

RICHARD MICHAEL GUNTON

University of Winchester

QUALIFICATIONS:

PhD: Leeds 2007; **MA:** Cantab 2002 (1st); **A-levels** in Biology, Physics, Maths, Classical Greek (1999)

RESEARCH

I take scientific and philosophical approaches to complex systems: how to study phenomena at appropriate scales and distinguish scaling from perspectival effects. I have moved from ecology towards philosophy.

- 2018– Institute of Education, University College London (Honorary Senior Research Associate with Prof. Michael Reiss): writing on **philosophy of science**
- 2017–2019 Centre for Evaluation of Complexity Across the Nexus: fellow with Sue Hartley, Adam Hejnowicz and Ian Christie developing a **values-explicit environmental policy appraisal tool**, in partnership with Defra.
- 2017–2018 Sciteb Ltd: research fellow: **Global Collaboration on Financial System Stability**: simulation modelling and statistical inference to inform regulation for market stability and efficient asset allocation (with Nicholas Beale, Robert MacKay and partners in Financial Conduct Authority)
- 2016–2019 School of Biology, University of Leeds (visiting research fellow with Bill Kunin): writing on **plant ecology and conservation science**.
- 2015 School of Biology, University of Leeds (Defra Sustainable Intensification Platform Project 2): **Defining sustainable intensification and developing metrics with respect to ecosystem services** (literature review with Les Firbank, Michael Winter and Alex Inman).
- 2010–2014 School of Biology, University of Leeds (EU FP7 project SCALES: www.scales-project.net): various studies of **scaling issues in biodiversity conservation** (post-doc with Bill Kunin).
- 2008–2009 Biology & Management of Weeds group, INRA Dijon (post-doc with Sandrine Petit and Sabrina Gaba): **Effects of crop rotations on weed community trait composition**,
- 2007–2008 Forest Biodiversity Group, University of KwaZulu-Natal (post-doc with Mike Lawes): studying **Reproductive ecology of Isoglossa woodii** in coastal South Africa. I also visited Charles Darwin University, Australia, to work on the ecology of tropical vine-thicket and savanna.
- 2003–2007 School of Biology, University of Leeds (PhD with Bill Kunin): **Density-dependence in plant populations: multiple processes and multiple scales**: experiments and statistical analysis
- 2002–2003 Henry Doubleday Research Association (now Garden Organic): research assistant in **organic field trials** with Gareth Davies: farm surveys, vegetable variety trials, organising taste tests, literature reviewing, studies in history of the organic movement.

TEACHING

- 2018– **Lecturing in philosophy of maths, statistics, research skills and value studies** at University of Winchester: probability, inference, modelling; liberal arts
- 2017–2018 **Co-supervising** 2 MSc projects and 1 PhD student at University of Warwick
- 2016; 2018 Devising curriculum and delivering workshops in **philosophy of science** for postgraduate scientists through a Leeds 'Scientists in Congregations' project.
- 2014–2016 Teaching Fellow in ecology at Univ. Leeds (part-time) – undergraduate assessments, lectures and supervision; postgraduate co-supervision and lectures on **advanced statistics and GIS**
- 2013–2017 **Programming for Researchers** web resource: writing module for R; improving modules for MATLAB, Python, etc (Training & Development Office, Univ. Leeds)
- 2012–2014 10-lecture course: **Advanced Statistics in R** for PhD & MSc students (Univ. Leeds): Jan 2012; Jan 2013; 2 L's in Dec 2013; Dec 2014; 2L's in Nov 2016
- 2012, 2015 Co-supervision of MSc/MRes projects at Univ. Leeds (1 in 2012; 2 in 2015)

- 2007, 2008 Devised and delivered 4-session **introductory courses for the statistical package R** (Uni. KwaZulu-Natal, repeated at Charles Darwin Univ.)
- 2004-7; 2015 Assisting on **MSc/MRes biodiversity field trips and classes** (Univ. Leeds)
- 2005, 2006 “Researcher in Residence” at *Temple Moor High School* (A-level **field visit**, and classes on data analysis) and *Bradford Christian School* (**taught 4 lessons** for GCSE Biology)

FUNDING

- Bursary (**£5,000**) from Kirby Laing Institute for Christian Ethics to write a paper on scientific ethics
- Named researcher in UKRI award (**£31,000**) at University of York for project ‘Peri-Urban Resilient Futures’ using the Pluralistic Evaluation Framework
- Fellowship (**£10,000**) from www.cecan.ac.uk for developing a pluralistic policy appraisal tool
- Grants totalling **£19,000** for a ‘Scientists in Congregations’ educational project (2016–2018)
- Grants (**£750**) for Faith-in-Scholarship Working Group on Ecosystem Services (2015–16)
- Passed evaluation thresholds for Marie-Curie Fellowships (Aug 2013), inc. “researcher” score of 4.5 /5
- OECD Co-operative Research Programme fellowship (**€4,000**) for Dr Gyula Pinke (University of West Hungary) to work with me in Leeds (Apr–May 2013)
- Grant from Charles Darwin University (**AU\$8,308**) with Mike Lawes, for project measuring traits of tree seedlings from north-Australian coastal woodland (Aug 2008)

ACTIVITIES & ACCOLADES

- **Honorary Senior Research Associate** at Institute of Education, University College London with Prof. Michael Reiss: 2018 – present
- Member of the **KLICE Research Collective** (www.klice.co.uk/vision) with responsibility for sciences
- **Convening a session** at the Natural Capital Summit in London, May 2019
- **Invited lectures** for Valuing Nature Network in Edinburgh, July 2017, Department of Geography and Environmental Science, Liverpool Hope University, Feb 2018
- **Coordinating** part of a work-package in project SCALES with 22 active members from across Europe: compiling reports, coordinating jointly-authored book chapters and journal articles: 2011–2014
- **Leading** Faith-in-Scholarship Working Group on Ecosystem Services (12 members, 4 meetings; presentations at European Ecological Federation and British Ecological Society conferences)
- **Webinar & Blog pieces** for Centre for Evaluation of Complexity Across the Nexus (www.cecan.ac.uk)
- **Blog pieces** for Faith-in-Scholarship (<http://thinkfaith.net/fisch>), monthly.
- **Reviewing** papers for *American Naturalist*, *Methods in Ecology & Evolution*, *Global Change Biology* etc
- **PW Brian award** for best final-year project in Plant Sciences at University of Cambridge, 2002
- **Member:** British Ecological Society

PUBLICATIONS

JOURNAL ARTICLES (Scopus h-index = 13)

Gunton RM, Stafleu, MD, Reiss, MJ (in review) A general theory of objectivity: contributions from the Reformational philosophy tradition.

Gunton RM, Basden A, Hejnowicz AP, van Asperen E, Christie I, Hanson DR, Hartley SE (in review) The Pluralistic Evaluation Framework: towards democratically-accountable joined-up environmental policy-making

Kenter JO, Raymond C, Van Riper C, Azzopardi E, Brear M, Calcagni F, Christie I, Christie M, Fordham A, Gould R, **Gunton R**, *et al.* (2019) Loving the mess: navigating diversity and conflict in social values for sustainability. *Sust. Sci.* 14: 1439-1461

Christie I, **Gunton RM**, Hejnowicz AP (2019) Sustainability and the common good: Catholic social teaching and ‘integral ecology’ as contributions to a framework of social values for sustainability transitions. *Sust. Sci.* 14: 1343-1354

- Gunton R** & Gilbert F (2017) Laws in ecology: diverse modes of explanation for a holistic science? *Zygon* 52: 538-560
- Gunton RM**, van Asperen E, Basden A, Bookless D, Araya Y, Hanson DR, Goddard MA, Otieno G, Jones GO (2017) Beyond ecosystem services: valuing the invaluable. *Trends in Ecology & Evolution* 32: 249-257
- Gunton RM**, Marsh CJ, Moulherat S, Malchow A, Bocedi G, Klenke R, Kunin WE (2017) Multi-criterion trade-offs and synergies for spatial conservation planning. *Journal of Applied Ecology* 54: 903-913
- Gunton RM**, Firbank LG, Inman A, Winter DM (2016) How scalable is sustainable intensification? *Nature Plants* doi:10.1038/nplants.2016.65
- Gunton RM** & Pöyry J (2016) Scale-specific spatial density-dependence in parasitoids: a multi-factor meta-analysis. *Functional Ecology* 30: 1501–1510
- Clarke PJ, Lawes MJ, Murphy BP, Russell-Smith J, Nano CEM, Bradstock R, Enright NJ, Fontaine JB, Gosper CR, Radford I, Midgley JJ, **Gunton RM** (2015) A synthesis of postfire recovery traits of woody plants in Australian ecosystems. *Science of the Total Environment* 534: 31–42
- Gunton RM**, Polce C & Kunin WE (2015) Predicting ground temperatures across European landscapes. *Methods in Ecology and Evolution* 6: 532–542
- Pinke, G & **Gunton RM** (2014) Refining rare weed trait syndromes along arable intensification gradients. *Journal of Vegetation Science* 25: 978-989
- Gunton RM**, Petit S, Gaba S (2011) Functional traits relating arable weed communities to crop characteristics. *Journal of Vegetation Science* 22:541-550
- Gunton RM** (2011) Integrating associational resistance into arable weed management. *Agriculture, Ecosystems & Environment* 142: 129-136
- Tsvuura Z, ME Griffiths, **Gunton, RM**, Lawes MJ (2011) Predator satiation and recruitment in a mast fruiting monocarpic forest herb. *Annals of Botany* 107: 379-387
- Boyes LJ, **Gunton RM**, Griffiths ME, Lawes MJ (2011) Causes of arrested succession in coastal dune forest. *Plant Ecology* 212:21-32
- Tsvuura Z, Griffiths ME, **Gunton RM**, Franks PJ, Lawes MJ (2010) Ecological filtering by a dominant herb selects for shade tolerance in the tree seedling community of coastal dune forest. *Oecologia* 164:861-870
- Franklin D, **Gunton RM**, Schatz, J, Lawes MJ (2010) Resprouting responses of trees in a fire-prone tropical savanna following severe tornado damage. *Austral Ecology* 35: 685-694
- Gunton RM**, Boyes LJ, Griffiths ME, Lawes MJ (2010) Regeneration niches and functional traits of three common species in sub-tropical dune forest. *Forest Ecology & Management* 260:1490-1497
- Gunton RM** & Kunin WE (2009) Density-dependence at multiple scales in experimental and natural plant populations. *Journal of Ecology* 97:567-580
- Gunton RM** & Kunin WE (2007) Density effects at multiple scales in an experimental plant population. *Journal of Ecology* 95:435-445

OTHER PUBLICATIONS (locally peer-reviewed)

- Gunton RM** & **Gilbert F** (2019) Reintegrating biology: nothing in evolution makes sense except in the light of ecology. In: Rethinking Biology: Public Understandings (ed. Reiss M, Watts F, Wiseman H) World Scientific
- Gunton RM** (2015) Fine-tuning Arguments For The Existence of God: A Shot In The Foot? In: Laws of Nature, Laws of God? ed Spurway N. Cambridge Scholars Publishing, Cambridge.
- 5 chapters in: Scaling in Ecology and Conservation, ed. Henle K *et al.* (2014) PENSOFIT, Sofia:
- Henle K, Grobelnik V, Potts SG, Scott AV, Kunin WE, **Gunton RM**, Matsinos YG, Similä J, Pantis JD, Klenke R, Settele J, Penev L. Scaling in ecology and biodiversity conservation: An introduction. pp 13-18.
 - **Gunton RM**, Klenke R, Paloniemi R, Gavish Y, Marsh C, Kunin WE, Henle K. The meaning of *scale*. pp 19-22
 - Marsh CJ, **Gunton RM**, Kunin WE. Conserving different kinds of biodiversity in different sorts of landscapes. p90-94
 - **Gunton RM**, Lehsten V, Kunin WE. Downscaling climate data to predict species' ranges. pp 104-107
 - Henle K, Potts SG, Scott AV, Kunin WE, **Gunton RM**, Schmeller DS, Matsinos YG, Similä J, Pantis JD, Mazaris AD, Grobelnik V, Grimm A, Penev L, Klenke R, Settele J. Lessons learned. pp 193-200
- Gunton R** (2004) The abundance status of Camphor Thyme *Thymus camphoratus* on Quinta da Rocha. *A Rocha Portugal Observatory Report for 2002* (Associação A Rocha, Portimão, Portugal) pp 29-33.
- Gunton R** (2004) Vegetation dynamics on the Alvor sand dunes. *Ibid.*, pp 34-39.