

EMILY C. PARKE

CURRICULUM VITAE September 2023

Te Puna Aronui | School of Humanities
Waipapa Taumata Rau | University of Auckland
Aotearoa New Zealand

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Areas of Specialization: Philosophy of Biology, Philosophy of Science

Areas of Competence: Environmental Ethics, Bioscience Ethics, Evolutionary Biology

ACADEMIC APPOINTMENTS

- 2019+ Senior Lecturer in Philosophy, University of Auckland
2015–2018 Lecturer in Philosophy, University of Auckland
2018, 2023 Visiting Fellow, Research School of Social Sciences, Australian National University
2015 Visiting Scholar, Center for Biology and Society, Arizona State University
2012 Visiting Scholar, Research School of Social Sciences, Australian National University

EDUCATION

- 2015 **PhD** University of Pennsylvania, Department of Philosophy
National Science Foundation Graduate Research Fellow
Thesis: *Experiments, simulations, and lessons from experimental evolution*
Supervisor: Michael Weisberg
Committee: Karen Detlefsen, Daniel Singer, Paul Sniegowski (Biology)
- 2004 **BA** Reed College, Philosophy

PUBLICATIONS

Articles and Book Chapters

- 2024 **Parke EC** & Hikuroa D. Against defending science: Asking better questions about Indigenous knowledge and science. *Philosophy of Science*, forthcoming.
- 2023 **Parke EC** & Plutynski A. Going big by going small: trade-offs in microbiome explanations of cancer. *Studies in History and Philosophy of Science*, 97: 101–110.
- 2023 **Parke EC**. Characterizing life: four dimensions and their relevance to origin of life research. In S Smoukov, J Seckbach & R Gordon (Eds.) *Conflicting Models for the Origin of Life*, volume in the series *Astrobiology Perspectives on Life of the Universe* (pp. 31–49). Wiley Scrivener.
- 2023 Egbert M, Hanczyc MM, Harvey I, Virgo N, **Parke EC**, Froese T, Sayama H, Penn A & Bartlett S. Behaviour and the origin of organisms. *Origins of Life and Evolution of Biospheres*, published online 11 May 2023.
- 2021 Mulgan T, Enright S, Grix M, Jayasuriya U, Ka’ili T, Lear A, Māhina A, Māhina Ō, Matthewson J, Moore A, **Parke EC**, Schouten V & Watene K. Charting just futures for Aotearoa New Zealand: Philosophy for and beyond the Covid-19 pandemic. *Journal of the Royal Society of New Zealand*, 51(S1): S167–S178.

- 2021 **Parke EC**. Trivial, interesting, or overselling? The microbiome and ‘what it means to be human’. *BioScience* 71(6): 658–663.
- 2020 O’Malley MA & **Parke EC**. Philosophy of microbiology. *Stanford Encyclopedia of Philosophy* (Fall 2020 edition), EN Zalta (Ed.), <https://plato.stanford.edu/entries/microbiology/>.
- 2020 Lynch KE, **Parke EC** & O’Malley MA. Microbiome causality: further reflections (a response to our commentators). *Biology & Philosophy* 35: 29.
- 2020 **Parke EC** & Plutynski A. What is the nature of theories and models in biology? In T Uller & K Kampourakis (Eds.), *Philosophy of science for biologists* (pp. 55–78). Cambridge University Press.
- 2020 **Parke EC**. Dimensions of life definitions. In KC Smith & C Marical (Eds.), *Social and conceptual issues in astrobiology* (pp. 79–91). Oxford University Press.
- 2019 Lynch KE, **Parke EC** & O’Malley MA. How causal are microbiomes? A comparison with the *Helicobacter pylori* explanation of ulcers. *Biology & Philosophy* 34: 62.
Target article published with peer commentaries.
- 2019 Woolley S, **Parke EC**, Kelley D, Poole A & Ganley A. Striving for clarity about the “Lamarckian” nature of CRISPR-Cas systems. *Biology & Philosophy* 34: 11.
- 2018 O’Malley MA & **Parke EC**. Microbes, mathematics, and models. *Studies in History and Philosophy of Science Part A* 72: 1–10.
- 2018 **Parke EC**, Calcott B & O’Malley MA. A cautionary note for claims about the microbiome’s impact on the “self.” *PLoS Biology* 16(9): e2006654.
- 2018 **Parke EC** & Russell JC. Ethical responsibilities in invasion biology. *The Ecological Citizen* 2(1): 17–19.
- 2014 **Parke EC**. Experiments, simulations, and epistemic privilege. *Philosophy of Science* 81(4): 516–536.
- 2014 **Parke EC**. Flies from meat and wasps from trees: reevaluating Francesco Redi’s spontaneous generation experiments. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 45: 34–42.
- 2013 **Parke EC**. What could arsenic bacteria teach us about life? *Biology & Philosophy* 28(2): 205–218.
- 2013 Bedau MA, McCaskill JS, Packard NH, **Parke EC** & Rasmussen S. Introduction to recent developments in living technology. *Artificial Life* 19: 291–298.
- 2009 Bedau MA, **Parke EC**, Tangen U & Hantsche-Tangen B. Social and ethical checkpoints for bottom-up synthetic biology, or protocells. *Systems and Synthetic Biology* 3: 65–75.
- 2009 **Parke EC** & Bedau MA. The precautionary principle and its critics. In MA Bedau & EC Parke (Eds.), *The ethics of protocells: moral and social implications of creating life in the laboratory* (pp. 69–87). The MIT Press.
- 2009 Bedau MA & **Parke EC**. Social and ethical issues concerning protocells. In S Rasmussen, MA Bedau, L Chen, D Deamer, DC Krakauer, NH Packard, & PF Stadler (Eds.), *Protocells: bridging nonliving and living matter* (pp. 641–654). The MIT Press.

Edited Volumes

- 2010 Bedau MA, Hansen PG, **Parke EC** & Rasmussen S (Eds.). *Living technology: five questions*. Automatic Press/VIP.
- 2009 Bedau MA & **Parke EC** (Eds.). *The ethics of protocells: moral and social implications of creating life in the laboratory*. The MIT Press.

Other Publications

- 2022 **Parke EC**. Review of Carol E. Cleland's *The quest for a universal theory of life: searching for life as we don't know it*, Cambridge University Press (2019). *Philosophy of Science*, 89(4), 872–875.
- 2019 BioHeritage Bioethics Panel. *Predator Free New Zealand: social, cultural, and ethical challenges*. Biological Heritage National Science Challenge Report. 26 pages. Team-written report with fifteen co-authors.

PUBLIC PHILOSOPHY, MEDIA AND INTERVIEWS

- 2022 **Parke EC**. What is the most important thing a scientist needs? *The Conversation*, February 23 2022.
- 2021 **Parke EC** & Hikuroa D. Let's choose our words more carefully when discussing mātauranga Māori and science. *The Conversation*, August 4 2021.

Interviewed in:

- SCI PHI Podcast, Episode 74 (16 February 2022)
- “Life and its origins”, Sciences of the Origin project (14 December 2021)
- “The night of philosophy”, Hi-Phi Nation podcast (19 June 2018)
- “Should we kill one species to save another?”, BBC CrowdScience (22 September 2017)
- “Q&A: Predator-free NZ's tricky ethical issues”, The New Zealand Herald (19 September 2017)

AWARDS AND FUNDING

Fellowships and Awards

- 2020 Early Career Research Excellence Award, University of Auckland
- 2019 Faculty of Arts Early Career Research Excellence Award, University of Auckland
- 2018 Visiting Fellowship, Research School of Social Sciences, Australian National University
- 2017 Marjorie Grene Prize, International Society for the History, Philosophy, and Social Studies of Biology
- 2012–2013 Hopkinson Fellowship, University of Pennsylvania
- 2011–2014 National Science Foundation (NSF) Graduate Research Fellowship

Grant Funding—Principal Investigator

- 2021–2024 Marsden Fund Fast-Start Award, Te Apārangi Royal Society of New Zealand, *Dimensions of life: integrating scientific and philosophical perspectives on the living world*, with AI Dan Hikuroa (\$300,000)

- 2018–2020 Faculty of Arts Research Collaboration Grant, University of Auckland, *Life, mauri, and the intersection of mātauranga and science*, Co-PI with Dan Hikuroa (\$10,000)
- 2017–2018 Vice-Chancellor’s Strategic Development Fund, University of Auckland, *Establishment of Te Ao Mārama—Centre for Fundamental Inquiry*, Co-PI with Kathleen Campbell and Richard Easter (\$100,000)
- 2016–2019 Biological Heritage National Science Challenge, *Bioethics panel for high tech solutions to invasive mammal pest control*, Co-PI with James Russell (\$60,000)
- 2016–2018 Faculty Research Development Fund, University of Auckland, *Addressing conceptual questions about life and its origins* (\$24,644)

Grant Funding—Associate Investigator

- 2022–2023 Transdisciplinary Ideation Fund, University of Auckland, *Ethics, education and eradication: a transdisciplinary study of challenges to Predator Free 2050 in schools and society*, PIs: Alexandra Palmer, Sally Birdsall and James Russell (\$18,000)
- 2019–2021 Strategic Research Initiatives Fund, University of Auckland, *Digital Life Institute*, PIs: Jane Allison and Anthony Poole (\$300,000)
- 2018–2019 Food and Health Programme Seed Fund, University of Auckland, *Navigating transitions to different diets: an investigation into the motivations of, and challenges to, shifts away from dairy (and back again)*, PI: Emma Sharp (\$10,000)
- 2017–2018 Vice-Chancellor’s Strategic Development Fund, University of Auckland, *Auckland Genome Biology Research Centre*, PI: Anthony Poole (\$20,000)

PRESENTATIONS

* = Refereed, ◇ = Invited

Cancer microbiome research as (more) exploratory

Philosophy of Biology at Dolphin Beach, October 2023 ◇

What is a knowledge system?

Ocean and Us, online workshop, October 2023 ◇

What is life? Narrowing the scope

Philosophy Seminar, Australian National University, October 2023 ◇

Mātauranga Māori and science: In defence of clarity (with Dan Hikuroa)

Raising the Bar Auckland, August 2023 ◇

What is a healthy microbiome?

Australia/New Zealand Philosophy of Biology Workshop, Canberra, June 2023

Asking better questions about Indigenous knowledge and science (with Dan Hikuroa)

PSA (Philosophy of Science Association), Pittsburgh, November 2022 *

Predator Free New Zealand is not really about a predator-free New Zealand: invasion biology, terminology and controversy (with some title variations)

NZAP (New Zealand Association of Philosophers), Palmerston North, December 2022

Philosophy Colloquium, Reed College, November 2022 ◇

AAP (Australasian Association of Philosophy), online conference, July 2022 *

Philosophy Seminar, UC Davis, March 2021 ◇

Killing Cats to Save Finches: Perspectives on Invasive Species and Conservation Ethics, Philadelphia, March 2019

Four dimensions of life

ROTO Lecture (The Return of the Organism in the Biosciences), Ruhr Universität Bochum, March 2022 ◇

AIMS Seminar (Agency & Intelligence on Multiple Scales), University of Wollongong, October 2021 ◇

Trivial, interesting, or overselling? The microbiome and ‘what it means to be human’

Philosophy Seminar, The Australian National University, November 2020 ◇

New Zealand Microbial Ecology Consortium (NZMEC6.0), Auckland, February 2020 ◇

How to stop arguing about invasive species

ISHPSSB 2021, virtual conference, July 2021 *

Experiments vs. models (with some title variations)

NZMS/NZSBMB (Joint meeting of the New Zealand Microbiological Society and the New Zealand Society for Biochemistry and Molecular Biology), Dunedin, November 2018 ◇

Biology Seminar, Massey University, May 2017 ◇

Auckland Bioengineering Institute, University of Auckland, October 2016 ◇

Biology Seminar, University of Auckland, September 2016 ◇

Exploratory microbial models

PSA, Seattle, November 2018 *

Tapes of life on ice: some philosophical lessons from experimental microbial evolution

Evolution Research @ Auckland Seminar, Auckland, August 2018 ◇

Introduction to the bioethics panel report on Predator Free New Zealand

SCBO (Society for Conservation Biology Oceania), Wellington, July 2018 ◇

What are biosignatures signatures of?

Philosophy Seminar, The Australian National University, June 2018 ◇

Finding, explaining, and engineering life

Te Ao Mārama Conference, Auckland, November 2018 ◇ (Keynote)

Philosophy Seminar, Victoria University of Wellington, September 2017 ◇

PBDB11 (Philosophy of Biology at Dolphin Beach), Moruya, August 2017 ◇

Sensors, Motors and Behaviour at the Origin of Life, Earth-Life Sciences Institute, Tokyo, July 2017 ◇

Philosophy Seminar, University of Waikato, July 2017 ◇

Pacific APA (American Philosophical Association), Seattle, April 2017 ◇

Hypothesis testing, exploratory experiments, and the space in between

SPSP2016 (Society for the Philosophy of Science in Practice), Rowan University, June 2016 *

NZAP 2015 (New Zealand Association of Philosophers), Massey University, December 2015

Treasured exceptions: surprise and its role in science

Philosophy Colloquium, Reed College, November 2016 ◇

ENSO Seminar Series (ENactive Seminars Online), October 2016 ◇

Philosophy Seminar, University of Otago, September 2016 ◇

Physics Seminar, University of Auckland, July 2016 ◇

Empirical Philosophy Workshop IV, Victoria University of Wellington, October 2015 ◇

Philosophy Seminar, University of Auckland, September 2015

The many faces of model organisms

Philosophy and Practice of Modelling, University of Sydney, August 2015 ◇

Experiments, simulations, and epistemic privilege

Biology Interest Group, Minnesota Center for Philosophy of Science, October 2014 ◇

Experiments, simulations, and surprises (with some title variations)

PSA 2014, Chicago, November 2014 *

ALIFE 14 (International Conference on Artificial Life), New York, July 2014 (presented poster) *

MS6 (Models and Simulations in the Sciences), Notre Dame, May 2014 *

POBAM (Philosophy of Biology at Madison), Madison, May 2014 *

PSX4 (Philosophy of Scientific Experimentation), Pittsburgh, April 2014 *

Ecolunch Ecology & Evolution Seminar, University of Pennsylvania, December 2013 ◇

What's the difference between experiment and simulation?

ISHPSSB 2013 (International Society for the History, Philosophy, and Social Studies of Biology), Montpellier, July 2013 *

Experimental evolution and external validity (with some title variations)

PBDB6, Moruya, July 2012 ◇

PSX3, Boulder, October 2012 *

AAP 2012, Wollongong, July 2012

Commentary on John Beatty's "What does it mean to say that 'history matters?'"

Philosophical Perspectives on Causal Reasoning in Biology, Minnesota Center for Philosophy of Science, May 2012 ◇

Lessons from arsenic bacteria

EPSA '11 (European Philosophy of Science Association), Athens, October 2011 *

ISHPSSB 2011, Salt Lake City, July 2011 *

Social and ethical impact of artificial cells

Blueprint for an Artificial Cell, European Center for Living Technology, Venice, May 2008 ◇

Efficient discovery and optimization using high-throughput experimentation and predictive design technology

Symyx Global Symposium, Prague, May 2008 (presented poster) *

SUPERVISION

In Philosophy, unless specified otherwise:

PhD, primary supervisor

Sam Woolley (current), *Evolution and morality: assessing the case against justifiable realism.*

David Kelley (PhD 2022), *Group agency and biological individuality.*

Sidney Carls-Diamante (PhD 2018), *Armed with information: cognition and consciousness and the octopus nervous system.*

PhD, co-supervisor

James Mansell (current), *Unlocking the information revolution: managing information as a model of the world.*

Fiona Miles (current), *The ethics of difficult medical decision making in paediatric critical care.*

James Garner (under examination, Computer Science), *An information theoretic approach to detecting interactional asymmetry in simulated robots.*

Masters, primary supervisor

James Macfarlane (current), *Epistemic authority: science and mātauranga Māori as knowledge systems.*

James Rowarth-Bell (current), *The necessity of species concept hierarchies and the choice between monism and pluralism.*

Natalie Sullivan (current)

Lysandra Zheng (current), *Experts and meta-experts.*

André Alessi (MA 2023), *Partial recall: extended memory and personal identity.*

Gabriella Courtenay (MA 2023), *Too hot to handle: the manhandling of gender in human attraction research.*

Masters, co-supervisor

Cole McArthur (current, Biology), *Sentinel plants to explore New Zealand's unique virus ecology.*

Finn Zhou (current)

Lauren Baal (under examination, Environmental Science), *Do androids dream of transgenic sheep? An examination of the state of genetic engineering regulations in Aotearoa New Zealand.*

Wenna Yeo (MA 2020), *The aesthetic appreciation of animals and its ethical complexities: restructuring our aesthetic relationships.*

BA Honours and Postgraduate Diploma dissertations

Sheryl Luo (BAHons 2022), *The value-laden ideal: an examination of roles for social values in science.*

James Rowarth (PGDipArts 2022), *What kinds of information are culturally transmittable?*

Britta Hamill (BAHons 2021), *Constructing analogy: concepts of race and gender.*

Gabriella Courtenay (BAHons 2020), *Evolution of the gays: a critique of biological research and evolutionary theories in regard to human homosexuality.*

Cameron Hyde (BAHons 2017), *Notions of minimal cognition.*

Lucius Tan (BAHons 2017), *Personal identity, mind upload, and the future of the human self.*

Sam Woolley (BAHons 2017), *Life as an individual versus life as a collective.*

Summer Scholarship projects

TBD (2023–2024), *Underrepresented voices in philosophy of science*.

TBD (2023–2024), “*Emergency*” framing in conservation (co-supervised with Ally Palmer, Biology).

Cealagh Taillon (2022–2023), *Concepts and values in conservation and invasive species management*.

Olivia Clarke-Edwards (2021–2022), *Ways of knowing: Indigenous knowledge and science*.

Helena Copsey (2020–2021), *Philosophy of science and COVID-19*.

Connor Browne (2018–2019), *Ethical and conceptual issues in astrobiology*.

Sam Woolley (2016–2017), *The origin of life and astrobiology*.

TEACHING

UNIVERSITY OF AUCKLAND, 2015+

* = co-taught, ◇ = contribution to an interdisciplinary team-taught course

Graduate

BIOSCI739: Dialogues in Biology (yearly 2016+) *

PHIL749/750: Topics in Philosophy of Science: Modelling, Representation and Inference (2017); Concepts and Categories in Biology (2018); Philosophy of Climate Science (2020); Philosophy of Medicine (2023)

Undergraduate

ASTRO200: Astrobiology (yearly 2020+) ◇

BIOMED399: Capstone: Biomedical Science (2021) ◇

CHEM254: Modelling Chemical Processes (2020) ◇

PHIL100: Mind, Knowledge, and Reality (2020–2022, 2024) *

PHIL210: Applied Ethics (2017) *

PHIL250/351: Philosophy and the Environment (2015) *

PHIL260/360: Philosophy of Science (2016, 2018)

PHIL263/363: Philosophy of Biology (2016, 2017, 2020)

PHYS100G: Models and Reality (2021) ◇

SCISCHOL202B: Addressing Climate Change (2020) *

UNIVERSITY OF PENNSYLVANIA, 2010–2013

Undergraduate

PHIL073: Ethics and the Environment

PHIL001: Introduction to Philosophy (teaching assistant for Susan Schneider)

PHIL004: History of Modern Philosophy (teaching assistant for Paul Guyer)

PHIL008: The Social Contract (teaching assistant for Kok-Chor Tan)

PHIL226: Philosophy of Biology (teaching assistant for Michael Weisberg)

SERVICE AND OUTREACH

Editorial

- 2020+ Associate Editor, *Biology & Philosophy*
2021+ Editorial Board, *Studies in History and Philosophy of Science*
2017–2021 Editorial Board, *Studies in History and Philosophy of Biological and Biomedical Sciences*

Refereeing

Acta Biotheoretica
Animal Studies Journal
Artificial Life
Astrobiology
Biology & Philosophy
British Journal for the Philosophy of Science
Cambridge University Press
Current Organic Chemistry
Erkenntnis
European Journal of Analytic Philosophy
Frontiers in Microbiology
History and Philosophy of the Life Sciences
International Studies in the Philosophy of Science
Oxford University Press
Philosophia
Philosophy of Science
PLOS Biology
Science, Technology, and Human Values
Studies in History and Philosophy of Biological and Biomedical Sciences
Synthese

Service to the Profession

* = Elected positions

- 2024–2025 Chair, Nominating Committee, PSA *
- 2020+ International Relations Committee member, Philosophy of Science Association (PSA)
- 2017–2021 Council Member, The International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB) *
- 2013–2015 Student Advisory Committee Member, ISHPSSB
- 2011–2013 Graduate Student Representative and Student Advisory Committee Chair, ISHPSSB *
- 2016–2019 General Committee, New Zealand Association of Philosophers (NZAP)
- 2015–2016 Committee on Hiring and Gender, NZAP

University and Faculty Service

- 2023–2024 Faculty of Science Waipapa Taumata Rau (new compulsory first-year) course design team
- 2023 Doctoral Exam Chair

2022+ Faculty of Arts Equity Committee

Departmental Service

2023+ Major/Specialisation Leader

2018–2023 PhD Adviser

2017 Philosophy Seminar Series Organiser

Mentoring

2020+ PSA Underrepresented Philosophy of Science Scholar Program

2016–2019 The Job Candidate Mentoring Program for Women in Philosophy

Organization and Outreach

2023 Co-organizer, Australia/New Zealand Philosophy of Biology workshop, The Australian National University

2022 Symposium organizer, “Global dimensions of epistemic diversity”, PSA biennial meeting

2019 Organizer, workshop on “Perspectives on the nature, origin, and limits of life” at the University of Auckland

2019 Co-organizer, workshop on “Killing cats to save finches: perspectives on invasive species and conservation policy” at the University of Pennsylvania

2018 Symposium organizer, “Microbes, mathematics, and the practice of modeling”, PSA biennial meeting

2016–2018 Monthly Science Correspondent, RadioLIVE, Weekend Variety Wireless with Graeme Hill

2010 Workshop leader, Initiative for Science, Society and Policy (ISSP) at the University of Southern Denmark

2005–2008 Co-organizer, four-part workshop series on ethical, legal, and social issues in bottom-up synthetic biology, for the PACE (Programmable Artificial Cell Evolution) project of the EU’s Future and Emerging Technologies Program, at the European Center for Living Technology and Los Alamos National Laboratories

OTHER ACADEMIC AND PROFESSIONAL ACTIVITY

2017+ Executive Committee, Te Ao Mārama—Centre for Fundamental Inquiry (Faculty of Science, University of Auckland)

2016–2019 Co-convenor, BioHeritage Bioethics Panel advising on social, ethical and cultural issues regarding Predator Free New Zealand.

2010–2015 Member of Paul Sniegowski’s laboratory (Biology, University of Pennsylvania).

2005–2009 Business Manager at ProtoLife Srl. (an Italian synthetic biology company)

2003–2005 Editorial Assistant for *Artificial Life* (MIT Press quarterly journal)

PROFESSIONAL MEMBERSHIPS

American Philosophical Association (APA)

Australasian Association of Philosophy (AAP)

International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB)

New Zealand Association of Philosophers (NZAP)

Philosophy of Science Association (PSA)