

Tom Rhys Bishop CV

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Education

- Oct 2012 – Mar 2016 **University of Liverpool, UK**
PhD in Ecology
- Oct 2011 – Sep 2012 **Imperial College London, UK**
MRes Entomology *Distinction*
- Oct 2008 – Jun 2011 **Lady Margaret Hall, University of Oxford, UK**
BA (Hons) Biological Sciences *1st Class*
- Sep 2001 – Jun 2008 **Whitchurch High School, Cardiff, UK**
A-levels: AAA

Appointments

- Oct 2018 – present **University of Pretoria, South Africa**
Dept. of Zoology and Entomology
Extraordinary Lecturer
- May 2018 – present **University of Liverpool, UK**
School of Environmental Sciences
Leverhulme Early Career Research Fellow
- Aug 2016 – Apr 2018 **University of Pretoria, South Africa**
Centre for Invasion Biology, Dept. of Zoology and Entomology
Vice-Chancellor's Postdoctoral Research Fellow

Scientific Publications

Google Scholar: h-index = 14; ORCID: 0000-0001-7061-556X

* indicates publications where I am contact author. † indicates students that I have supervised.

2021

25. ***Bishop, T.R.**, Tomlinson, A., McNeice, T., Sfenthourakis, S., and Parr, C.L. (2021) The effect of fire on ant assemblages does not depend on habitat openness but does select for large, gracile predators. *Ecosphere* (accepted)
24. †Lasmar, C.J., **Bishop, T.R.**, Parr, C.L., Queiroz, A.C.M., Schmidt, F.A., and Ribas, C.R. (2021) Geographical variation in ant foraging activity and resource use is driven by climate and net primary productivity. *Journal of Biogeography* (accepted)
23. Cooke, J., Araya, Y., Bacon, K.L., Bagniewska, J.M., Batty, L., **Bishop, T.R.**, Burns, M., Charalambous, M., Daversa, D.R., Dougherty, L.R., Dyson, M., Fisher, A.M., Forman, D., Garcia, C., Greene, K., Harney, E., Hesselberg, T., John, E.A., Knell, R., Maseyk, K., Mauchline, A.L., Peacock, J., Pernetta, A.P., Pritchard, J., Sutherland, W.J., Thomas, R.L., Tigar, B., Wheeler, P., White, R.L., Worsfold, N.T. and Lewis, Z. (2021) Teaching and learning in ecology: a horizon scan of emerging challenges and solutions. *Oikos*, 130, 15-28

22. Jins, V.J., Panigrahi, M., Jaypal, R. and **Bishop, T.R.** (2021) Elevational gradients of reptile richness in the southern Western Ghats of India: evaluating spatial and bioclimatic drivers. *Biotropica*, 53: 317-328

2020

21. Boyle, M.J.W., **Bishop, T.R.**, Luke, S.H., van Breugel, M., Evans, T.A., Pfeifer, M., Fayle, T.M., Hardwick, S.R., Lane-Shaw, R.I., Yusah, K.M., Ashford, I.C.R., Ashford, O.S., Garnett, E., Turner, E.C., Wilkinson, C.L., Chung, A.Y.C. and Ewers R.M. (2020) Localised climate change defines ant communities in human-modified tropical landscapes. *Functional Ecology* (online early)

20. **Bishop, T.R.***, Griffiths, H.M., Ashton, L.A., Eggleton, P., Woon, J.S., and Parr, C.L. (2020) Clarifying terrestrial recycling pathways. *Trends in Ecology and Evolution*, S0169-5347

19. Law, S.J., **Bishop, T.R.**, Eggleton, P., Griffiths, H.M., Ashton, L.A. and Parr, C.L. (2020) Darker ants dominate the canopy: testing macroecological hypotheses for patterns in colour along a microclimatic gradient. *Journal of Animal Ecology*, 89: 347-359

2019

18. †Gaudard, C., Robertson, M.P. and ***Bishop, T.R.** (2019) Low levels of intraspecific trait variation in a keystone invertebrate group. *Oecologia*, 4: 725-735

17. ***Bishop, T.R.**, Parr, C.L., Gibb, H., van Rensburg, B.J., Braschler, B., Chown, S.L., Foord, S.H., Lamy, K., Munyai, T.C., Okey, I., Tshivhandekano, P.G., Werenkraut, V. and Robertson, M.P. (2019) Thermoregulatory traits combine with range shifts to alter the future of montane ant assemblages. *Global Change Biology*, 25: 2162– 2173

16. Joseph, G.S., Muluvhahotho, M.M., Seymour, C.L., Munyai, T.C., **Bishop, T.R.** and Foord, S.H. (2019) Stability of Afromontane ant diversity decreases across an elevation gradient. *Global Ecology and Conservation*, 17: e00596

2018

15. Arnan, X., Andersen, A.N., Gibb, H., Parr, C.L., Sanders, N.J., Dunn, R.R., Angulo, E., Baccaro, F.B., **Bishop, T.R.**, [35 others] and Retana, J. (2018) Dominance-diversity relationships in ant communities differ with invasion. *Global Change Biology*, 24: 4614-4625

14. Nowrouzi, S., Andersen, A.N., **Bishop, T.R.** and Robson, S.K.A. (2018) Is thermal limitation the primary driver of elevational distributions? Not for montane rainforest ants in the Australian Wet Tropics. *Oecologia*, 188: 333-342

13. Gibb, H., Sanders, N.J., Dunn, R.R., Arnan, X., Vasconcelos, H.L., Donoso, D.A., Andersen, A.N., Silva, R.R., **Bishop, T.R.**, Gomez, C., Grossman, B.F., Yusah, K.M., Luke, S.H., Pacheco, R., Pearce-Duvet, J., Retana, J., Tista, M. and Parr, C.L. (2018) Habitat disturbance selects against both small and large species across varying climates. *Ecography*, 41:1184-1193

2017

12. ***Bishop, T.R.** (2017), Taxonomic and functional ecology of montane ants. *Frontiers of Biogeography*, 9

11. Parr, C.L., Dunn, R.R., Sanders, N.J., Weiser, M.D., Photakis, M., **Bishop, T.R.**, Fitzpatrick, M.C., Arnan, X., Baccaro, F., Brandão, C.R.F., Chick, L., Donoso, D.A., Fayle, T.M., Gómez, C., Grossman, B., Munyai, T.C., Pacheco, R., Retana, J., Robinson, A., Sagata, K., Silva, R.R., Tista, M., Vasconcelos, H., Yates, M., and Gibb, H. (2017), GlobalAnts: a new database on the geography of ant traits (Hymenoptera: Formicidae). *Insect Conservation and Diversity*, 10: 5-20
10. ***Bishop, T.R.**, Robertson, M.P., van Rensburg, B.J. and Parr, C.L. (2017), Coping with the cold: minimum temperatures and thermal tolerances dominate the ecology of mountain ants. *Ecological Entomology*, 42: 105-114
9. Gibb, H., Dunn, R.R., Sanders, N.J., Grossman, B.F., Photakis, M., Abril, S., Agosti, D., Andersen, A.N., Angulo, E., Armbrrecht, I., Arnan, X., Baccaro, F.B., **Bishop, T.R.**, [60 others] and Parr, C.L. (2017), A global database of ant species abundances, *Ecology*, 98: 883-884

2016

8. ***Bishop, T.R.**, Robertson, M.P., Gibb, H., van Rensburg, B.J., Braschler, B., Chown, S.L., Foord, S.H., Munyai, T.C., Okey, I., Tshivhandekano, P.G., Werenkraut, V. and Parr, C.L. (2016), Ant assemblages have darker and larger members in cold environments. *Global Ecology and Biogeography*, 25: 1489–1499
7. †Schofield, S.F., ***Bishop, T.R.** and Parr, C.L. (2016), Morphological characteristics of ant assemblages differ among contrasting biomes. *Myrmecological News*, 23: 129-137
6. Májeková, M., Paal, T., Plowman, N.S., Bryndová, M., Kasari, L., Norberg, A., Weiss, M., **Bishop, T.R.**, Luke, S.H., Sam, K., Le Bagousse-Pinguet, Y., Lepš, J., Götzenberger, L. and de Bello, F. (2016), Evaluating functional diversity: missing trait data and the importance of species abundance structure and data transformation. *PLoS ONE* 11(2): e0149270.

2015

5. Gibb, H., Sanders, N.J., Dunn, R.R., Watson, S., Photakis, M., Abril, S., Andersen, A.N., Angulo, E., Armbrrecht, I., Arnan, X., Baccaro, F.B., **Bishop, T.R.**, [34 others] and Parr, C.L. (2015), Climate mediates the effects of disturbance on ant assemblage structure. *Proceedings of the Royal Society B*, 282: 20150418.
4. ***Bishop, T.R.**, Robertson, M.P., van Rensburg, B.J. and Parr, C.L. (2015), Contrasting species and functional beta diversity in montane ant communities. *Journal of Biogeography*, 42: 1776–1786.
3. Ewers, R.M., Boyle, M.J.W., Gleave, R., Plowman, N.S., Benedick, S., Bernard, H., **Bishop, T.R.**, Bakhtiar, E.Y., Chey, V.K., Chung, A.Y.C., Davies, R.G., Edwards, D.P., Eggleton, P., Fayle, T.M., Hardwick, S.R., Homathevi, R., Kitching, R.L., Khoo, M.S., Luke, S.L., March, J.J., Nilus, R., Pfeifer, M., Rao, S.V., Sharp, A.C., Snaddon, J.L., Stork, N.E., Struebig, M.J., Wearn, O.R., Yusah, K.M. and Turner E.C. (2015) Logging cuts invertebrate dominance of tropical rainforest ecosystem functions. *Nature Communications*, 6.

2014

2. ***Bishop, T.R.**, Robertson, M.P., van Rensburg, B.J. and Parr, C.L. (2014), Elevation-diversity patterns through space and time: ant communities of the Maloti-Drakensberg Mountains of southern Africa. *Journal of Biogeography*, 41 (12): 2256-2268.

2013

1. ***Bishop, T. R.**, Botham, M. S., Fox, R., Leather, S. R., Chapman, D. S. and Oliver, T. H. (2013), The utility of distribution data in predicting phenology. *Methods in Ecology and Evolution*, 4 (11): 1024–1032.

Manuscripts in review

Klimes, P., **Bishop, T.R.**, Fayle, T.M., and Xing, S. Reported climate change impacts on cloud forest ants are driven by sampling bias: a critical evaluation of Warne et al., 2020. (*Biotropica*)

Grants

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| 2020 | Australian Research Council Discovery Project (Co-I / postdoc, AUS \$500,000 / £275,000). <i>I contributed significantly to the writing of the grant which is based on my own work on functional traits. I am the named postdoc and will shift to a Co-I role if I do not take up the postdoc at the end of 2021.</i> |
| 2020 | British Ecological Society Large Grant (PI, £20,000) |
| 2020 | National Research Foundation (South Africa) Incentive Funding (PI, 50,000 ZAR / £2,350) |
| 2019 | Royal Entomological Society Goodman Award (Co-I, £2,700, grant to build outreach) |
| 2018 | Early Career Researcher Fund, University of Liverpool (PI, £2,000) |
| 2017 | Leverhulme Early Career Research Fellowship (PI, £170,000) |
| 2017 | Claude Leon Foundation Postdoctoral Fellowship (PI, 550,000 ZAR / £25,800; declined) |
| 2016 | University of Pretoria Vice-Chancellor's Fellowship (PI, 440,000 ZAR / £20,675) |
| 2014 | International Union for the Study of Social Insects Travel Grant (£1,300) |
| 2013-15 | NERC Life Sciences Mass Spectrometry Support Fund (£7,000) |
| 2012-16 | NERC PhD studentship (£50,200) |
| 2011 | Grundy Educational Trust Scholarship for MRes (£3,000) |
| 2009 | Lady Margaret Hall, University of Oxford, Heron-Allen Travel Scholarship (£500) |

Awards

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| 2019 | National Research Foundation (South Africa) Rated Scientist: Y (young) category |
| 2018 | Best paper in <i>Ecological Entomology</i> during 2016/2017 |
| 2017 | Publons Top Reviewer for Agricultural and Biological Sciences |
| 2012 | Imperial College Silwood Park Poster Competition: 1 st Place |

Student Supervision and Co-supervision

* as lead supervisor.

Note: in South Africa, Hons is a separate degree, comparable in standard and workload to a UK MSc.

Hons

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| 2020 | Jabulile Mzizi, University of Pretoria |
| 2019 – 2020 | Olive Summerfield, University of Liverpool (manuscript in prep.) |

2019 *Eileen Engelbrecht, University of Pretoria (manuscript in prep.)
 2017 *Clara Gaudard, University of Pretoria (Distinction, published paper).
 2016 Greg de Jong, University of Pretoria
 2013 – 2014 Sophie Schofield, University of Liverpool.

MSc

2016 – 2017 Sarah Newman, University of Pretoria (Distinction, manuscript in prep.).
 2014 – 2015 *Sophie Schofield, University of Liverpool (published paper)

PhD

2018 – 2020 Chaim Lasmar, Universidade Federal de Lavras.
I was invited to be a member of the supervisory team half-way through Dr Lasmar's PhD due to my expertise in macroecological analyses. One manuscript published, one in prep.

Teaching Experience

University of Liverpool

2019 **MSc Rewilding and Land Management (10 students)**
 Field course and classroom teaching in the Cairngorms, Scotland. I co-led the field course with one other staff member. Course involved visiting landowners, conservation NGOs and the National Park Authority to understand issues around rewilding, as well as data collection (questionnaires, vegetation plots, habitat variable measurement) and data analysis. Assessed student presentations and written work.

2015, 2016, 2019 **1st year Laboratory and Field Techniques for Ecologists (~50 students)**
 Field course and classroom teaching at Dale Fort, Wales. I assisted in 2015 and 2016, and I led the terrestrial invertebrate component in 2019. This involved lecturing, teaching sampling techniques in the field, and invertebrate identification in the lab. I was due to lead this component again in 2020 but the course was cancelled.

2015-2016 **1st to 3rd year Statistics for Biologists and Environmental Scientists (~150 students)**
 Teaching assistant for general courses in statistics and data analysis in *Minitab*.

University of Pretoria

2015-2019 **3rd year Conservation Ecology / Community Ecology (~50 students)**
 Field course to the Maloti-Drakensberg Mountains. I assisted in 2015 and co-led the course with one other member of staff from 2016 onwards. This involved lecturing, teaching sampling techniques in the field, and invertebrate identification in the lab. The residential and remote nature of the course requires a large amount of health and safety planning and administration – particularly as the field site crosses an international border (South Africa and Lesotho) and 4x4 driving skills are required. Assessed student presentations and written work, advised on use of *R*.

2018-2019 **3rd year Insect Diversity (~30 students)**
 Lectured on ant diversity, systematics, and ecology. Set exam questions.

External

- 2019 **Royal Society-DFID Ant Taxonomy and Ecology Training Course in Ghana (20 students)**
Residential skills course for postgraduates on ant diversity, systematics, sampling techniques, curation techniques, and data analysis. I was one of three teaching staff. Involved lecturing, supervising lab practicals and field work.
- 2018 **Royal Society-DFID Ant Taxonomy and Ecology Training Course in South Africa (25 students)**
As above. I was one of three teaching staff.

Public Speaking

Invited Talks

- Jul 2021 **ICE 2021, Helsinki, Finland**
Invited to speak. Symposium “Physiological Responses to Environmental Stress” (Initial invite for 2020, rescheduled due to COVID-19)
- Oct 2020 **Departmental Seminar, University of Copenhagen, Denmark**
“Ants of the Rainbow: locked-down perspectives on ant functional biogeography”
- Jul 2014 **Departmental Seminar, University of Queensland, Australia**
“Taxonomic and functional beta diversity of montane ant communities”
- Mar 2014 **Departmental Seminar, University of Pretoria, South Africa**
“Diversity through space and time: ants of the Maloti-Drakensberg mountains, southern Africa”

Selected Conference Talks

- Dec 2019 **International Union for the Study of Social Insects, NW European Section**
“What is the shape of an ant?”
- Jul 2019 **British Ecological Society Macroecology SIG Meeting, University of Exeter, UK**
“The scaling and sharing of ant global trait diversity”
- Dec 2018 **Annual Meeting of the British Ecological Society, Birmingham, UK**
“The scaling and sharing of ant global trait diversity”
- Jul 2017 **ZSSA/ESSA Joint Congress, Pretoria, South Africa**
“Life on the Dragon's Back: The cold, not the heat, limits the distribution and behaviour of montane ants”
- Dec 2015 **Annual Meeting of the British Ecological Society, Edinburgh, UK**
“Global variation in ant colour is controlled by temperature and body size”
- Jun 2015 **EU Macroecology Meeting, University of Copenhagen, Denmark**
“The colour of ants”
- Jul 2014 **International Union for the Study of Social Insects, Cairns, Australia**
“Taxonomic and functional beta diversity of montane ant communities”
- Aug 2013 **11th INTECOL Congress, London, UK**
“Community and functional structure across an elevation gradient: ant assemblages in the Drakensberg Mountains, South Africa”
- Jul 2012 **Royal Entomological Society Annual Meeting, Cambridge, UK**
“The utility of distribution data in predicting insect phenology”

Scientific Service

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| 2020-present | British Ecological Society Peer Review College Required service following successful Large Grant application. |
| 2019-2020 | British Ecological Society Macro SIG Group Annual Meeting Organiser Sole local organiser in Liverpool (~80 delegates, postponed due to COVID-19). |
| 2018-present | British Ecological Society Macro SIG Committee Member |
| 2018-present | Journal of Biogeography Editorial Review Board A board of trusted reviewers for the journal. |
| 2018 | Ecology and Marine Biology Seminar Series Co-organiser University of Liverpool |
| 2017 | Zoological Society of Southern Africa/Entomological Society of Southern Africa 2017, Pretoria. Symposium Co-organiser “Social Insects in Africa” |

Editorial and Review

Editorial Positions

2021 – present Associate Editor, Journal of Animal Ecology

Reviewing

Publons verified profile: publons.com/researcher/1198165/tom-rhys-bishop/

Journals: *Acta Oecologica; American Naturalist; Applied Vegetation Science; Asian Myrmecology; Basic and Applied Ecology; Biodiversity and Conservation; Biological Conservation; Biotropica; Community Ecology; Diversity and Distributions; Ecography; Ecological Entomology; Ecology; Ecology Letters; Entomological Science; European Journal of Entomology; Functional Ecology; Global Ecology and Biogeography; Insect Conservation and Diversity; Insectes Sociaux; Journal of Animal Ecology; Journal of Biogeography; Journal of Hymenoptera Research; Journal of Insect Conservation; Journal of the Royal Society Interface; Methods in Ecology and Evolution; Myrmecological News; PeerJ; PLOS One; Royal Society Open Science; Scientific Reports; Zoologischer Anzeiger.*

Grants: Czech Science Foundation (Czech Republic); National Research Foundation (South Africa); Liverpool ECR Fund.

Referees

Prof. Catherine Parr (kate.parr@liverpool.ac.uk), Department of Earth, Ocean and Ecological Sciences, University of Liverpool, Liverpool, L69 3GP, UK

Prof. Mark Robertson (mark.robertson@zoology.up.ac.za), Centre for Invasion Biology, Department of Zoology and Entomology, University of Pretoria, Pretoria 0002, South Africa

Dr Paul Eggleton (p.eggleton@nhm.ac.uk), Entomology Department, Natural History Museum, Cromwell Road, London SW7 5BD, UK