

# Dr. Josh A. Firth

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## **Professional Preparation**

Research / Data Science	RB, Reckitt Benckiser	Jan 2021 Onwards
BBSRC Discovery Fellowship	University of Oxford	Mar 2019 – Dec 2024
Junior Research Fellowship	Merton College, Oxford	Oct 2017 – Oct 2020
EGI Research Fellowship	University of Oxford	May 2016 – Oct 2017
D.Phil. Zoology	University of Oxford	Oct 2012 – June 2016
B.Sc. Biology (1 <sup>st</sup> Class)	University of Sheffield	Sept 2009 – June 2012

## **Awards and Grants**

Oct 2020-24	Fully Funded EGI Studentship (Co-Supervisor)	£67,140
Jul 2020	Royal Society Hooke Scientific Meeting (PI)	Full Costs
Jul 2020	Merton College Addition Research Funds Award (PI – 1yr)	£1922
Nov 2019-20	OXBER Seed Grant (Co-I)	£16,643
Oct 2019-23	Fully Funded EGI Studentship (Co-Supervisor)	£67,140
Apr 2019-22	NERC Standard Grant (Co-I)	£804,076
Mar 2019-22	BBSRC Discovery Fellowship Award (PI - 3yr)	£374,663
Jan 2018-20	Merton College Addition Research Funds (PI - 3yr)	£9000
April 2018	ISBE Travel Award	£800
Oct 2017	Merton College Junior Research Fellowship (PI 3yr)	£123,687
Sept 2017	Publons Top #2 Reviewer (2/322) Oxford University	-----
May 2016	EGI Research Fellowship (PI -1.5yr)	£47,025
May 2016	Oxford MPLS Exceptional DPhil Acknowledgment	-----
March 2016	ISBE Travel Award	£375
Oct 2015	DPhil Studentship Extension (6month)	£7026
Oct 2012-15	NERC Studentship (3 years)	£41,463
Dec 2015	Academic Development Fund LMH Award	£300
Feb 2015	Academic Development Fund LMH Award	£300
Feb 2014	Academic Development Fund LMH Award	£300
Oct 2012	LMH MPLS Divisional Award	£2000
June 2012	Highest mark during Undergraduate	£100
June 2011	Highest mark during 2 <sup>nd</sup> Year	£50

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## **Teaching Experience**

2018-Present	Co-supervision of PhD students
2017-Present	Assessment of Undergraduate examination for Department of Zoology
2017-Present	Undergraduate lectures for Department of Zoology, Oxford
2016-Present	Assisting supervision of PhD students
2015-Present	Supervising Undergraduate research projects
2019-Feb	DPhil training workshops; “making research available to children”
2015-16	Supervising Masters research student
2014	Tutorials in Group Living, Collective Behaviour and Social Networks
2014	Assisting teaching Animal Behaviour undergraduate module
2014	Teaching for Oxford Continuing Education Department: Ornithology
2013	Tutorials in Sexual Selection and Animal Behaviour
2013	Assisting teaching Quantitative Methods undergraduate module

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## **Publications**

- [46] Roth A, **Firth JA** et al. Local social environment effects on reproductive output of wild great tits is dependent on individual phenotypes. **Journal of Animal Ecology**; *Submitted*
- [45] **Firth JA** et al. Analysing the Social Spread of Behaviour: Integrating Complex Contagions into Network Based Diffusions. **Science Advances**; *Under Evaluation* (Preprint: arXiv:2012.08925)
- [44] Arlidge WNS, **Firth JA** et al. Assessing information-sharing networks within small-scale fisheries and the implications for conservation interventions. **Communications Biology**; *In Review* (Preprint: 10.21203/rs.3.rs-96096/v1)
- [43] Reichert M, Morrand-Ferron J, Kulahci I, **Firth JA** et al. Cognition and covariance in the producer-scronger game. **Journal of Animal Ecology**; *In Review*
- [42] Firth J, **Firth JA** et al. "Muscles and mood": examining cross-sectional and longitudinal relationships between muscular strength and depression in the UK Biobank. **American Journal of Psychiatric Research**; *In Revision*
- [41] Farine DR, **Firth JA**\* et al. Ecology of woodland songbird social networks: data and insights from large-scale monitoring of individual behaviour. **Journal of Animal Ecology**; *In Revision*
- [40] Raulo A, Allen B, Troitsky T, Husby A, **Firth JA** et al. Social networks strongly predict the gut microbiota of wild mice. **ISME**; *In Revision* (BioRxiv 10.1101/2020.09.24.311357)
- [39] Gamelon M, **Firth JA**, Salguero-Gomez R. Longitudinal demographic data collection - Chapter in 'Demographic Methods across the Tree of Life'. **Oxford University Press**. *In Press*
- [38] Jackson S, Firth J, **Firth JA** et al. Is free bus travel associated with less loneliness and social isolation? A prospective population-based study in England. **BMJ Open**; *Accepted*
- [37] Albery GF, Morris A, Morris S, Pemberton JM, Clutton-Brock TH, Nussey D, **Firth JA**. 2021. Multiple spatial behaviours govern social network positions in a wild ungulate. **Ecology Letters**; DOI: 10.1111.ele.01230
- [36] **Firth JA** et al. 2020. Exploring the Impact of Internet Use on Memory and Attention Processes. **IJERPH**. DOI: 10.3390/ijerph17249481
- [35] Culina A, **Firth JA**, Hinde C. 2020. Familiarity breeds success: pairs that meet earlier experience increased breeding performance in a wild bird population. **Proceedings of the Royal Society B**; DOI: 10.1098/rspb.2020.1554
- [34] Albery GF, Kirkpatrick L, **Firth JA**, Bansal S. 2020. Unifying spatial and social network analysis in disease ecology. **Journal of Animal Ecology**; DOI: 10.1111/1365-2656.13356
- [33] **Firth JA** et al. 2020. Using a real-world network to model localized COVID-19 control strategies. **Nature Medicine**; DOI: 10.1038/s41591-020-1036-8
- [32] Reichert M, Crofts S, Davidson G, **Firth JA** et al. 2020. Individual and social determinants of spatial learning performance in a multi-species field-system. **Royal Society Open Science**; DOI: 10.1098/rsos.192107
- [31] Jarić I, Correia RA, Brook, BW, Buettel JC, Courchamp F, DiMinin E, **Firth JA** et al. 2020. iEcology: harnessing the Big Data revolution to gain insights into the natural world. **Trends in Ecology and Evolution**; DOI: 10.1016/j.tree.2020.03.003
- [30] **Firth JA**. 2020. Considering Complexity: Animal Social Networks and Behavioural Contagions. **Trends in Ecology and Evolution**; DOI: 10.1016/j.tree.2019.10.009

- [29] Firth JA et al. 2020. Handgrip strength is associated with hippocampal volume and white matter hyperintensities in major depression and healthy controls: a U.K. Biobank study. **Psychosomatic Medicine**; DOI: 10.1097/PSY.0000000000000753
- [28] Mindy-Roth A, Firth JA et al. 2019. Partner's age, not social environment, predicts extrapair paternity in wild great tits (*Parus major*). **Behavioural Ecology**; DOI: 10.1093/beheco/arz151
- [27] Bosse M, Spurgin LG, Laine VN, Cole EF, Firth JA et al. 2019. On the importance of time scales when studying adaptive evolution: response to Perrier and Charmantier. **Evolution Letters**; DOI: 10.1002/evl3.112
- [26] Jackson S, Firth JA et al. 2019. Social isolation and physical activity mediate associations between free bus travel and wellbeing among older adults in England. **Journal of Transport and Health**; DOI: 10.1016/j.jth.2019.03.006
- [25] Ioannou C, Rocque F, Herbert-Read J, Duffield C, Firth JA. 2019. Predators attacking virtual prey reveal the costs and benefits of leadership. **PNAS**; DOI: 10.1073/pnas.1816323116
- [24] Firth J, Torous, J, Stubbs, B, Firth JA et al. 2019. The "online brain": how the Internet may be changing our cognition. **World Psychiatry**; DOI: 10.1002/wps.20617
- [23] Someville M, Firth JA et al. 2018. Movement and conformity interact to establish local behavioural traditions in animal populations. **PLoS Computational Biology**; DOI: 10.1371/journal.pcbi.1006647
- [22] Firth JA. et al. 2018. Personality shapes pair bonding in a wild bird social system. **Nature Ecology & Evolution**; DOI: 10.1038/s41559-018-0670-8
- [21] Firth JA. et al. 2018. Spatial, temporal and demographic based differences in wild great tits' nest-site visits and the consequences for reproduction. **Journal of Avian Biology**; DOI: 10.1111/jav.01740
- [20] Firth J, Firth JA et al. 2018. Association Between Muscular Strength and Cognition in People With Major Depression or Bipolar Disorder and Healthy Controls. **JAMA Psychiatry**; DOI: 10.1001/jamapsychiatry.2018.0503
- [19] Firth S, Firth JA\*. 2018. How do birds cope with losing members of their group? **Frontiers in Young Minds**; DOI: 10.3389/frym.2018.00008 \*joint lead author
- [18] Firth J, Stubbs B, Vancampfort D, Firth JA. et al. 2018. Grip Strength Is Associated With Cognitive Performance in Schizophrenia and the General Population: An UK Biobank Study of 476 559 Participants. **Schizophrenia Bulletin**; DOI: 10.1093/schbul/sby034
- [17] Firth JA. et al. 2017. Indirectly connected: simple social differences can explain the causes and apparent consequences of complex social network positions. **Proceedings of the Royal Society B**; DOI: 10.1098/rspb.2017.1939.
- [16] Bosse M, Spurgin LG, Laine VN, Cole EF, Firth JA. et al. 2017. Recent natural selection causes adaptive evolution of an avian polygenic trait. **Science**; DOI: 10.1126/science.aal3298
- [15] Firth J, Stubbs B, Vancampfort D, Schuch FB, Rosenbaum S, Ward PB, Firth JA, et al. 2017. The Validity and Value of Self-reported Physical Activity and Accelerometry in People With Schizophrenia: A Population-Scale Study of the UK Biobank. **Schizophrenia Bulletin**; DOI:10.1093/schbul/sbx149

- [14] Firth JA. et al. 2017. Wild birds respond to flockmate loss by increasing their social network associations to others. *Proceedings of the Royal Society B: Biological Sciences*; 284 (1854): 20170299. DOI: 10.1098/rspb.2017.0299
- [13] Johnson, K. Aplin, LA. Cole, EF. Farine, DR. Firth, JA. Patrick, SC. Sheldon, BC. 2017. Male great tits assort by personality during the breeding season. *Animal Behaviour*, 128: 21-32. DOI: 10.1016/j.anbehav.2017.04.001
- [12] Firth, JA. 2016. Carry-over and consequences of social connections amongst wild birds. University of Oxford. DPhil Thesis.
- [11] Firth, JA. & Sheldon, BC. 2016. Social carry-over effects underpin trans-seasonally linked structure in a wild bird population. *Ecology Letters*; 19 (11): 1324–1332. DOI: 10.1111/ele.12669
- [10] Voelkl, B. Firth, JA. & Sheldon, BC. 2016. The socio-ecology of fear: Nonlethal predator effects on the social composition of wild bird flocks. *Scientific Reports*; 6: 33476. DOI: 10.1038/srep33476
- [9] Firth, JA. et al. 2016. Pathways of information transmission amongst wild songbirds follow experimentally imposed changes to social foraging structure. *Biology Letters*; 12 (6): 20160144. DOI: 10.1098/rsbl.2016.0144
- [8] Crates, RA. Firth, JA\*. et al. 2016. Individual variation in winter supplementary food consumption and its consequences for reproduction in wild birds. *Journal of Avian Biology*; 10.1111/jav.00936. \*joint lead author
- [7] Firth, JA. et al. 2015. Experimental Evidence that Social Relationships Determine Individual Foraging Behavior. *Current Biology*; 25 (23): 3138–43. DOI: 10.1016/j.cub.2015.09.075
- [6] Firth, JA. & Sheldon, BC. 2015. Experimental manipulation of avian social structure reveals segregation is carried over across contexts. *Proceedings of the Royal Society B: Biological Sciences*; 282 (1802): 20142350. DOI: 10.1098/rspb.2014.2350
- [5] Firth, JA. et al. 2015. The influence of nonrandom extra-pair paternity on heritability estimates derived from wild pedigrees. *Evolution*; 69(5): 1336-44. DOI: 10.1111/evo.12649
- [4] Farine, DR. Firth, JA\*. et al. 2015. The role of social and ecological processes in structuring animal populations: a case study from automated tracking of wild birds. *Royal Society Open Science*; 2(4): 150057-150057. DOI: 10.1098/rsos.150057 \*joint lead author
- [3] Aplin, LM. Firth, JA. et al. 2015. Consistent individual differences in the social phenotypes of wild great tits, *Parus major*. *Animal Behaviour*; 108:117-127. DOI: 10.1016/j.anbehav.2015.07.016
- [2] Firth, J. Cotter, J. Torous, J. Bucci, S, Firth, JA. & Yung AR. 2015. Mobile Phone Ownership and Endorsement of “mHealth” Among People With Psychosis: A Meta-analysis of Cross-sectional Studies. *Schizophrenia Bulletin*; DOI: 10.1093/schbul/sbv132
- [1] Psorakis, I. Voelkl, B. Garroway, CJ. Radersma, R. Aplin, LM. Crates, RA. Culina, A. Farine, DR. Firth, JA. et al. 2015 Inferring social structure from temporal data. *Behavioral Ecology and Sociobiology*; 69(5): 857-866 DOI: 10.1007/s00265-015-1906-0

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## **Presentations**

Invited Seminars:

May 2021 Exeter University; *Centre for Ecology & Conservation seminar series*

Nov 2020	Cambridge University; <i>Behaviour, Ecology and Evolution seminar series</i>
Dec 2019	Imperial College London; <i>Ecology &amp; Evolution seminar series</i>
Oct 2019	Oxford University; <i>Edward Grey Institute seminar series</i>
May 2019	Edinburgh University; <i>Institute of Evolutionary Biology Departmental seminar series</i>
Mar 2019	Leeds University; <i>Ecology and Evolution seminar series</i>
Mar 2019	Sheffield University; <i>Ecology, Evolution and Environment seminar series</i>
Oct 2017	Cork University; <i>Biological, Earth and Environmental Sciences seminar series</i>
Apr 2017	Chester University; <i>LivLabs Social Network Analysis invited plenary</i>
Mar 2017	OOS; <i>Oxford Ornithological Society lecture series</i>
Nov 2016	Exeter University; <i>Research in Animal Behaviour seminar series</i>
Nov 2016	Bristol University; <i>Workshops in Ecology and Behaviour seminar series</i>

#### Selected Conference Presentations:

2020	SEARG 2020 Conference	Edinburgh (Online), 16-17 <sup>th</sup> June
2019	BBSRC Biennial Fellows Conference	Glasgow, 18-19 <sup>th</sup> June
2019	Oxford Ageing Symposium – Zoology	Oxford, 5 <sup>th</sup> June
2018	17 <sup>th</sup> International Behavioural Ecology Congress	Minneapolis, 11-16 <sup>th</sup> Aug
2016	16 <sup>th</sup> International Behavioural Ecology Congress	Exeter, 28 <sup>th</sup> Jul-3 <sup>rd</sup> Aug
2015	34 <sup>th</sup> International Ethological Conference	Cairns, 9 <sup>th</sup> –14 <sup>th</sup> Aug
2014	15 <sup>th</sup> International Behavioural Ecology Congress	New York, 31 <sup>st</sup> Jul-5 <sup>th</sup> Aug
2013	Zoology, Oxford University Induction Day PRS	Oxford, 8 <sup>th</sup> October
2013	EGL student conference	Oxford, 10 <sup>th</sup> -11 <sup>th</sup> Jan

#### **Selected Media Involvement and Coverage**

2020	Springer Nature – “The Source: Research in the time of a pandemic; Josh Firth Interview” <a href="https://www.springernature.com/gp/researchers/the-source/blog/blogposts-communicating-research/research-in-the-time-of-a-pandemic--how-a-2018-bbc-documentary/18067816">https://www.springernature.com/gp/researchers/the-source/blog/blogposts-communicating-research/research-in-the-time-of-a-pandemic--how-a-2018-bbc-documentary/18067816</a>
2020	Oxford News “BBC Contagion experiment offers insights into Covid-19 control” <a href="http://www.ox.ac.uk/news/2020-05-26-bbc-contagion-experiment-offers-insights-covid-19-control">http://www.ox.ac.uk/news/2020-05-26-bbc-contagion-experiment-offers-insights-covid-19-control</a>
2019	Phys.org “Social influencers: What can we learn from animals?” <a href="https://phys.org/news/2019-12-social-animals.html">https://phys.org/news/2019-12-social-animals.html</a>
2019	Cosmos Magazine “Socialites are not the primary behavioural influencers” <a href="https://cosmosmagazine.com/society/socialites-not-the-primary-behavioural-influencers">https://cosmosmagazine.com/society/socialites-not-the-primary-behavioural-influencers</a>
2018	Audubon Magazine “The Surprising Connection Between Birds, Facebook, and Other Social Networks” <a href="https://www.audubon.org/magazine/winter-2018/">https://www.audubon.org/magazine/winter-2018/</a>
2018	Nature Asia “Personality is key for love birds” <a href="http://www.natureasia.com/en/research/highlight/12713/">http://www.natureasia.com/en/research/highlight/12713/</a>
2018	Nature Podcast (Interview) ‘Bird Personalities’ <a href="https://www.nature.com/articles/d41586-018-06935-8">https://www.nature.com/articles/d41586-018-06935-8</a>
2018	New York Times: Wired to Be Besties – Vol. April 17, 2018, pD1, NY Times.
2017	National Geographic (Italy): “The Resilience of Great Tits” - <a href="http://nationalgeographic.it/natura/animali/">nationalgeographic.it/natura/animali/</a>
2017	Science Daily: “Good grief! Losing a friend brings wild birds closer together” - <a href="https://www.sciencedaily.com/releases/2017/05/170517101214.htm">https://www.sciencedaily.com/releases/2017/05/170517101214.htm</a>
2016	Scientific American: “The Great Tit chooses love over food” – Vol. 314, Issue 2, p13
2016	BBC Wildlife Magazine: “In the field: Food or love” – Vol. 34, Issue 2, p18.
2015	Science: “Birds would rather go hungry than leave their mate behind” - <a href="http://news.sciencemag.org/plants-animals/2015/11/birds-would-rather-go-hungry-leave-their-mate-behind">news.sciencemag.org/plants-animals/2015/11/birds-would-rather-go-hungry-leave-their-mate-behind</a>

- 2015 The Conversation: "Meet the wild animals who put their partners first"-  
www.theconversation.com/meet-the-wild-animals-who-put-their-partners-first-just-dont-call-it-love-50618
- 2015 Radio Interviews: BBC Radio Oxford (12/11/15), BBC Radio Scotland (13/11/15)
- 2015 Radio Coverage: Radio 4 (13/11/15)
- 2015 Audubon: "Feathered Friends for Life - or Not" -  
www.audubon.org/news/feathered-friends-life-or-not
- 2014 Radio Interview: BBC Radio Oxford (17/12/2014)
- 2013 BBC 1 Countryfile Interview "Tweet Networking" -  
www.bbc.co.uk/programmes/b03kkc73
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### **Professional Activities and Other Activities**

- 2020 Jul-2022 Apr Lead PI/Organiser: Royal Society Hooke Scientific Meeting (London, UK)
- 2020 Apr to present Member: Rapid Assistance in Modelling the Pandemic (Royal Society, UK)
- 2020 May Member: SPI-M Scientific Pandemic Influenza Group on Modelling  
(Department of Health and Social Care, UK Government)
- 2019 June Organiser: OXBER Conservation Behaviour Meeting (Berlin)
- 2019 June Project Leader: Modelling Collective Behaviour Workshop (Brooklyn, NYC)
- 2018 to 2019 Editor at Avian Biology Research
- 2017 to present Governing Body Member (Merton College)
- 2015 to present Guest writer for online resources and blogs including The Conversation,  
Nature 'Behind the Paper' Blog, Academic Life Histories
- 2015 to present Reviewed Grants and Awards totaling >£3.3mil
- 2013 to present Reviewed >70 Manuscripts for top journals inc. Nature, Science, etc
- 2012 to present Outreach activities: Primary School Ornithology Lessons, A Level Bird  
ringing demonstrations, Hill End Centre Nature Activities
- 2017 Interviewing undergraduates for Biological Sciences, University of Oxford
- 2013 UK Bird Ringing C Permit w/ Mist Net Endorsement
- 2012 Home Office Animal Welfare Personal License (Module 1-4)
- 2011 BTO Breeding Bird Volunteer Surveyor

*Active Society Memberships:* Association for the Study of Animal Behaviour, International Society for Behavioural Ecology, International Society for Conservation Biology, Conservation Culturomics Working Group, European Cooperation in Science and Technology (e-COST expert)

*Past Society Memberships:* Evolution, American Society of Naturalists, Comparative Cognition Society