

# Lewis G. Spurgin

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## Education and career

- 2016 - 2019: BBSRC Future Leader Fellow ‘The genomics of thermal adaptation in a model pest insect’ Biological Sciences, University of East Anglia
- 2015 - 2016: EGI research fellow ‘Avian behaviour, ecology and evolution’ Edward Grey Institute, University of Oxford
- 2012 - 2014: NWO Rubicon research fellow ‘Genomic approaches to conserving genetic diversity in translocated populations’ Behavioural Ecology and Self-organization, University of Groningen
- 2008 - 2012: PhD ‘Adaptation and differentiation in wild bird populations’ Biological Sciences, University of East Anglia
- 2005 - 2008: BSc (Hons) Ecology (First Class) Biological Sciences, University of East Anglia

## Awards and prizes

- 2013 The Christer Hemborg Lecture, Uppsala University (biannual award and lecture given by a young evolutionary biologist)
- 2012 ‘Company of Biologists Award’ for best PhD thesis University of East Anglia
- 2010 Most cited paper of 2010, Proceedings of the Royal Society B
- 2008 ‘Michael Graham Prize’ for best performance in an Ecology degree, University of East Anglia

## Research grants

- 2016 NRP Science links seed corn funding ‘RNAi and pest control: an experimental investigation into the evolution of resistance and effects on non- target species’ (£14,931)
- 2016 BBSRC Future Leader Fellowship ‘The genomics of thermal adaptation in a model pest insect’ (£299,075)
- 2015 Edward Grey Institute Research Fellowship ‘The genomics of adaptation in wild birds and laboratory beetles’ (~£80,000)
- 2014 British Ecological Society large research grant ‘Genomic consequences of selection, drift and founder effects in island pipit populations’ (£15,300)
- 2013 British Ecological Society parliamentary shadowing scheme fellowship (£1,000)
- 2012 Netherlands Organisation for Scientific Research (NWO) Rubicon fellowship ‘Genomic approaches to conserving genetic diversity in translocated populations’ (£78,000)

## Peer-reviewed publications

### Published and accepted manuscripts

22. McDonald, G.C., **Spurgin, L.G.**, Fairfield, E.A., Richardson, D.S., Pizzari, T. (2017) Pre- and post-copulatory sexual selection favour aggressive, young males in polyandrous groups of red junglefowl. *Evolution*, (In Press)

21. Bebbington, K., Fairfield, E.A., **Spurgin, L.G.**, Kingma, S.A., Dugdale, H., Komdeur, J., Richardson, D.S. (2017) Joint care can outweigh costs of non-kin competition in communal breeders. *Journal of Evolutionary Biology*, (In Press)
20. Bebbington, K., Kingma, S.A., Fairfield, E.A., **Spurgin, L.G.**, Komdeur, J., Richardson, D.S. (2016) Consequences of sibling rivalry vary across life in a passerine bird. *Behavioural Ecology*, doi: 10.1093/beheco/arw167
19. Gonzalez-Quevedo, C., Davies R.G., Phillips, K.P., **Spurgin, L.G.**, Richardson, D.S. (2016) Landscape scale variation in an anthropogenic factor shapes immune gene variation within a wild population. *Molecular Ecology*, 25, 4234-4246
18. Bebbington, K., **Spurgin, L.G.**, Fairfield, E.A., Dugdale, H., Komdeur, J., Burke, T., Richardson, D.S. (2016) Telomere length reveals cumulative individual and transgenerational inbreeding effects in a passerine bird. *Molecular Ecology*, 25, 2949-2960
17. Illera, J.C., **Spurgin, L.G.**, Rodriguez-Exposito, E., Nogales, M., Rando, J.C. (2016) What are we learning about speciation and extinction from the Canary Islands? *Ardeola*, 63, 5-23
16. Gonzalez-Quevedo, C., **Spurgin, L.G.**, Illera, J.C., Richardson, D.S. (2015) Drift, not selection, shapes toll-like receptor variation among oceanic island populations. *Molecular Ecology*, 24, 5852-5863
15. Hammers, M. Kingma, S.A., Bebbington, K. van de Crommenacker, J., **Spurgin, L.G.**, Richardson, D.S., Burke, T. Hugdale, H.L., Komdeur, J. (2015) Senescence in the wild: insights from a long-term study on Seychelles warblers. *Experimental Gerontology*, 71, 69-79
14. Lumley, A.J., Michalczyk, L., Kitson, J.J.N., **Spurgin, L.G.**, Morrison, C.A., Godwin, J.L., Dickinson, M.E., Martin, O.Y., Emerson, B.C., Chapman T.C., Gage, M.J.G. (2015) Sexual selection protects against extinction. *Nature*, 522, 470-473
13. Gonzalez-Quevedo, C., Phillips, K.P., **Spurgin, L.G.**, Richardson, D.S. (2015) 454 screening of individual MHC variation in an endemic island passerine. *Immunogenetics*, 67, 149-162
12. Padilla, D.P.\*, **Spurgin, L.G.\***, Fairfield, E., Illera, J.C., Richardson, D.S. (2015) Population history, gene flow and bottlenecks in island populations of a secondary seed disperser, the southern grey shrike (*Lanius meridionalis* koenigi). *Ecology and Evolution*, 5, 36-45 (\*joint first authors)
11. **Spurgin, L.G.**, Wright, D.J., van der Velde, M., Collar, N.J., Komdeur, J., Burke, T.A., Richardson, D.S. (2014) Museum DNA reveals the demographic history of the endangered Seychelles warbler. *Evolutionary Applications*, 7, 1134-1143
10. Wright, D.J., **Spurgin, L.G.**, Collar, N.J., Komdeur, J., Burke, T.A., Richardson, D.S. (2014) The impact of translocations on neutral and functional genetic diversity within and among populations of the Seychelles warbler. *Molecular Ecology*, 23, 2165-2177
9. **Spurgin, L.G.**, Illera, J.C., Dawson, D.A., Jorgensen, T.H., Richardson, D.S. (2014) Genetic and phenotypic divergence in an island pipit: isolation by distance, by colonisation or by adaptation? *Molecular Ecology*, 23, 1028-1039
8. **Spurgin, L.G.** (2013) Does promiscuity explain differences in levels of genetic diversity across passerine birds? *Evolution*, 67, 3071-3072
7. Dawson, D.A., Ball, A.D., **Spurgin, L.G.**, Martin-Galvez, D., Stewart, I.R.K., Horsburgh, G.J., Potter, J.D., Molina-Morales, M., Bicknell, A.W.J., Hodges, S., Ekblom, R., Slate, J., Burke, T.A. (2013) High-utility conserved avian microsatellite markers enable parentage and population studies across a wide range of species. *BMC Genomics*, 14, 176
6. **Spurgin, L.G.**, Illera, J.C., Padilla, D.P., Richardson, D.S. (2012) Biogeographic patterns and co-occurrence of pathogenic infection across island populations of Berthelot's pipit (*Anthus berthelotii*). *Oecologia*, 168, 691-701

5. Dawson, D.A., Horsburgh, G.J., Krupa, A.P., Stewart, I.R.K., Skjelseth, S., Jensen, H., Ball, A.D., **Spurgin, L.G.**, Burke, T.A. (2012) A predicted microsatellite map of the house sparrow *Molecular Ecology Resources*, 12, 501-523
4. **Spurgin, L.G.**, van Oosterhout, C., Illera, J.C., Bridgett, S., Gharbi, K., Emerson, B.C., Richardson, D.S. (2011) Gene conversion rapidly generates MHC diversity in recently founded bird populations. *Molecular Ecology*, 20, 5213-5225
3. **Spurgin, L.G.**, Richardson, D.S. (2010) How pathogens drive genetic diversity: MHC, mechanisms and misunderstandings. *Proceedings of the Royal Society B, Biological Sciences*, 277, 979-988
2. Worley K., Collet J., **Spurgin, L.G.**, Cornwallis C., Pizzari T., Richardson D.S. (2010) MHC heterozygosity and survival in red junglefowl. *Molecular Ecology*, 19, 3064-3075
1. Dawson, D.A., Horsburgh, G.J., Kupper, C., Stewart, I.R.K., Ball, A.D., Durrant, K.L., Hansson, B., Bacon, I., Bird, S., Klein, A., Krupa, A.P., Lee, J.W., Martin-Galvez, D., Simeoni, M., Smith, G., **Spurgin, L.G.**, Burke, T.A. (2010) New methods to identify conserved microsatellite loci and develop primer sets of high cross-species utility as demonstrated for birds. *Molecular Ecology Resources*, 10, 475-494

### Submitted manuscripts

3. **Spurgin, L.G.**, Bebbington, K. Fairfield, E.A., Hammers, M., Komdeur, J., Burke, T., Dugdale, H.L., Richardson, D.S. Spatio-temporal variation in lifelong telomere dynamics in a long-term ecological study.
2. Bosse, M\*. **Spurgin, L.G.\***, Laine, V.N., Cole, E.F., Firth, J.A., Gienapp, P., Gosler, A.G., McMahon, K., Poissant, J., Verhagen, I., Groenen, M.A.M., van Oers, K., Sheldon, B.C., Visser, M.E., Slate, J. The footprint of natural selection on genetics, morphology and behaviour in a wild bird (\*joint first authors).
1. Tan, C.K.W., Doyle, P., Burrell, S., Bagshaw, E., Wigby, S., Fairfield, E.A., **Spurgin, L.G.**, Richardson, D.S., Pizzari, T. Dissecting the influence of inbreeding, parental age and post-insemination sperm age on fitness-related traits in a bird population.

### Invited seminars

- 2016 'The great tit HapMap project: population structure and adaptation in a model passerine' Adam Mickiewicz University, Poland
- 2014 'Altruism, infidelity and telomeres' Diversity in Telomere Dynamics Workshop, Drymen, Scotland
- 2013 'Adaptation and differentiation in island pipit populations' Aarhus University, Denmark
- 2013 'Museum DNA and the conservation of endangered species' Natural History Museum, London
- 2011 'Gene conversion, natural selection and MHC diversity in Berthelot's pipit' Island Ecology and Evolution Research Group, Tenerife, Spain

### Reviewing

- Peer review college member, British Ecological Society (2015-present)
- Grant reviewer for BBSRC, Ontario Research Fund, Royal Society of New Zealand, Czech Science Foundation
- Top reviewer' for *Molecular Ecology*
- Reviewer of ca 20 articles per year, including the following journals: *Nature Communications*, *Proceedings of the Royal Society B*, *Evolution*, *Molecular Ecology*, *Molecular Biology and Evolution*, *Heredity*, *Journal of Evolutionary Biology*, *Biology Letters*, *BMC Evolutionary Biology*, *Journal of Biogeography*,

PLoS One, Evolutionary Applications, Behavioural Ecology and Sociobiology, Biological Conservation, Ecology and Evolution, Conservation Genetics, Immunogenetics, Journal of Avian Biology

## PhD supervision

- 2016-2019: Lewis, R. Population demography and thermal adaptation in a model pest insect (PhD, University of East Anglia, primary supervisor)
- 2014-2018: Armstrong, C. Evolving with pathogens: how pathogens drive genetic diversity over space and time in an island bird (PhD, University of East Anglia, secondary supervisor)
- 2013-2017: Bebbington, K. Telomere dynamics in the Seychelles warbler (PhD, University of East Anglia, secondary supervisor)
- 2010-2014: Gonzales-Quevedo, C. The scale of pathogen-mediated selection: a case study on Berthelot's pipit on Tenerife (PhD, University of East Anglia, secondary supervisor)
- 2010-2014: Wright, D.J. Evolutionary and conservation genetics in the Seychelles warbler - MHC diversity (PhD, University of East Anglia, supervisory team member)

## Teaching

- 2016-2018: MA in Higher Education Practise, University of East Anglia.
- 2017-: Invited instructor 'Introductory population genomics' – Physalia Courses, Berlin
- 2016-: Data Carpentry and Software Carpentry instructor
- 2008-: Lectures, seminars, lab sessions given in following modules: Field Ecology, Behavioural Ecology, Evolutionary Biology, Biodiversity, Conservation Genetics, Host-Pathogen Coevolution, Population and Community Ecology, Environmental Biology

## Professional membership

British Ecological Society, European Society for Evolutionary Biology, Genetics Society, Society for Molecular Biology and Evolution

## Popular science articles

- Spurgin, L.G. (2013) The role of chance in evolution. Aeon Magazine (online only – [link here](#))
- Spurgin, L.G. (2013) Science and the English Language – lessons from George Orwell. London School of Economics Impact of Social Sciences Blog (online only – [link here](#))