

Kate (Kathleen) Lynch

AOS: Philosophy of Biology, Philosophy of Science, Philosophy of Medicine, Environmental Philosophy

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

Charles Perkins Centre,
John Hopkins Drive
University of Sydney
Camperdown
NSW 2006

✉ 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

2016 – Current	Post-Doctoral Research Fellow Department of Philosophy & Charles Perkins Centre, University of Sydney
Jan 2021-Dec 2021	Parental leave (resumed part-time in Jan 2022)
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
2015 – 2016	Research Associate Department of Philosophy, Macquarie University
2010 – 2012	Research Assistant Centre for the Integrative Study of Animal Behaviour, Macquarie U.

Laboratory and Research Group Affiliations

2016-current	Charles Perkins Centre– University of Sydney
2016-current	Theory and Methods in Biosciences – 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. Serpico, D., **Lynch K.E.** and Porter T. (*forthcoming*) New Perspectives on Quantitative Genetics. *Studies in History and Philosophy of Science*.
2. 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*
3. **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.
4. 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.
5. **Lynch, K.E.** and Blumstein D.T. (2020) 'Effective Conservation' *Trends in Ecology and Evolution*. 35(10), 857-859.
6. **Lynch, K.E.**, Parke, E., O'Malley M. (2020) 'Microbiome causality: further reflections (a response to our commentators)' *Biology and Philosophy*, 35, 29.
7. **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
8. 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.
9. 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.
10. **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.

11. **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.
12. **Lynch, K.E.** and Bourrat, P. (2017) 'Interpreting heritability causally.' *Philosophy of Science*, 84(1) 14-34.
13. **Lynch, K.E.** (2017) 'Heritability and causal reasoning.' *Biology & Philosophy*, 32(1) 25-49.
14. **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

15. **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*,
16. **Lynch, K.E.** and Blumstein D.T. (2020) 'The hidden ethical costs of conservation' *Science*. 370 (6513), 179-180.
17. **Lynch, K.E.** and Blumstein D.T. (2020) 'Conflicts and triage' *Animal Sentience* 4(27), 24
18. Blumstein, D.T. and **Lynch, K.E.** (2020) 'Innovative yes, but is it rewilding?' *Animal Sentience* 5(28), 8.
19. **Lynch, K.E.** (2019) 'Why microbes not microbiomes are better causal explanations in gut-brain research.' *Behaviour and Brain Sciences*, 42, e76.

Reference Works

20. **Lynch, K.E.** (2019) 'Heritability.' In *Encyclopedia of Evolutionary Psychological Science*. DOI: https://doi.org/10.1007/978-3-319-16999-6_2782-1
21. **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
22. **Lynch, K.E.** (2016) 'Gene environment correlation.' *Encyclopaedia of Personality Differences*. Springer. DOI: 10.1007/978-3-319-28099-8_1470-1
23. **Lynch, K.E.** 'Effective Conservation Framework' forthcoming The Integrative Conservation Clinic.

Special Journal Issues

24. 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

25. **Lynch, K.E.** 'Indirect Genetic Causes'
26. 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](#))
27. 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.

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

Conference and Workshop Presentations (*Invited, †Refereed)

Effective Conservation Behaviour

1. Ethics of Conservation Behavior Workshop, The University of Sydney 2022*
- 'Cause of Death'**
2. HPS Seminar Series, The University of Sydney 2022*
- 'Indirect genetic causes'**
3. Philosophy Seminar Series, ANU 2022*
- 'On Constructing Science: Clarifications and Implications'** (with R. Brown, S. Khan & R. Pain)
4. From Causal Reasoning to Scientific Thinking Workshop, ANU 2022*
- 'How causal are microbiomes'**
5. ERC IDEM Conference, Bordeaux, France (virtual event) 2020†
6. Philosophy Seminar Series, University of NSW 2019*
7. The Future of Microbiome Research Conference, Sydney 2018†
- 'How a focus on intelligence has shaped the nature nurture debate'**
8. ISHPSSB, Oslo 2019†
- 'Nature via nurture: Estimating gene-environment correlation and its impacts on evolution'**
9. Workshop on Culture and Cognition, CAVE, Macquarie University 2018*
10. Biological Sciences Seminar Series, Colorado State University 2018*
11. College of Natural and Agricultural Sciences, UC, Riverside 2018*
- 'Complex causation: Perceptions and reality'** (with J. Morandini)
12. Genetics and Human Agency AM, University Virginia 2018*
- 'Inheriting environments'**
13. Biological Sciences Seminar Series, Macquarie University 2017*
- 'Causation, chance, coincidence, and accident in behaviour genetics'**
14. 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)
15. Genetics and Human Agency AM, University Virginia 2017*
- 'Using formal methods in the debate over heritability and causation'**
16. Formal Methods for Philosophy of Science, University of Sydney 2017*
- 'What happens when genes cause environments'**
17. Kenneth Meredith Garven Lecture & Symposium on Determinism, University of Sydney 2016*
- 'The Baldwin Effect and the extended evolutionary synthesis'**
18. Philosophy Seminar Series, Macquarie University 2016*
19. Genes to Geosciences Annual Conference, Macquarie University 2016†
- 'Estimating complex heritabilities'**
20. 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)
21. Environmental Sciences Seminar Series, Macquarie University 2016*
- 'The Norm of Reaction and Causal Explanation'**
22. HPS Seminar Series, The University of Sydney 2016*
23. Philosophy Seminar Series, ANU 2016*
- 'Interaction's ugly cousin: The impact of G-E covariance on causal interpretations of heritability'**
24. Causation in Biology Conference, University of Bristol, 2015†
25. Philosophy of Biology at Dolphin Beach Conference 2015*
- 'Heritability and the interventionist account of causation'**
26. AAP Conference, Macquarie University 2015†
- 'Heritability and the concepts of 'gene' and 'environment'** (With P. Bourrat)
27. AAP Conference, ANU 2014†

'Epigenetics and heritability'

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

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

29. 7th Munich-Sydney-Tilburg Philosophy of Science Conference:
Evolutionary Thinking, University of Sydney 2014†

'A re-revised model of phenotypic variance'

30. AAP Conference, University of Auckland 2013†

'Decomposing causal intuitions about gene-environment covariance'

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

Teaching Experience

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

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

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

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.

Professional Service

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*

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 –current 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

PhD Committee

Supervisors: Prof. Peter Menzies, Dr. Karola Stotz, Prof. Richard Menary

Examiners: Prof. James Woodward, Prof. James Tabery, Prof. Paul Griffiths

References

Available upon request