

# Nigel R Franks

## List of Publications by Year in descending order

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Version: 2024-02-01

145  
papers

12,830  
citations

44069

48  
h-index

30922

102  
g-index

153  
all docs

153  
docs citations

153  
times ranked

6503  
citing authors

#	ARTICLE	IF	CITATIONS
1	Effective leadership and decision-making in animal groups on the move. <i>Nature</i> , 2005, 433, 513-516.	27.8	2,214
2	Collective Memory and Spatial Sorting in Animal Groups. <i>Journal of Theoretical Biology</i> , 2002, 218, 1-11.	1.7	1,698
3	Quorum sensing, recruitment, and collective decision-making during colony emigration by the ant <i>Leptothorax albipennis</i> . <i>Behavioral Ecology and Sociobiology</i> , 2002, 52, 117-127.	1.4	381
4	Teaching in tandem-running ants. <i>Nature</i> , 2006, 439, 153-153.	27.8	337
5	Information flow, opinion polling and collective intelligence in house-hunting social insects. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2002, 357, 1567-1583.	4.0	281
6	Stop Signals Provide Cross Inhibition in Collective Decision-Making by Honeybee Swarms. <i>Science</i> , 2012, 335, 108-111.	12.6	270
7	Speed versus accuracy in collective decision making. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2003, 270, 2457-2463.	2.6	267
8	On optimal decision-making in brains and social insect colonies. <i>Journal of the Royal Society Interface</i> , 2009, 6, 1065-1074.	3.4	202
9	Strategies for choosing between alternatives with different attributes: exemplified by house-hunting ants. <i>Animal Behaviour</i> , 2003, 65, 215-223.	1.9	176
10	Patterns of Nested Dispersion in a Tropical Ground Ant Community. <i>Ecology</i> , 1982, 63, 338-344.	3.2	150
11	Self-organizing nest construction in ants: individual worker behaviour and the nest's dynamics. <i>Animal Behaviour</i> , 1997, 54, 779-796.	1.9	137
12	Doing the right thing: Ants, honeybees and naked mole-rats. <i>Trends in Ecology and Evolution</i> , 1992, 7, 346-349.	8.7	135
13	Alternative adaptations, sympatric speciation and the evolution of parasitic, inquiline ants. <i>Biological Journal of the Linnean Society</i> , 1991, 43, 157-178.	1.6	129
14	An agent-based model of collective nest choice by the ant <i>Temnothorax albipennis</i> . <i>Animal Behaviour</i> , 2005, 70, 1023-1036.	1.9	126
15	Foraging for work: how tasks allocate workers. <i>Animal Behaviour</i> , 1994, 48, 470-472.	1.9	120
16	Dominance and reproductive success among slave-making worker ants. <i>Nature</i> , 1983, 304, 724-725.	27.8	119
17	Teaching with Evaluation in Ants. <i>Current Biology</i> , 2007, 17, 1520-1526.	3.9	118
18	Teams in social insects: group retrieval of prey by army ants ( <i>Eciton burchelli</i> , Hymenoptera: Tj ETQq0 0 0 rgBT /Overclock 10 Tf 50 62 T	1.4	112

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19	Spatial patterns in army ant foraging and migration: <i>Eciton burchelli</i> on Barro Colorado Island, Panama. <i>Behavioral Ecology and Sociobiology</i> , 1983, 12, 261-270.	1.4	108
20	Chimpanzees and the mathematics of battle. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2002, 269, 1107-1112.	2.6	103
21	A Mechanism for Value-Sensitive Decision-Making. <i>PLoS ONE</i> , 2013, 8, e73216.	2.5	102
22	How is activity distributed among and within tasks in <i>Temnothorax</i> ants?. <i>Behavioral Ecology and Sociobiology</i> , 2012, 66, 1407-1420.	1.4	101
23	Flexible task allocation and the organization of work in ants. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2009, 276, 4373-4380.	2.6	100
24	Why do not all workers work? Colony size and workload during emigrations in the ant <i>Temnothorax albipennis</i> . <i>Behavioral Ecology and Sociobiology</i> , 2008, 63, 43-51.	1.4	98
25	Radio tagging reveals the roles of corpulence, experience and social information in ant decision making. <i>Behavioral Ecology and Sociobiology</i> , 2009, 63, 627-636.	1.4	98
26	The Behavioural Ecology of Ants. , 1987, , .		93
27	Ants estimate area using Buffon's needle. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2000, 267, 765-770.	2.6	93
28	Behavior and chemical disguise of cuckoo ant <i>Leptothorax kutteri</i> in relation to its host <i>Leptothorax acervorum</i> . <i>Journal of Chemical Ecology</i> , 1990, 16, 1431-1444.	1.8	88
29	Task allocation in ant colonies within variable environments (A study of temporal polyethism:) Tj ETQq1 1 0.784314 1.9 BT /Overlock 10 T	1.9	87
30	Ecology and the evolution of worker morphological diversity: a comparative analysis with <i>Eciton</i> army ants. <i>Functional Ecology</i> , 2006, 20, 1105-1114.	3.6	86
31	Decision making by small and large house-hunting ant colonies: one size fits all. <i>Animal Behaviour</i> , 2006, 72, 611-616.	1.9	85
32	The hidden cost of information in collective foraging. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2005, 272, 1689-1695.	2.6	84
33	Lanchester battles and the evolution of combat in ants. <i>Animal Behaviour</i> , 1993, 45, 197-199.	1.9	82
34	The Use of Edges in Visual Navigation by the Ant <i>Leptothorax albipennis</i> . <i>Ethology</i> , 2001, 107, 1125-1136.	1.1	80
35	Improvement in collective performance with experience in ants. <i>Behavioral Ecology and Sociobiology</i> , 2004, 56, 523-529.	1.4	74
36	Emergency networking: famine relief in ant colonies. <i>Animal Behaviour</i> , 2010, 79, 473-485.	1.9	72

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37	Do ants make direct comparisons?. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2009, 276, 2635-2641.	2.6	71
38	Larger colonies do not have more specialized workers in the ant <i>Temnothorax albipennis</i> . <i>Behavioral Ecology</i> , 2009, 20, 922-929.	2.2	68
39	Knowledgeable individuals lead collective decisions in ants. <i>Journal of Experimental Biology</i> , 2011, 214, 3046-3054.	1.7	67
40	Speed versus accuracy in decision-making ants: expediting politics and policy implementation. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2009, 364, 845-852.	4.0	66
41	A Simple Threshold Rule Is Sufficient to Explain Sophisticated Collective Decision-Making. <i>PLoS ONE</i> , 2011, 6, e19981.	2.5	63
42	Noise, cost and speed-accuracy trade-offs: decision-making in a decentralized system. <i>Journal of the Royal Society Interface</i> , 2006, 3, 243-254.	3.4	62
43	Sexual competition during colony reproduction in army ants. <i>Biological Journal of the Linnean Society</i> , 1987, 30, 229-243.	1.6	60
44	How experienced individuals contribute to an improvement in collective performance in ants. <i>Behavioral Ecology and Sociobiology</i> , 2008, 62, 447-456.	1.4	60
45	Social insects: from selfish genes to self organisation and beyond. <i>Trends in Ecology and Evolution</i> , 2006, 21, 303-308.	8.7	58
46	Propaganda substances in the cuckoo ant <i>Leptothorax kutteri</i> and the slave-maker <i>Harpagoxenus sublaevis</i> . <i>Journal of Chemical Ecology</i> , 1986, 12, 1285-1293.	1.8	55
47	Reconnaissance and latent learning in ants. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2007, 274, 1505-1509.	2.6	55
48	Not everything that counts can be counted: ants use multiple metrics for a single nest trait. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2006, 273, 165-169.	2.6	54
49	Thermoregulation in army ant bivouacs. <i>Physiological Entomology</i> , 1989, 14, 397-404.	1.5	53
50	Self-assembly, self-organization and division of labour. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 1999, 354, 1395-1405.	4.0	52
51	Caste evolution and ecology: a special worker for novel prey. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2005, 272, 2173-2180.	2.6	52
52	Experience, corpulence and decision making in ant foraging. <i>Journal of Experimental Biology</i> , 2012, 215, 2653-2659.	1.7	52
53	Division of labour within teams of New World and Old World army ants. <i>Animal Behaviour</i> , 2001, 62, 635-642.	1.9	50
54	The complexity and hierarchical structure of tasks in insect societies. <i>Animal Behaviour</i> , 2001, 62, 643-651.	1.9	50

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55	Improving Decision Speed, Accuracy and Group Cohesion through Early Information Gathering in House-Hunting Ants. PLoS ONE, 2010, 5, e13059.	2.5	47
56	Ants show a leftward turning bias when exploring unknown nest sites. Biology Letters, 2014, 10, 20140945.	2.3	46
57	Can ant colonies choose a far-and-away better nest over an in-the-way poor one?. Animal Behaviour, 2008, 76, 323-334.	1.9	44
58	Recruitment Strategies and Colony Size in Ants. PLoS ONE, 2010, 5, e11664.	2.5	43
59	Exceptionally high levels of multiple mating in an army ant. Die Naturwissenschaften, 2004, 91, 396-9.	1.6	42
60	Evolution of allometries in the worker caste of Dorylus army ants. Oikos, 2005, 110, 231-240.	2.7	42
61	Division of labour in a crisis: task allocation during colony emigration in the ant <i>Leptothorax unifasciatus</i> (Latr.). Behavioral Ecology and Sociobiology, 1995, 36, 269-282.	1.4	41
62	Tomb evaders: house-hunting hygiene in ants. Biology Letters, 2005, 1, 190-192.	2.3	41
63	How collective comparisons emerge without individual comparisons of the options. Proceedings of the Royal Society B: Biological Sciences, 2014, 281, 20140737.	2.6	40
64	Simple learning rules to cope with changing environments. Journal of the Royal Society Interface, 2008, 5, 1193-1202.	3.4	39
65	Ant search strategies after interrupted tandem runs. Journal of Experimental Biology, 2010, 213, 1697-1708.	1.7	39
66	The organization of working teams' in social insects. Trends in Ecology and Evolution, 1987, 2, 72-75.	8.7	38
67	Temporal and spatial patterns in the emigrations of the army ant <i>Dorylus (Anomma) molestus</i> in the montane forest of Mt Kenya. Ecological Entomology, 2005, 30, 532-540.	2.2	38
68	Testing the limits of social resilience in ant colonies. Behavioral Ecology and Sociobiology, 2000, 48, 125-131.	1.4	37
69	Brood sorting by ants: two phases and differential diffusion. Animal Behaviour, 2004, 68, 1095-1106.	1.9	36
70	Colony-level cognition. Current Biology, 2009, 19, R395-R396.	3.9	35
71	Speed-cohesion trade-offs in collective decision making in ants and the concept of precision in animal behaviour. Animal Behaviour, 2013, 85, 1233-1244.	1.9	35
72	Conflicts, social economics and life history strategies in ants. Behavioral Ecology and Sociobiology, 1990, 27, 175.	1.4	33

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73	A new method for censusing animal populations: The number of <i>Eciton burchelli</i> army ant colonies on Barro Colorado Island, Panama. <i>Oecologia</i> , 1982, 52, 266-268.	2.0	32
74	The foraging ecology of the army ant <i>Eciton rapax</i> : an ergonomic enigma?. <i>Ecological Entomology</i> , 1985, 10, 131-141.	2.2	31
75	A reassessment of the mating system characteristics of the army ant <i>Eciton burchellii</i> . <i>Die Naturwissenschaften</i> , 2006, 93, 402-406.	1.6	31
76	The Adaptiveness of Defence Strategies Against Cuckoo Parasitism. <i>Bulletin of Mathematical Biology</i> , 2002, 64, 1045-1068.	1.9	30
77	Evolutionary and ecological parallels between ants and fungi. <i>Trends in Ecology and Evolution</i> , 1987, 2, 127-133.	8.7	28
78	Blinkered teaching: tandem running by visually impaired ants. <i>Behavioral Ecology and Sociobiology</i> , 2011, 65, 569-579.	1.4	28
79	Digging the optimum pit: antlions, spirals and spontaneous stratification. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2019, 286, 20190365.	2.6	28
80	Symbionts of societies that fission: mites as guests or parasites of army ants. <i>Ecological Entomology</i> , 2009, 34, 684-695.	2.2	27
81	How a few help all: living pothole plugs speed prey delivery in the army ant <i>Eciton burchellii</i> . <i>Animal Behaviour</i> , 2007, 73, 1067-1076.	1.9	26
82	Individual and social learning in tandem-running recruitment by ants. <i>Animal Behaviour</i> , 2012, 84, 361-368.	1.9	26
83	Ants determine their next move at rest: motor planning and causality in complex systems. <i>Royal Society Open Science</i> , 2016, 3, 150534.	2.4	26
84	Variability in individual assessment behaviour and its implications for collective decision-making. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2017, 284, 20162237.	2.6	26
85	Queen transport during ant colony emigration: a group-level adaptive behavior. <i>Behavioral Ecology</i> , 2000, 11, 315-318.	2.2	25
86	Morphogenesis of an extended phenotype: four-dimensional ant nest architecture. <i>Journal of the Royal Society Interface</i> , 2012, 9, 586-595.	3.4	25
87	Do ants need to be old and experienced to teach?. <i>Journal of Experimental Biology</i> , 2012, 215, 1287-1292.	1.7	25
88	Landmarks and ant search strategies after interrupted tandem runs. <i>Journal of Experimental Biology</i> , 2014, 217, 944-54.	1.7	25
89	Social behaviour and collective motion in plant-animal worms. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2016, 283, 20152946.	2.6	25
90	How ants use quorum sensing to estimate the average quality of a fluctuating resource. <i>Scientific Reports</i> , 2015, 5, 11890.	3.3	24

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91	Moving targets: collective decisions and flexible choices in house-hunting ants. <i>Swarm Intelligence</i> , 2007, 1, 81-94.	2.2	20
92	The influence of the few: a stable "oligarchy" controls information flow in house-hunting ants. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2018, 285, 20172726.	2.6	19
93	The selection of building material for wall construction by ants. <i>Animal Behaviour</i> , 2007, 73, 779-788.	1.9	18
94	Measuring site fidelity and spatial segregation within animal societies. <i>Methods in Ecology and Evolution</i> , 2017, 8, 965-975.	5.2	18
95	Information Certainty Determines Social and Private Information Use in Ants. <i>Scientific Reports</i> , 2017, 7, .	3.3	18
96	Weighting waiting in collective decision-making. <i>Behavioral Ecology and Sociobiology</i> , 2006, 61, 347-356.	1.4	17
97	Individual choice of building material for nest construction by worker ants and the collective outcome for their colony. <i>Animal Behaviour</i> , 2007, 74, 559-566.	1.9	17
98	Effects of <i>Lecanicillium longisporum</i> infection on the behaviour of the green peach aphid <i>Myzus persicae</i> . <i>Journal of Insect Physiology</i> , 2008, 54, 128-136.	2.0	17
99	Computational model of collective nest selection by ants with heterogeneous acceptance thresholds. <i>Royal Society Open Science</i> , 2015, 2, 140533.	2.4	17
100	Asymmetric ommatidia count and behavioural lateralization in the ant <i>Temnothorax albipennis</i> . <i>Scientific Reports</i> , 2018, 8, 5825.	3.3	17
101	Synchronization of the behaviour within nests of the ant <i>Temnothorax acervorum</i> (Fabricius). Discovering the phenomenon and its relation to the level of starvation. <i>Bulletin of Mathematical Biology</i> , 1990, 52, 597-612.	1.9	16
102	Record Dynamics in Ants. <i>PLoS ONE</i> , 2010, 5, e9621.	2.5	16
103	Teamwork in Animals, Robots, and Humans. <i>Advances in the Study of Behavior</i> , 2003, 33, 1-48.	1.6	15
104	Trail laying during tandem-running recruitment in the ant <i>Temnothorax albipennis</i> . <i>Die Naturwissenschaften</i> , 2014, 101, 549-556.	1.6	15
105	Optimal foraging and the information theory of gambling. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20190162.	3.4	14
106	Eight highly polymorphic microsatellite markers for the army ant <i>Eciton burchellii</i> . <i>Molecular Ecology Notes</i> , 2004, 4, 234-236.	1.7	13
107	Economic investment by ant colonies in searches for better homes. <i>Biology Letters</i> , 2013, 9, 20130685.	2.3	13
108	Models of information flow in ant foraging: the benefits of both attractive and repulsive signals. , 1999, , 83-100.		12

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109	Centrifugal waste disposal and the optimization of ant nest craters. <i>Animal Behaviour</i> , 2004, 67, 965-973.	1.9	12
110	Universality in ant behaviour. <i>Journal of the Royal Society Interface</i> , 2015, 12, 20140985.	3.4	12
111	Post-contact immobility and half-lives that save lives. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2020, 287, 20200881.	2.6	12
112	The Dynamics of Specialization and Generalization within Biological Populations. <i>International Journal of Modeling, Simulation, and Scientific Computing</i> , 1998, 01, 115-127.	1.4	11
113	Nest "moulting" in the ant <i>Temnothorax albipennis</i> . <i>Animal Behaviour</i> , 2007, 74, 567-575.	1.9	11
114	The behaviour of ant transporters at the old and new nests during successive colony emigrations. <i>Behavioral Ecology and Sociobiology</i> , 2008, 62, 1851-1861.	1.4	11
115	The Bayesian superorganism: externalized memories facilitate distributed sampling. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20190848.	3.4	11
116	The possible role of reaction-diffusion in leaf shape. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2000, 267, 1295-1300.	2.6	10
117	Ants incommunicado: collective decision-making over new nest sites by ants with reduced communication. <i>Behavioral Ecology and Sociobiology</i> , 2016, 70, 145-155.	1.4	10
118	The effect of social information on the collective choices of ant colonies. <i>Behavioral Ecology</i> , 2016, 27, 1033-1040.	2.2	10
119	The role of competition in task switching during colony emigration in the ant <i>Leptothorax albipennis</i> . <i>Animal Behaviour</i> , 2002, 63, 715-725.	1.9	9
120	Differentiated Anti-Predation Responses in a Superorganism. <i>PLoS ONE</i> , 2015, 10, e0141012.	2.5	8
121	Migration control: a distance compensation strategy in ants. <i>Die Naturwissenschaften</i> , 2016, 103, 66.	1.6	8
122	Complementary landmarks facilitate ant navigation. <i>Behavioural Processes</i> , 2018, 157, 702-710.	1.1	8
123	Arms races and the evolution of big fierce societies. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2001, 268, 1723-1730.	2.6	7
124	Simulating the Evolution of Ant Behaviour in Evaluating Nest Sites. <i>Lecture Notes in Computer Science</i> , 2003, , 643-650.	1.3	7
125	Nest-seeking rock ants ( <i>Temnothorax albipennis</i> ) trade off sediment packing density and structural integrity for ease of cavity excavation. <i>Behavioral Ecology and Sociobiology</i> , 2013, 67, 1745-1756.	1.4	7
126	Commitment time depends on both current and target nest value in <i>Temnothorax albipennis</i> ant colonies. <i>Behavioral Ecology and Sociobiology</i> , 2015, 69, 1183-1190.	1.4	7



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127	Information flow in the social domain: how individuals decide what to do next. , 1999, , 101-112.		7
128	First Record of the Army Ant <i>Cheliomyrmex morosus</i> in Panama and its High Associate Diversity. <i>Biotropica</i> , 2007, 39, 771-773.	1.6	6
129	Individual and collective choice: parallel prospecting and mining in ants. <i>Die Naturwissenschaften</i> , 2008, 95, 301-305.	1.6	6
130	Plant-“animal worms round themselves up in circular mills on the beach. <i>Royal Society Open Science</i> , 2018, 5, 180665.	2.4	6
131	The fluid dynamics of collective vortex structures of plant-animal worms. <i>Journal of Fluid Mechanics</i> , 2021, 914, .	3.4	6
132	Social Insects in the Aftermath of Swarm Raids of the Army Ant <i>Eciton burchelli</i> . , 2019, , 275-279.		6
133	Division of labour in a crisis: task allocation during colony emigration in the ant <i>Leptothorax unifasciatus</i> (Latr.). <i>Behavioral Ecology and Sociobiology</i> , 1995, 36, 269-282.	1.4	6
134	A social mechanism facilitates ant colony emigrations over different distances. <i>Journal of Experimental Biology</i> , 2016, 219, 3439-3446.	1.7	5
135	Hide-and-seek strategies and post-contact immobility. <i>Biology Letters</i> , 2021, 17, 20200892.	2.3	5
136	<i>Ants.</i> , 2009, , 24-27.		4
137	Individual and social information gathering are fine-tuned to the internal state of the group. <i>Animal Behaviour</i> , 2013, 85, 1479-1484.	1.9	4
138	The parasitic strategies of a cuckoo bee. <i>Trends in Ecology and Evolution</i> , 1987, 2, 324-326.	8.7	3
139	How might individual honeybees measure massive volumes?. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2003, 270, S181-2.	2.6	3
140	Social flocculation in plant-“animal worms. <i>Royal Society Open Science</i> , 2019, 6, 181626.	2.4	3
141	Exploration adjustment by ant colonies. <i>Royal Society Open Science</i> , 2016, 3, 150533.	2.4	2
142	The Bayesian Superorganism: Collective Probability Estimation in Swarm Systems. , 2020, , .		2
143	The Interplay Between Scent Trails and Group-Mass Recruitment Systems in Ants. <i>Bulletin of Mathematical Biology</i> , 2013, 75, 1912-1940.	1.9	1
144	Learning and Decision Making in a Social Context. <i>Handbook of Behavioral Neuroscience</i> , 2013, , 530-545.	0.7	1

#	ARTICLE	IF	CITATIONS
145	On optimal decision making in brains and social insect colonies. , 0, , 500-522.		0