Chris T Bauch

List of Publications by Citations

157 papers	5,131 citations	33 h-index	69 g-index
180 ext. papers	6,286 ext. citations	6 avg, IF	6.36 L-index

#	Paper	IF	Citations
157	Statistical physics of vaccination. *Physics Reports*, **2016**, 664, 1-113	27.7	579
156	Vaccination and the theory of games. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 13391-4	11.5	429
155	Coupled disease-behavior dynamics on complex networks: A review. *Physics of Life Reviews*, **2015**, 15, 1-29	2.1	285
154	Group interest versus self-interest in smallpox vaccination policy. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 10564-7	11.5	265
153	Imitation dynamics predict vaccinating behaviour. *Proceedings of the Royal Society B: Biological Sciences*, **2005**, 272, 1669-75	4.4	234
152	Dynamically modeling SARS and other newly emerging respiratory illnesses: past, present, and future. *Epidemiology*, **2005**, 16, 791-801	3.1	169
151	Evolving public perceptions and stability in vaccine uptake. *Mathematical Biosciences*, **2006**, 204, 185-98	3.9	148
150	Epidemiology. Social factors in epidemiology. *Science*, **2013**, 342, 47-9	33.3	135
149	The impact of media coverage on the transmission dynamics of human influenza. *BMC Public Health* , **2011**, 11 Suppl 1, S5	4.1	125
148	Nine challenges in incorporating the dynamics of behaviour in infectious diseases models. *Epidemics*, **2015**, 10, 21-5	5.1	117
147	Social contact networks and disease eradicability under voluntary vaccination. *PLoS Computational Biology*, **2009**, 5, e1000280	5	108
146	Evolutionary game theory and social learning can determine how vaccine scares unfold. *PLoS Computational Biology*, **2012**, 8, e1002452	5	107
145	Transients and attractors in epidemics. *Proceedings of the Royal Society B: Biological Sciences*, **2003**, 270, 1573-8	4.4	105
144	Stray dog population demographics in Jodhpur, India following a population control/rabies vaccination program. *Preventive Veterinary Medicine*, **2010**, 97, 51-7	3.1	98
143	Modelling mitigation strategies for pandemic (H1N1) 2009. *Cmaj*, **2009**, 181, 673-80	3.5	86
142	Early warning signals of regime shifts in coupled human-environment systems. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 14560-14567	11.5	82
141	The impact of imitation on vaccination behavior in social contact networks. *PLoS Computational Biology*, **2012**, 8, e1002469	5	77

140	The influence of social norms on the dynamics of vaccinating behaviour for paediatric infectious diseases. *Proceedings of the Royal Society B: Biological Sciences*, **2014**, 281, 20133172	4.4	71
139	Modelling science trustworthiness under publish or perish pressure. *Royal Society Open Science*, **2018**, 5, 171511	3.3	67
138	Prioritising COVID-19 vaccination in changing social and epidemiological landscapes: a mathematical modelling study. *Lancet Infectious Diseases, The*, **2021**, 21, 1097-1106	25.5	65
137	Economic appraisal of Ontario's Universal Influenza Immunization Program: a cost-utility analysis. *PLoS Medicine*, **2010**, 7, e1000256	11.6	60
136	Local lockdowns outperform global lockdown on the far side of the COVID-19 epidemic curve. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 24575-24580	11.5	60
135	Erratic flu vaccination emerges from short-sighted behavior in contact networks. *PLoS Computational Biology*, **2011**, 7, e1001062	5	57
134	Global eradication of measles: an epidemiologic and economic evaluation. *Journal of Infectious Diseases*, **2011**, 204 Suppl 1, S98-106	7	56
133	The spread of infectious diseases in spatially structured populations: an invasory pair approximation. *Mathematical Biosciences*, **2005**, 198, 217-37	3.9	56
132	Dynamics of an Infectious Disease Where Media Coverage Influences Transmission **2012**, 2012, 1-10		51
131	Assessing the pandemic potential of MERS-CoV. *Lancet, The*, **2013**, 382, 662-4	40	50
130	Human-environment interactions in population and ecosystem health. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 14502-14506	11.5	48
129	"Wait and see" vaccinating behaviour during a pandemic: a game theoretic analysis. *Vaccine*, **2011**, 29, 5519-25	4.1	41
128	The impact of human-environment interactions on the stability of forest-grassland mosaic ecosystems. *Scientific Reports*, **2013**, 3, 2689	4.9	40
127	A simulation analysis to characterize the dynamics of vaccinating behaviour on contact networks. *BMC Infectious Diseases*, **2009**, 9, 77	4	38
126	National- and state-level impact and cost-effectiveness of nonavalent HPV vaccination in the United States. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 5107-12	11.5	38
125	Critical dynamics in population vaccinating behavior. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 13762-13767	11.5	36
124	A versatile ODE approximation to a network model for the spread of sexually transmitted diseases. *Journal of Mathematical Biology*, **2002**, 45, 375-95	2	33
123	A game dynamic model for delayer strategies in vaccinating behaviour for pediatric infectious diseases. *Journal of Theoretical Biology*, **2010**, 267, 276-82	2.3	32

122	Symmetric competition causes population oscillations in an individual-based model of forest dynamics. *Ecological Modelling*, **2008**, 211, 491-500	3	32
121	Modelling Interactions between forest pest invasions and human decisions regarding firewood transport restrictions. *PLoS ONE*, **2014**, 9, e90511	3.7	32
120	Alternative stable states and the sustainability of forests, grasslands, and agriculture. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 14552-14559	11.5	32
119	Dynamics of the Global Wheat Trade Network and Resilience to Shocks. *Scientific Reports*, **2017**, 7, 7177	4.9	30
118	Dynamics of vaccination strategies via projected dynamical systems. *Bulletin of Mathematical Biology*, **2007**, 69, 1453-76	2.1	30
117	Charting pathways to climate change mitigation in a coupled socio-climate model. *PLoS Computational Biology*, **2019**, 15, e1007000	5	28
116	Outlook on a worldwide forest transition. *PLoS ONE*, **2013**, 8, e75890	3.7	28
115	Interactions between climate change, competition, dispersal, and disturbances in a tree migration model. *Theoretical Ecology*, **2008**, 1, 209-220	1.6	27
114	Revising ecological assumptions about Human papillomavirus interactions and type replacement. *Journal of Theoretical Biology*, **2014**, 350, 98-109	2.3	25
113	Policy resistance undermines superspreader vaccination strategies for influenza. *PLoS Computational Biology*, **2013**, 9, e1002945	5	25
112	Conditions for a Second Wave of COVID-19 Due to Interactions Between Disease Dynamics and Social Processes. *Frontiers in Physics*, **2020**, 8,	3.9	25
111	Could the human papillomavirus vaccines drive virulence evolution?. *Proceedings of the Royal Society B: Biological Sciences*, **2015**, 282, 20141069	4.4	24
110	Incorporating herd immunity effects into cohort models of vaccine cost-effectiveness. *Medical Decision Making*, **2009**, 29, 557-69	2.5	24
109	Modelling microbial infection to address global health challenges. *Nature Microbiology*, **2019**, 4, 1612-1618	10.6	23
108	The impact of personal experiences with infection and vaccination on behaviour-incidence dynamics of seasonal influenza. *Epidemics*, **2012**, 4, 139-51	5.1	22
107	Adherence to cervical screening in the era of human papillomavirus vaccination: how low is too low?. *Lancet Infectious Diseases, The*, **2010**, 10, 133-7	25.5	22
106	Rapid emergence of free-riding behavior in new pediatric immunization programs. *PLoS ONE*, **2010**, 5, e12594	3.7	22
105	Disease dynamics and costly punishment can foster socially imposed monogamy. *Nature Communications*, **2016**, 7, 11219	17.4	19

104	Communicating sentiment and outlook reverses inaction against collective risks. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 17650-17655	11.5	19
103	Landowner perceptions of the value of natural forest and natural grassland in a mosaic ecosystem in southern Brazil. *Sustainability Science*, **2016**, 11, 321-330	6.4	17
102	Global land use implications of dietary trends. *PLoS ONE*, **2018**, 13, e0200781	3.7	17
101	Strategic decision making about travel during disease outbreaks: a game theoretical approach. *Journal of the Royal Society Interface*, **2018**, 15,	4.1	17
100	Time for change? An economic evaluation of integrated cervical screening and HPV immunization programs in Canada. *Vaccine*, **2012**, 30, 425-35	4.1	16
99	The effects of endogenous ecological memory on population stability and resilience in a variable environment. *Ecological Modelling*, **2008**, 212, 334-341	3	16
98	The impact of rare but severe vaccine adverse events on behaviour-disease dynamics: a network model. *Scientific Reports*, **2019**, 9, 7164	4.9	15
97	Role of word-of-mouth for programs of voluntary vaccination: A game-theoretic approach. *Mathematical Biosciences*, **2015**, 269, 130-4	3.9	15
96	Carrot or stick? Modelling how landowner behavioural responses can cause incentive-based forest governance to backfire. *PLoS ONE*, **2013**, 8, e77735	3.7	15
95	Prioritising COVID-19 vaccination in changing social and epidemiological landscapes		15
94	Deep learning for early warning signals of tipping points. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	15
93	Evaluation of serogroup C and ACWY meningococcal vaccine programs: projected impact on disease burden according to a stochastic two-strain dynamic model. *Vaccine*, **2015**, 33, 268-75	4.1	13
92	Sexual behavior, risk perception, and HIV transmission can respond to HIV antiviral drugs and vaccines through multiple pathways. *Scientific Reports*, **2015**, 5, 15411	4.9	13
91	Agent-based modelling of clonal plant propagation across space: Recapturing fairy rings, power laws and other phenomena. *Ecological Informatics*, **2011**, 6, 127-135	4.2	13
90	When do sexual partnerships need to be accounted for in transmission models of human papillomavirus?. *International Journal of Environmental Research and Public Health*, **2010**, 7, 635-50	4.6	13
89	Using network models to approximate spatial point-process models. *Mathematical Biosciences*, **2003**, 184, 101-14	3.9	13
88	Model-based projections for COVID-19 outbreak size and student-days lost to closure in Ontario childcare centres and primary schools. *Scientific Reports*, **2021**, 11, 6402	4.9	13
87	Behavioral Epidemiology of Infectious Diseases: An Overview **2013**, 1-19		12

86	An agent-based computational model of the spread of tuberculosis. *Journal of Statistical Mechanics: Theory and Experiment*, **2011**, 2011, P05003	1.9	12
85	Coevolution of risk perception, sexual behaviour, and HIV transmission in an agent-based model. *Journal of Theoretical Biology*, **2013**, 337, 125-32	2.3	11
84	Mathematical models of the interplay between individual vaccinating decisions and disease dynamics: a need for closer integration of models and data. *Human Vaccines and Immunotherapeutics*, **2012**, 8, 842-4	4.4	11
83	Disease Interventions Can Interfere with One Another through Disease-Behaviour Interactions. *PLoS Computational Biology*, **2015**, 11, e1004291	5	11
82	Spatial correlation as an early warning signal of regime shifts in a multiplex disease-behaviour network. *Journal of Theoretical Biology*, **2018**, 448, 17-25	2.3	10
81	The impacts of simultaneous disease intervention decisions on epidemic outcomes. *Journal of Theoretical Biology*, **2016**, 395, 1-10	2.3	10
80	Dynamics and control of foot-and-mouth disease in endemic countries: a pair approximation model. *Journal of Theoretical Biology*, **2014**, 357, 150-9	2.3	10
79	Bounded rationality alters the dynamics of paediatric immunization acceptance. *Scientific Reports*, **2015**, 5, 10724	4.9	10
78	Impacts of constrained culling and vaccination on control of foot and mouth disease in near-endemic settings: a pair approximation model. *Epidemics*, **2014**, 9, 18-30	5.1	10
77	Wealth as a source of density dependence in human population growth. *Oikos*, **2008**, 117, 1824-1832	4	10
76	Prosocial polio vaccination in Israel. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 13138-13144	11.5	10
75	Estimating the COVID-19 R number: a bargain with the devil?. *Lancet Infectious Diseases, The*, **2021**, 21, 151-153	25.5	10
74	Algorithmic discovery of dynamic models from infectious disease data. *Scientific Reports*, **2020**, 10, 7061	4.9	9
73	The influence of social behaviour on competition between virulent pathogen strains. *Journal of Theoretical Biology*, **2018**, 455, 47-53	2.3	9
72	Competition between injunctive social norms and conservation priorities gives rise to complex dynamics in a model of forest growth and opinion dynamics. *Journal of Theoretical Biology*, **2017**, 432, 132-140	2.3	9
71	Impact of imitation processes on the effectiveness of ring vaccination. *Bulletin of Mathematical Biology*, **2011**, 73, 2748-72	2.1	9
70	Socio-ecological dynamics of Caribbean coral reef ecosystems and conservation opinion propagation. *Scientific Reports*, **2018**, 8, 2597	4.9	8
69	Outcome inelasticity and outcome variability in behaviour-incidence models: an example from an SEIR infection on a dynamic network. *Computational and Mathematical Methods in Medicine*, **2012**, 2012, 652562	2.8	8

68	Conditions for a second wave of COVID-19 due to interactions between disease dynamics and social processes		8
67	The impact of aggregating serogroups in dynamic models of Neisseria meningitidis transmission. *BMC Infectious Diseases*, **2015**, 15, 300	4	7
66	The Environmental Kuznets Curve Fails in a Globalized Socio-Ecological Metapopulation: A Sustainability Game Theory Approach. *Handbook of Statistics*, **2018**, 39, 315-341	0.6	7
65	Modelling invasibility in endogenously oscillating tree populations: timing of invasion matters. *Biological Invasions*, **2010**, 12, 219-231	2.7	7
64	Multiplayer games and HIV transmission via casual encounters. *Mathematical Biosciences and Engineering*, **2017**, 14, 359-376	2.1	7
63	Spatial early warning signals of social and epidemiological tipping points in a coupled behaviour-disease network. *Scientific Reports*, **2020**, 10, 7611	4.9	7
62	Convergence of socio-ecological dynamics in disparate ecological systems under strong coupling to human social systems. *Theoretical Ecology*, **2019**, 12, 285-296	1.6	7
61	Solving the patient zero inverse problem by using generalized simulated annealing. *Physica A: Statistical Mechanics and Its Applications*, **2018**, 490, 1513-1521	3.3	6
60	Examining OntarioS universal influenza immunization program with a multi-strain dynamic model. *Vaccine*, **2014**, 32, 5098-117	4.1	6
59	CAN CULLING TO PREVENT MONKEYPOX INFECTION BE COUNTER-PRODUCTIVE? SCENARIOS FROM A THEORETICAL MODEL. *Journal of Biological Systems*, **2012**, 20, 259-283	1.6	6
58	EXPLORATION OF THE PARAMETER SPACE IN AN AGENT-BASED MODEL OF TUBERCULOSIS SPREAD: EMERGENCE OF DRUG RESISTANCE IN DEVELOPING VS DEVELOPED COUNTRIES. *International Journal of Modern Physics C*, **2012**, 23, 1250046	1.1	6
57	COVID-19: when should quarantine be enforced?. *Lancet Infectious Diseases, The*, **2020**, 20, 994-995	25.5	6
56	Elements of indigenous socio-ecological knowledge show resilience despite ecosystem changes in the forest-grassland mosaics of the Nilgiri Hills, India. *Palgrave Communications*, **2018**, 4,	5.3	6
55	Interconnections Accelerate Collapse in a Socio-Ecological Metapopulation. *Sustainability*, **2019**, 11, 1852	3.6	5
54	Spatial coupled disease-behavior framework as a dynamic and adaptive system Reply to comments on "Coupled disease-behavior dynamics on complex networks: A review". *Physics of Life Reviews*, **2015**, 15, 57-60	2.1	5
53	Food webs in the human body: linking ecological theory to viral dynamics. *PLoS ONE*, **2012**, 7, e48812	3.7	5
52	Coupled Human-Environment Dynamics of Forest Pest Spread and Control in a Multi-Patch, Stochastic Setting. *PLoS ONE*, **2015**, 10, e0139353	3.7	5
51	Detecting and distinguishing tipping points using spectral early warning signals. *Journal of the Royal Society Interface*, **2020**, 17, 20200482	4.1	5

50	Emergence and spread of drug resistant influenza: A two-population game theoretical model. *Infectious Disease Modelling*, **2016**, 1, 40-51	15.7	5
49	Truncation selection and payoff distributions applied to the replicator equation. *Journal of Theoretical Biology*, **2016**, 404, 383-390	2.3	4
48	Use of a catalytic model to estimate hepatitis A incidence in a low-endemicity country: implications for modeling immunization policies. *Medical Decision Making*, **2012**, 32, 167-75	2.5	4
47	Interventions to Mitigate COVID-19 Misinformation: A Systematic Review and Meta-Analysis.. *Journal of Health Communication*, **2022**, 1-12	2.5	4
46	Coupling fishery dynamics, human health and social learning in a model of fish-borne pollution exposure. *Sustainability Science*, **2016**, 11, 179-192	6.4	3
45	An antibiotic protocol to minimize emergence of drug-resistant tuberculosis. *Physica A: Statistical Mechanics and Its Applications*, **2014**, 400, 80-92	3.3	3
44	Deep learning for early warning signals of regime shifts		3
43	Best response dynamics improve sustainability and equity outcomes in common-pool resources problems, compared to imitation dynamics. *Journal of Theoretical Biology*, **2021**, 509, 110476	2.3	3
42	Can interactions between timing of vaccine-altered influenza pandemic waves and seasonality in influenza complications lead to more severe outcomes?. *PLoS ONE*, **2011**, 6, e23580	3.7	2
41	The far side of the COVID-19 epidemic curve: local re-openings and re-closings based on globally coordinated triggers may work best		2
40	Spatial structure in protected forest-grassland mosaics: Exploring futures under climate change. *Global Change Biology*, **2020**, 26, 6097-6115	11.4	2
39	Cooperation in a generalized age-structured spatial game. *Journal of Theoretical Biology*, **2020**, 484, 109995	2.3	2
38	Vaccine Prioritisation Using Bluetooth Exposure Notification Apps		2
37	COVID-19 vaccine perceptions in the initial phases of US vaccine roll-out: an observational study on reddit.. *BMC Public Health*, **2022**, 22, 446	4.1	2
36	The impact of truncation selection and diffusion on cooperation in spatial games. *Journal of Theoretical Biology*, **2019**, 466, 64-83	2.3	1
35	A local optimization framework for addressing conservation conflicts in mosaic ecosystems. *PLoS ONE*, **2019**, 14, e0217812	3.7	1
34	Unifying perspectives on cooperation under social viscosity: Comment on "Universal scaling for the dilemma strength in evolutionary games" by Z. Wang et al. *Physics of Life Reviews*, **2015**, 14, 34-6	2.1	1
33	Socio-ecological mechanisms for persistence of native Australian grasses under pressure from nitrogen runoff and invasive species. *Ecological Modelling*, **2019**, 413, 108830	3	1

32	A population biological approach to the collective dynamics of countries undergoing demographic transition. *Journal of Theoretical Biology*, **2010**, 265, 167-76	2.3	1
31	Impact of co-evolution of negative vaccine-related information, vaccination behavior and epidemic spreading in multilayer networks. *Communications in Nonlinear Science and Numerical Simulation*, **2022**, 109, 106312	3.7	1
30	When conflicts get heated, so does the planet: social-climate dynamics under inequality		1
29	Echo chambers as early warning signals of widespread vaccine refusal in social-epidemiological networks		1
28	The Influence Of Social Behavior On Competition Between Virulent Pathogen Strains		1
27	Go big or go home: A model-based assessment of general strategies to slow the spread of forest pests via infested firewood. *PLoS ONE*, **2020**, 15, e0238979	3.7	1
26	Estimating COVID-19 cases and deaths prevented by non-pharmaceutical interventions, and the impact of individual actions: a retrospective model-based analysis		1
25	Ideas and perspectives: Biogeochemistry some key foci for the future. *Biogeosciences*, **2021**, 18, 3005-3018	4.8	1
24	Population behavioural dynamics can mediate the persistence of emerging infectious diseases		1
23	Stochasticity-induced persistence in coupled social-ecological systems.. *Journal of Theoretical Biology*, **2022**, 542, 111088	2.3	1
22	The Impact of Pre-exposure Prophylaxis for Human Immunodeficiency Virus on Gonorrhea Prevalence. *Bulletin of Mathematical Biology*, **2020**, 82, 85	2.1	0
21	A well-timed shift from local to global agreements accelerates climate change mitigation. *Nature Communications*, **2021**, 12, 2908	17.4	0
20	Fire mitigates bark beetle outbreaks in serotinous forests.. *Theoretical Ecology*, **2021**, 14, 611-621	1.6	0
19	Projected impact of a plant-derived vaccine on the burden of seasonal influenza in Canada. *Human Vaccines and Immunotherapeutics*, **2021**, 17, 3643-3651	4.4	0
18	Targeted pandemic containment through identifying local contact network bottlenecks. *PLoS Computational Biology*, **2021**, 17, e1009351	5	0
17	"Hot-spotting" to improve vaccine allocation by harnessing digital contact tracing technology: An application of percolation theory. *PLoS ONE*, **2021**, 16, e0256889	3.7	0
16	When conflicts get heated, so does the planet: coupled social-climate dynamics under inequality. *Proceedings of the Royal Society B: Biological Sciences*, **2021**, 288, 20211357	4.4	0
15	Network structural metrics as early warning signals of widespread vaccine refusal in social-epidemiological networks. *Journal of Theoretical Biology*, **2021**, 531, 110881	2.3	0

14	Local Overfishing Patterns Have Regional Effects on Health of Coral, and Economic Transitions Can Promote Its Recovery.. *Bulletin of Mathematical Biology*, **2022**, 84, 46	2.1	0
13	Estimating COVID-19 cases and deaths prevented by non-pharmaceutical interventions, and the impact of individual actions: A retrospective model-based analysis.. *Epidemics*, **2022**, 39, 100557	5.1	0
12	Cervical cancer incidence can increase despite HPV vaccination Authors reply. *Lancet Infectious Diseases, The*, **2010**, 10, 595	25.5	
11	Parameterizing a dynamic influenza model using longitudinal versus age-stratified case notifications yields different predictions of vaccine impacts. *Mathematical Biosciences and Engineering*, **2019**, 16, 3753-3770	2.1	
10	Spatially-implicit modelling of disease-behaviour interactions in the context of non-pharmaceutical interventions. *Mathematical Biosciences and Engineering*, **2018**, 15, 461-483	2.1	
9	A nested model for tuberculosis: Combining within-host and between-host processes in a single framework. *International Journal of Modern Physics C*,2150167	1.1	
8	Go big or go home: A model-based assessment of general strategies to slow the spread of forest pests via infested firewood **2020**, 15, e0238979		
7	Go big or go home: A model-based assessment of general strategies to slow the spread of forest pests via infested firewood **2020**, 15, e0238979		
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