020.
- De-extinction and the biodiversity crisis. *Triple J Arvos with Veronica & Sally*. Apr 2018.
- Direct to consumer genetic testing & de-extinction. *Eastside FM Tuesday Drive* Apr 2017.
- Genetics, inheritance and education. *ABC radio 702* August 2016.
- Nature via Nurture *3CR Radio “Radical Philosophy” Segment*. November 2015.
- Genetics, Memory and Inheritance. *3AW Radio “Breakfast Break”* Nov 2014.

Print

- Genetic test for gay genes misleading and dangerous. *The Conversation*. Nov 2019.
- Fear-mongering is scary, not genetic technologies themselves. *The Conversation*. February 2017.
- Nature versus Nurture: Some new thoughts on an old debate. Lead story for educational resources newsletter for teachers. Jan 2017.
- Genes are not destiny: environment and education still matter when it comes to intelligence. *The Conversation*. August 2016.
- When is an Animal not an animal? Research Ethics Draws the Line. *The Conversation*. Jan 2014.
- Explainer: What is Heritability? *The Conversation*. December 2013.

Television

- Are Vegans Right? *Courtney Facts*, ABC News. Jan 2023.

Professional Service

- Committee Member:** Committee for the History and Philosophy of Science at the Australian Academy of the Sciences (2023-present)
- Conference Organising Committee Member:** Australia / New Zealand Philosophy of Biology Workshop (2022-2023)
- Conference Program Committee Member:** Society for Metaphysics of Science (SMS) Conference (2023)
- Review Editor:** *Frontiers in Conservation Science* (2022-present)

Topic Leader & Editor: Conservation Toolbox Project. Philosophy of Conservation (2020-present)
Guest Editor: *History and Philosophy of Biological and Biomedical Sciences*. Special Issue on the History and Philosophy of Quantitative Genetics (2020)

Referee: *Biology and Philosophy* • *Philosophy of Science* • *Studies in the History and Philosophy of Science* • *European Journal for Philosophy of Science* • *Behavioral Ecology and Sociobiology* • *Microbiome* • *Behavior Genetics* • *TOPOI* • *Journal of Social Psychology* • *Erkenntnis* • *Philosophy, Theory and Practice in Biology* • *Theoria* • *Genes* • *Frontiers in Microbiology* • *Frontiers in Psychology* • *Insects* • *Frontiers in Conservation Science* • *Journal of Evolutionary Biology* • *British Journal for the Philosophy of Science*

External Honours Thesis Examiner: Department of Philosophy, University of Wollongong (2021)

Panel Member: Evolutionary Science Forum and White Paper Committee, AAS National Committee for Ecology, Evolution & Conservation (2019 - 2020)

Student Seminar Series Convenor: Theory in Biology (Macquarie U.) (2017)

Outreach & Volunteer Work

2022 –current	ORCCA Marine Mammal Rescue & Research
2016 –2023	Sydney Metropolitan Wildlife Service rescuer and carer
2018	‘Genetics: Solving Global Challenges’ (NSW Ed. Standards Registered)
2014	Adjudicator and demonstrator –North Sydney High School Philosothon
2014	Guest teacher –Tuggerah Lakes High School biology department
2013	Adjudicator and demonstrator –North Sydney High School Philosothon
2012	Guest teacher - Genetics and Cell Biology St Andrews Cathedral School
2010-2012	Volunteer Zookeeper, Taronga Zoo Sydney

References

Available upon request