

Dr. Josh A. Firth

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Professional Preparation

Senior Associate; Data Science	RB, Reckitt Benckiser	Mar 2021 – Ongoing
Researcher & Data Scientist	RB, Reckitt Benckiser	Jan 2021 – Mar 2021
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 st Class)	University of Sheffield	Sept 2009 – June 2012

Awards and Grants

Jul 2022-2027 (offer)	NERC IRF (PI – 5yr)	£786,711
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 nd Year	£50

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

Publications

- [56] Beck K & **Firth JA**. Animal Culture: Innovation in the city. **Current Biology**; *In Review*.
- [55] Jarić I, Roll U, Bonaiuto M, Brook B, Courchamp F, **Firth JA** et al. Cultural extinction of species. **Trends in Ecology & Evolution**; *In Review*.
- [54] Gokcekus S, **Firth JA** et al. Drivers of passive leadership in wild songbirds: species-level differences and spatio-temporally dependent intraspecific effects. **Behavioural Ecology**; *In Review*
- [53] McMahon K et al & **Firth JA***. Social network centrality predicts dietary decisions in wild great tits. **Proceedings of the Royal Society B**; *In Review*.
- [52] Finch D, Schofield H, **Firth JA** & Matthews F. Social networks of *Rhinolophus ferrumequinum* during the hibernation season: a landscape-scale case-study. **Animal Behaviour**; *In Review*.
- [51] Roth A, **Firth JA** et al. Local social environment effects on reproductive output of wild great tits is dependent on individual phenotypes. **Behavioural Ecology**; *In Review*.
- [50] Gartland L, **Firth JA** et al & Ioannou C. Sociability as a personality trait in animals: methods, causes and consequences. **Biological Reviews**; *In Review*.
- [49] 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*
- [48] 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*
- [47] **Firth JA** et al. Analysing the Social Spread of Behaviour: Integrating Complex Contagions into Network Based Diffusions. **PLoS Computational Biology**; *In Review* (Preprint: arXiv:2012.08925)
- [46] Albery GF, Clutton-Brock TH, Morris A, Morris S, Pemberton JM, Nussey D, **Firth JA**. 2021. Ageing red deer alter their spatial behaviour and become less social. **Nature Ecology and Evolution**; *In Review* (Preprint: 10.1101/2021.06.11.448092)
- [45] Arlidge WNS, **Firth JA** et al. Assessing information-sharing networks within small-scale fisheries and the implications for conservation interventions. **Proceedings of the Royal Society B**; *In Review* (Preprint: 10.21203/rs.3.rs-96096/v1)
- [44] 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*
- [43] 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*
- [42] **Firth JA** & Sheldon BC. The long reach of family ties. 2021. **Science**; DOI: 10.1126/science.abj5234
- [41] Gokcekus S, **Firth JA** et al. 2021. Recognising the key role of individual recognition in social networks. **Trends in Ecology & Evolution**; DOI: 10.1016/j.tree.2021.06.009
- [40] Gokcekus S, Cole E, Sheldon B & **Firth JA**. 2021. Exploring the causes and consequences of cooperative behaviour in wild animal populations using a social network approach. **Biological Reviews**; DOI: 10.1111/brv.12757

- [39] Reichert M, Morrand-Ferron J, Kulahci I, **Firth JA** 2021. et al. Cognition and covariance in the producer-scrounger game. **Journal of Animal Ecology**; DOI: 10.1111/1365-2656.13551
- [38] Raulo A, Allen B, Troitsky T, Husby A, **Firth JA** et al. 2021. Social networks strongly predict the gut microbiota of wild mice. **ISME**; DOI: 10.1038/s41396-021-00949-3
- [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] Someveille 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

Presentations

Invited Seminars:

May 2021	Exeter University; <i>Centre for Ecology & Conservation seminar series</i>
Nov 2020	Cambridge University; <i>Behaviour, Ecology and Evolution seminar series</i>
Dec 2019	Imperial College London; <i>Ecology & 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 th June
2019	BBSRC Biennial Fellows Conference	Glasgow, 18-19 th June
2019	Oxford Ageing Symposium – Zoology	Oxford, 5 th June
2018	17 th International Behavioural Ecology Congress	Minneapolis, 11-16 th Aug
2016	16 th International Behavioural Ecology Congress	Exeter, 28 th Jul-3 rd Aug
2015	34 th International Ethological Conference	Cairns, 9 th –14 th Aug
2014	15 th International Behavioural Ecology Congress	New York, 31 st Jul-5 th Aug

2013	Zoology, Oxford University Induction Day PRS	Oxford, 8 th October
2013	EGI student conference	Oxford, 10 th -11 th Jan

Selected Media Involvement and Coverage

2021	Science Magazine - Mom's powerful friends keep high-ranking hyenas on top. https://www.sciencemag.org/news/2021/07/mom-s-powerful-friends-keep-high-ranking-hyenas-top
2020	Springer Nature – “The Source: Research in the time of a pandemic; Josh Firth Interview” 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
2020	Oxford News “BBC Contagion experiment offers insights into Covid-19 control” http://www.ox.ac.uk/news/2020-05-26-bbc-contagion-experiment-offers-insights-covid-19-control
2019	Phys.org “Social influencers: What can we learn from animals?” https://phys.org/news/2019-12-social-animals.html
2019	Cosmos Magazine “Socialites are not the primary behavioural influencers” https://cosmosmagazine.com/society/socialites-not-the-primary-behavioural-influencers
2018	Audubon Magazine “The Surprising Connection Between Birds, Facebook, and Other Social Networks” https://www.audubon.org/magazine/winter-2018/
2018	Nature Asia “Personality is key for love birds” http://www.natureasia.com/en/research/highlight/12713/
2018	Nature Podcast (Interview) ‘Bird Personalities’ https://www.nature.com/articles/d41586-018-06935-8
2018	New York Times: Wired to Be Besties – Vol. April 17, 2018, pD1, NY Times.
2017	National Geographic (Italy): “The Resilience of Great Tits” - nationalgeographic.it/natura/animali/
2017	Science Daily: “Good grief! Losing a friend brings wild birds closer together” - https://www.sciencedaily.com/releases/2017/05/170517101214.htm
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” - news.sciencemag.org/plants-animals/2015/11/birds-would-rather-go-hungry-leave-their-mate-behind
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

Professional Activities and Other Activities

2022 Apr-2023 Apr	Editor (Guest) - Philosophical Transactions of the Royal Society B Ageing & Sociality - Special Issue
2021 Aug	Co-organiser – ESA 2021 - Integrating spatial and social behaviour across ecological systems. Long Beach, CA, USA.
2020 Oct-2021 Feb	Editor (Guest) - eLife Journal - Ecology
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, British Trust for Ornithology, 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.