

Kate (Kathleen) Lynch

Areas of Specialisation: Philosophy of Biology, Philosophy of Science, Philosophy of Medicine

Areas of Competence and Research Interests: Bioethics, Genetics, Causation, Conservation, Philosophy of Cognitive Science, Philosophy of Mind, Animal Behaviour

Education

2011 – 2015	PhD in Philosophy, Macquarie University Nature-via-Nurture: What to do with cases of gene-environment covariance? Thesis awarded the Vice Chancellor's Commendation
2012 (Jan-July)	Visiting Scholar. Centre for Philosophy of Science, University of Pittsburgh
2009 – 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 Charles Perkins Centre, University of Sydney Jan 2021-Dec 2021 Parental leave 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	ARC 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 (CISAB) Macquarie University

Laboratory and Research Group Affiliations

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

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

Published / In Press

1. 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*
2. 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.
3. **Lynch, K.E.** and Blumstein D.T. (2020) 'The hidden ethical costs of conservation' *Science*. 370 (6513), 179-180.
4. **Lynch, K.E.** and Blumstein D.T. (2020) 'Effective Conservation' *Trends in Ecology and Evolution*. 35(10), 857-859.
5. **Lynch, K.E.**, Parke, E., O'Malley M. (2020) 'Microbiome causality: further reflections (a response to our commentators)' *Biology and Philosophy*, 35, 29.
6. **Lynch, K.E.** and Blumstein D.T. (2020) 'Conflicts and triage' *Animal Sentience* 4(27), 24
7. Blumstein, D.T. and **Lynch, K.E.** (2020) 'Innovative yes, but is it rewilding?' *Animal Sentience* 5(28), 8.
8. **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
9. 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.

10. **Lynch, K.E.** (2019) 'Why microbes not microbiomes are better causal explanations in gut-brain research.' *Behaviour and Brain Sciences*, 42, e76.
11. **Lynch, K.E.** (2019) 'Heritability.' In *Encyclopedia of Evolutionary Psychological Science*. DOI: https://doi.org/10.1007/978-3-319-16999-6_2782-1
12. **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
13. 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.
14. **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.
15. **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.
16. **Lynch, K.E.** and Bourrat, P. (2017) 'Interpreting heritability causally.' *Philosophy of Science*, 84(1) 14-34.
17. **Lynch, K.E.** (2017) 'Heritability and causal reasoning.' *Biology & Philosophy*, 32(1) 25-49.
18. **Lynch, K.E.** (2016) 'Gene environment correlation.' *Encyclopaedia of Personality Differences*. Springer. DOI: [10.1007/978-3-319-28099-8_1470-1](https://doi.org/10.1007/978-3-319-28099-8_1470-1)
19. **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.

In Preparation

20. **Lynch, K.E.** 'How a focus on intelligence has shaped the nature nurture debate'
21. **Lynch, K.E.**, **Blumstein D.T.** A values approach to conservation biology.
22. **Lynch, K.E.** Defining the environment in gene-environment interplays.

Conference and Workshop Presentations (*Invited, †Refereed)

'How causal are microbiomes'

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| 1. ERC IDEM Conference, Bordeaux, France (virtual event) | June 2020† |
| 2. Philosophy Seminar Series, University of NSW | June 2019* |
| 3. <i>The Future of Microbiome Research Conference</i> , Sydney | Nov 2018* |

'How a focus on intelligence has shaped the nature nurture debate'

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| 4. <i>ISHPSSB</i> , Oslo | July 2019† |
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'Nature via nurture: Estimating gene-environment correlation and its impacts on evolution'

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| 5. <i>Workshop on Culture and Cognition</i> , CAVE, Macquarie University | Oct 2018* |
| 6. Biological Sciences Seminar Series, Colorado State University | July 2018* |
| 7. College of Natural and Agricultural Sciences, UC, Riverside | July 2018* |

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

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| 8. <i>Genetics and Human Agency AM</i> , University Virginia | July 2018* |
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'Inheriting environments'

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| 9. Biological Sciences Seminar Series, Macquarie University | Sep 2017 |
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'Causation, chance, coincidence, and accident in behaviour genetics'

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| 10. <i>Workshop on Chance, Coincidence and Accident</i> , ANU | July 2017* |
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'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)

11.	<i>Genetics and Human Agency AM</i> , University Virginia	July 2017*
‘Using formal methods in the debate over heritability and causation’		
12.	<i>Formal Methods for Philosophy of Science</i> , University of Sydney	Mar 2017*
‘What happens when genes cause environments’		
13.	<i>Kenneth Meredith Garven Lecture & Symposium on Determinism</i> , University of Sydney	Dec 2016*
‘The Baldwin Effect and the extended evolutionary synthesis’		
14.	Philosophy Seminar Series, Macquarie University	Sep 2016*
15.	<i>Genes to Geosciences Annual Conference</i> , Macquarie University	July 2016†
‘Estimating complex heritabilities’		
16.	ECR Biology Research Showcase, Macquarie University	Sept 2016*
‘Research frontiers in biology: Being on the front foot of science impact and engagement’ (With DJ. Kemp and M. Gillings)		
17.	Environmental Sciences Seminar Series, Macquarie University	Apr 2016*
‘The Norm of Reaction and Causal Explanation’		
18.	HPS Seminar Series, The University of Sydney	Apr 2016*
19.	Philosophy Seminar Series, ANU	Mar 2016*
‘Interaction’s ugly cousin: The impact of G-E covariance on causal interpretations of heritability’		
20.	<i>Causation in Biology Conference</i> , University of Bristol,	Sept 2015†
21.	<i>Philosophy of Biology at Dolphin Beach Conference</i>	Aug 2015
‘Heritability and the interventionist account of causation’		
22.	<i>AAP Conference</i> , Macquarie University	July 2015†
‘Heritability and the concepts of ‘gene’ and ‘environment’ (With P. Bourrat)		
23.	<i>AAP Conference</i> , ANU	July 2014†
‘Epigenetics and heritability’		
24.	Sydney- Australian National University (S-ANU) workshop	Mar 2014
‘Evidence for sources of phenotypic variance and the consequences for evolutionary prediction’		
25.	<i>7th Munich-Sydney-Tilburg Philosophy of Science Conference:</i> Evolutionary Thinking, University of Sydney	Mar 2014†
‘A re-revised model of phenotypic variance’		
26.	<i>AAP Conference</i> , University of Auckland	Dec 2013†
‘decomposing causal intuitions about gene-environment covariance’		
27.	Workshop on Causation in Science and Metaphysics, Macquarie University	July 2012

Teaching Experience

Department of Philosophy, University of Sydney

- 2021 Course convenor, lecturer and tutor: PHIL3677: Philosophy of Medicine
2020 Course convenor, lecturer and tutor: PHIL3677: Philosophy of Medicine*
2017 Guest Lecturer: PHIL2677: How Biology Matters to Philosophy
*Received student nominated teaching commendation

School of Medicine, University of Sydney

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

Faculty of Science, University of Sydney

- 2021 Guest presenter on interdisciplinary panel: AVBS 388: What is evidence?
2020 Guest presenter on interdisciplinary panel: HPSC/GEGE/IMPA/BIOL388: Interdisciplinary Project, Society and Disease

Department of Biological Sciences, Macquarie University

- 2017 Course Co-convenor and Lecturer: BIOL334: Conservation Genetics
Guest Lecturer: BIOL188/388: Advanced Biology
- 2016 Lecturer: BIOL334: Conservation Genetics
Guest Lecturer: BIOL 188/388: Advanced Biology
- 2015 Tutor / Demonstrator: BIOL334: Conservation Genetics
Individual Tutor (Disability Services): BBE200: Animal Behaviour; BIOL 260: The Science of Sex; BIOL 334: Conservation Genetics
- 2014 Tutor / Demonstrator: BIOL334: Conservation Genetics; BIOL115: The Thread of Life
Individual Tutor (Disability Services): BIOL206: Genetics; BIOL257: Neurophysiology; BIOL115: The Thread of Life; BIOL108: Human Biology
- 2013 Tutor / Demonstrator: BIOL334: Conservation Genetics; BIOL115: The Thread of Life
- 2012 Tutor / Demonstrator: BIOL115: The Thread of Life; BIOL 208: Animal Structure & Function

Department of Philosophy, Macquarie University

- 2014 Tutor / Demonstrator: PHIL131: Mind, Meaning and Metaphysics
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
- 2013 OUA Development Officer & Online tutor: PHI310: Philosophy & Cognitive Science
- 2011 Tutor / Demonstrator: PHIL137: Critical Thinking

Student Supervision

- 2022 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

Interview: De-extinction. *Triple J Breakfast with Sally and Erica* September 2020.

Interview: What can genes tell us? *The Philosophers Zone, ABC Radio National* May 2020.

Genetic test for gay genes misleading and dangerous. *The Conversation.* Nov 2019.

Interview: De-extinction and the biodiversity crisis. *Triple J Arvos with Veronica & Sally.* Apr 2018.

Fear-mongering is scary, not genetic technologies themselves. *The Conversation.* February 2017.

Interview: Direct to consumer genetic testing & de-extinction. *Eastside FM Tuesday Drive* Apr 2017

Nature versus Nurture: Some new thoughts on an old debate. Lead story for educational resources newsletter for teachers. Jan 2017

Radio interview: Genetics, inheritance and education. *ABC radio 702* August 2016.

Genes are not destiny: environment and education still matter when it comes to intelligence. *The Conversation.* August 2016.

Radio interview: Nature via Nurture *3CR Radio "Radical Philosophy" Segment.* November 2015.

Radio interview: Genetics, Memory and Inheritance. *3AW Radio "Breakfast Break"* Nov 2014.

When is an Animal not an animal? Research Ethics Draws the Line. *The Conversation.* Jan 2014.

Explainer: What is Heritability? *The Conversation.* December 2013.

Outreach / Volunteer Work

2016 –present Sydney Metropolitan Wildlife Service rescuer and carer

2018 Lecturer and Demonstrator for: 'Genetics: Solving Global Challenges' Professional development course for secondary school teachers (NSW Education Standards Registered)

2017 Reading Group Convener: Theory in Biology Reading Group –Macquarie University

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 outreach

Professional Service

Review Editor: *Frontiers in Conservation Science*

Guest Editor: *History and Philosophy of Biological and Biomedical Sciences.* Special Issue on the History and Philosophy of Quantitative Genetics (2019-2021)

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*

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

Topic Leader: Conservation Toolbox Project. Philosophy of Conservation Section (2020-present)

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

PhD Committee

Supervisors: Peter Menzies, Karola Stotz, Richard Menary

Examiners: James Woodward, James Tabery, Paul Griffiths

References

Available upon request