Christopher A Gilligan

List of Publications by Year
in descending order

141 papers	6,394 citations	71061 41 h-index	91828 69 g-index
145 all docs	145 docs citations	145 times ranked	5357 citing authors

#	Article	IF	Citations
1	Wheat rust epidemics damage Ethiopian wheat production: A decade of field disease surveillance reveals national-scale trends in past outbreaks. PLoS ONE, 2021, 16, e0245697.	1.1	8
2	Analytical approximation for invasion and endemic thresholds, and the optimal control of epidemics in spatially explicit individual-based models. Journal of the Royal Society Interface, 2021, 18, 20200966.	1.5	3
3	Smallholder Cassava Planting Material Movement and Grower Behavior in Zambia: Implications for the Management of Cassava Virus Diseases. Phytopathology, 2021, 111, 1952-1962.	1.1	7
4	Predicting the potential for spread of emerald ash borer (Agrilus planipennis) in Great Britain: What can we learn from other affected areas?. Plants People Planet, 2021, 3, 402-413.	1.6	5
5	The persistent threat of emerging plant disease pandemics to global food security. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	261
6	Regional Differences in Control Operations during the 2019â€“2021 Desert Locust Upsurge. Agronomy, 2021, 11, 2529.	1.3	5
7	Modelling and manipulation of aphid-mediated spread of non-persistently transmitted viruses. Virus Research, 2020, 277, 197845.	1.1	39
8	What is pathogen-mediated insect superabundance?. Journal of the Royal Society Interface, 2020, 17, 20200229.	1.5	5
9	Three Aphid-Transmitted Viruses Encourage Vector Migration From Infected Common Bean (Phaseolus) Tj ETQq1 1 0.784314 rgBT /Ove 2020, 11, 613772.	1.7	13
10	A modelling framework to assess the likely effectiveness of facemasks in combination with â€˜lock-downâ€™ in managing the COVID-19 pandemic. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20200376.	1.0	206
11	Estimating epidemiological parameters from experiments in vector access to host plants, the method of matching gradients. PLoS Computational Biology, 2020, 16, e1007724.	1.5	8
12	Computational models to improve surveillance for cassava brown streak disease and minimize yield loss. PLoS Computational Biology, 2020, 16, e1007823.	1.5	11
13	Will an outbreak exceed available resources for control? Estimating the risk from invading pathogens using practical definitions of a severe epidemic. Journal of the Royal Society Interface, 2020, 17, 20200690.	1.5	30
14	Title is missing!. , 2020, 16, e1007823.		0
15	Title is missing!. , 2020, 16, e1007823.		0
16	Title is missing!. , 2020, 16, e1007823.		0
17	Title is missing!. , 2020, 16, e1007823.		0
18	Microsatellite Analysis and Urediniospore Dispersal Simulations Support the Movement of <i>Puccinia graminis</i> f. sp. <i>tritici</i> from Southern Africa to Australia. Phytopathology, 2019, 109, 133-144.	1.1	36

#	Article	IF	Citations
19	An early warning system to predict and mitigate wheat rust diseases in Ethiopia. Environmental Research Letters, 2019, 14, 115004.	2.2	38
20	Applying optimal control theory to complex epidemiological models to inform real-world disease management. Philosophical Transactions of the Royal Society B: Biological Sciences, 2019, 374, 20180284.	1.8	43
21	Pathogenic modification of plants enhances longâ€distance dispersal of nonpersistently transmitted viruses to new hosts. Ecology, 2019, 100, e02725.	1.5	55
22	Expansion of the cassava brown streak pandemic in Uganda revealed by annual field survey data for 2004 to 2017. Scientific Data, 2019, 6, 327.	2.4	19
23	Management Strategies for Conservation of Tanoak in California Forests Threatened by Sudden Oak Death: A Disease-Community Feedback Modelling Approach. Forests, 2019, 10, 1103.	0.9	3
24	Variability in commercial demand for tree saplings affects the probability of introducing exotic forest diseases. Journal of Applied Ecology, 2019, 56, 180-189.	1.9	3
25	Different Plant Viruses Induce Changes in Feeding Behavior of Specialist and Generalist Aphids on Common Bean That Are Likely to Enhance Virus Transmission. Frontiers in Plant Science, 2019, 10, 1811.	1.7	27
26	Grower and regulator conflict in management of the citrus disease Huanglongbing in Brazil: A modelling study. Journal of Applied Ecology, 2018, 55, 1956-1965.	1.9	22
27	What a Difference a Stochastic Process Makes: Epidemiological-Based Real Options Models of Optimal Treatment of Disease. Environmental and Resource Economics, 2018, 70, 691-711.	1.5	7
28	Viral Manipulation of Plant Stress Responses and Host Interactions With Insects. Advances in Virus Research, 2018, 102, 177-197.	0.9	48
29	Control fast or control smart: When should invading pathogens be controlled?. PLoS Computational Biology, 2018, 14, e1006014.	1.5	46
30	Surveillance to Inform Control of Emerging Plant Diseases: An Epidemiological Perspective. Annual Review of Phytopathology, 2017, 55, 591-610.	3.5	71
31	Riskâ€based management of invading plant disease. New Phytologist, 2017, 214, 1317-1329.	3.5	60
32	Quantifying airborne dispersal routes of pathogens over continents to safeguard global wheat supply. Nature Plants, 2017, 3, 780-786.	4.7	81
33	Large-Scale Atmospheric Dispersal Simulations Identify Likely Airborne Incursion Routes of Wheat Stem Rust Into Ethiopia. Phytopathology, 2017, 107, 1175-1186.	1.1	28
34	Evidence-based controls for epidemics using spatio-temporal stochastic models in a Bayesian framework. Journal of the Royal Society Interface, 2017, 14, 20170386.	1.5	15
35	Dynamical network models for cattle trade: towards economy-based epidemic risk assessment. Journal of Complex Networks, 2017, 5, 604-624.	1.1	10
36	Considering behaviour to ensure the success of a disease control strategy. Royal Society Open Science, 2017, 4, 170721.	1.1	18

#	Article	IF	Citations
37	Spatial dynamics and control of a crop pathogen with mixed-mode transmission. PLoS Computational Biology, 2017, 13, e1005654.	1.5	29
38	Detecting Presymptomatic Infection Is Necessary to Forecast Major Epidemics in the Earliest Stages of Infectious Disease Outbreaks. PLoS Computational Biology, 2016, 12, e1004836.	1.5	73
39	Market analyses of livestock trade networks to inform the prevention of joint economic and epidemiological risks. Journal of the Royal Society Interface, 2016, 13, 20151099.	1.5	19
40	Modeling when, where, and how to manage a forest epidemic, motivated by sudden oak death in California. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 5640-5645.	3.3	141
41	Trade-off between disease resistance and crop yield: a landscape-scale mathematical modelling perspective. Journal of the Royal Society Interface, 2016, 13, 20160451.	1.5	37
42	Management of invading pathogens should be informed by epidemiology rather than administrative boundaries. Ecological Modelling, 2016, 324, 28-32.	1.2	46
43	Mathematical models are a powerful method to understand and control the spread of Huanglongbing. PeerJ, 2016, 4, e2642.	0.9	52
44	Phenotypic and Genotypic Characterization of Race TKTTF of <i>Puccinia graminis</i> f. sp. <i>tritici</i> that Caused a Wheat Stem Rust Epidemic in Southern Ethiopia in 2013â€“14. Phytopathology, 2015, 105, 917-928.	1.1	202
45	Optimising and Communicating Options for the Control of Invasive Plant Disease When There Is Epidemiological Uncertainty. PLoS Computational Biology, 2015, 11, e1004211.	1.5	61
46	Thirteen challenges in modelling plant diseases. Epidemics, 2015, 10, 6-10.	1.5	145
47	Estimating the Delay between Host Infection and Disease (Incubation Period) and Assessing Its Significance to the Epidemiology of Plant Diseases. PLoS ONE, 2014, 9, e86568.	1.1	52
48	Bayesian inference for an emerging arboreal epidemic in the presence of control. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 6258-6262.	3.3	55
49	Bayesian Analysis for Inference of an Emerging Epidemic: Citrus Canker in Urban Landscapes. PLoS Computational Biology, 2014, 10, e1003587.	1.5	30
50	Cost-Effective Control of Plant Disease When Epidemiological Knowledge Is Incomplete: Modelling Bahia Bark Scaling of Citrus. PLoS Computational Biology, 2014, 10, e1003753.	1.5	49
51	Rasterising Epidemiological Host Data Efficiently. , 2014, , .		0
52	Optimal control of disease infestations on a lattice. Mathematical Medicine and Biology, 2014, 31, 87-97.	0.8	1
53	Epidemiological analysis of the effects of biofumigation for biological control of root rot in sugar beet. Plant Pathology, 2013, 62, 69-78.	1.2	13
54	The Consequence of Tree Pests and Diseases for Ecosystem Services. Science, 2013, 342, 1235773.	6.0	386

#	Article	IF	Citations
55	Biodiversity Conservation in the Face of Dramatic Forest Disease: An Integrated Conservation Strategy for Tanoak (<i>Notholithocarpus densiflorus</i>) Threatened by Sudden Oak Death. MadroÃ±o, 2013, 60, 151-164.	0.3	18
56	Host Growth Can Cause Invasive Spread of Crops by Soilborne Pathogens. PLoS ONE, 2013, 8, e63003.	1.1	10
57	Searching for the most cost-effective strategy for controlling epidemics spreading on regular and small-world networks. Journal of the Royal Society Interface, 2012, 9, 158-169.	1.5	36
58	Time-Dependent Infectivity and Flexible Latent and Infectious Periods in Compartmental Models of Plant Disease. Phytopathology, 2012, 102, 365-380.	1.1	47
59	Ecosystem transformation by emerging infectious disease: loss of large tanoak from California forests. Journal of Ecology, 2012, 100, 712-722.	1.9	111
60	Landscape Epidemiology and Control of Pathogens with Cryptic and Long-Distance Dispersal: Sudden Oak Death in Northern Californian Forests. PLoS Computational Biology, 2012, 8, e1002328.	1.5	78
61	An Epidemiological Framework for Modelling Fungicide Dynamics and Control. PLoS ONE, 2012, 7, e40941.	1.1	10
62	Epidemiological modeling of invasion in heterogeneous landscapes: spread of sudden oak death in California (1990â€“2030). Ecosphere, 2011, 2, art17.	1.0	140
63	A theoretical framework for biological control of soil-borne plant pathogens: Identifying effective strategies. Journal of Theoretical Biology, 2011, 278, 32-43.	0.8	34
64	The Effect of Heterogeneity on Invasion in Spatial Epidemics: From Theory to Experimental Evidence in a Model System. PLoS Computational Biology, 2011, 7, e1002174.	1.5	30
65	The Effect of Landscape Pattern on the Optimal Eradication Zone of an Invading Epidemic. Phytopathology, 2010, 100, 638-644.	1.1	40
66	Invasion, persistence and control in epidemic models for plant pathogens: the effect of host demography. Journal of the Royal Society Interface, 2010, 7, 439-451.	1.5	38
67	Complexity and anisotropy in host morphology make populations less susceptible to epidemic outbreaks. Journal of the Royal Society Interface, 2010, 7, 1083-1092.	1.5	15
68	Economically optimal timing for crop disease control under uncertainty: an options approach. Journal of the Royal Society Interface, 2010, 7, 1421-1428.	1.5	25
69	Optimal Strategies for the Eradication of Asiatic Citrus Canker in Heterogeneous Host Landscapes. Phytopathology, 2009, 99, 1370-1376.	1.1	47
70	Epidemiological Analysis of Take-All Decline in Winter Wheat. Phytopathology, 2009, 99, 861-868.	1.1	17
71	Changes in fungicide sensitivity and relative species abundance in <i>Oculimacula yallundae</i> and <i>O. acuformis</i> populations (eyespot disease of cereals) in Western Europe. Plant Pathology, 2008, 57, 509-517.	1.2	31
72	Scaling from mycelial growth to infection dynamics: a reaction diffusion approach. Fungal Ecology, 2008, 1, 133-142.	0.7	9

#	Article	IF	Citations
73	Epidemiological Models for Invasion and Persistence of Pathogens. Annual Review of Phytopathology, 2008, 46, 385-418.	3.5	137
74	Models of Fungicide Resistance Dynamics. Annual Review of Phytopathology, 2008, 46, 123-147.	3.5	102
75	Sustainable agriculture and plant diseases: an epidemiological perspective. Philosophical Transactions of the Royal Society B: Biological Sciences, 2008, 363, 741-759.	1.8	125
76	Economic incentives and mathematical models of disease. Environment and Development Economics, 2007, 12, 707-732.	1.3	71
77	Optimizing the control of disease infestations at the landscape scale. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 4984-4989.	3.3	90
78	Disease control and its selection for damaging plant virus strains in vegetatively propagated staple food crops; a theoretical assessment. Proceedings of the Royal Society B: Biological Sciences, 2007, 274, 11-18.	1.2	76
79	Estimation of multiple transmission rates for epidemics in heterogeneous populations. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 20392-20397.	3.3	55
80	Parameter estimation and prediction for the course of a single epidemic outbreak of a plant disease. Journal of the Royal Society Interface, 2007, 4, 865-877.	1.5	15
81	Impact of scale on the effectiveness of disease control strategies for epidemics with cryptic infection in a dynamical landscape: an example for a crop disease. Journal of the Royal Society Interface, 2007, 4, 925-934.	1.5	56
82	Evaluating the Performance of Chemical Control in the Presence of Resistant Pathogens. Bulletin of Mathematical Biology, 2007, 69, 525-537.	0.9	23
83	An Epidemiological Analysis of the Role of Disease-Induced Root Growth in the Differential Response of Two Cultivars of Winter Wheat to Infection by Gaeumannomyces graminis var. tritici. Phytopathology, 2006, 96, 510-516.	1.1	12
84	Large-Scale Fungicide Spray Heterogeneity and the Regional Spread of Resistant Pathogen Strains. Phytopathology, 2006, 96, 549-555.	1.1	46
85	Soil structure and soil-borne diseases: using epidemiological concepts to scale from fungal spread to plant epidemics. European Journal of Soil Science, 2006, 57, 26-37.	1.8	45
86	Bayesian estimation for percolation models of disease spread in plant populations. Statistics and Computing, 2006, 16, 391-402.	0.8	38
87	DAMPING-OFF EPIDEMICS, CONTACT STRUCTURE, AND DISEASE TRANSMISSION IN MIXED-SPECIES POPULATIONS. Ecology, 2005, 86, 1948-1957.	1.5	21
88	Epidemiology and Chemical Control of Take-All on Seminal and Adventitious Roots of Wheat. Phytopathology, 2005, 95, 62-68.	1.1	30
89	Small-Scale Fungicide Spray Heterogeneity and the Coexistence of Resistant and Sensitive Pathogen Strains. Phytopathology, 2005, 95, 632-639.	1.1	40
90	Controlling disease spread on networks with incomplete knowledge. Physical Review E, 2004, 70, 066145.	0.8	49

#	Article	IF	Citations
91	Using conservation of pattern to estimate spatial parameters from a single snapshot. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 9155-9160.	3.3	40
92	Transmission rates and adaptive evolution of pathogens in sympatric heterogeneous plant populations. Proceedings of the Royal Society B: Biological Sciences, 2004, 271, 2187-2194.	1.2	27
93	Bayesian analysis of botanical epidemics using stochastic compartmental models. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 12120-12124.	3.3	36
94	Epidemiological dynamics and the efficiency of biological control of soilâ€borne disease during consecutive epidemics in a controlled environment. New Phytologist, 2004, 161, 569-575.	3.5	32
95	Empirical evidence of spatial thresholds to control invasion of fungal parasites and saprotrophs. New Phytologist, 2004, 163, 125-132.	3.5	61
96	An empirical method to estimate the effect of soil on the rate for transmission of dampingâ€off disease. New Phytologist, 2004, 162, 231-238.	3.5	12
97	Invasion of drug and pesticide resistance is determined by a trade-off between treatment efficacy and relative fitness. Bulletin of Mathematical Biology, 2004, 66, 825-840.	0.9	34
98	On ?Analytical models for the patchy spread of plant disease?. Bulletin of Mathematical Biology, 2004, 66, 1027-1037.	0.9	16
99	A Model for the Invasion and Spread of Rhizomania in the United Kingdom: Implications for Disease Control Strategies. Phytopathology, 2004, 94, 209-215.	1.1	39
100	Modeling and Analysis of Disease-Induced Host Growth in the Epidemiology of Take-All. Phytopathology, 2004, 94, 535-540.	1.1	24
101	Effect of bulk density on the spatial organisation of the fungus Rhizoctonia solani in soil. FEMS Microbiology Ecology, 2003, 44, 45-56.	1.3	100
102	QUANTIFICATION AND ANALYSIS OF TRANSMISSION RATES FOR SOILBORNE EPIDEMICS. Ecology, 2003, 84, 3232-3239.	1.5	37
103	Response of a deterministic epidemiological system to a stochastically varying environment. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 9067-9072.	3.3	89
104	Measures of Durability of Resistance. Phytopathology, 2003, 93, 616-625.	1.1	73
105	An epidemiological framework for disease management. Advances in Botanical Research, 2002, 38, 1-64.	0.5	95
106	Extinction times for closed epidemics: the effects of host spatial structure. Ecology Letters, 2002, 5, 747-755.	3.0	58
107	Soil-borne fungal pathogens: scaling-up from hyphal to colony behaviour and the probability of disease transmission. New Phytologist, 2001, 150, 169-177.	3.5	23
108	Invasion and persistence of plant parasites in a spatially structured host population. Oikos, 2001, 94, 162-174.	1.2	67

#	Article	IF	Citations
109	Soil physics, fungal epidemiology and the spread of Rhizoctonia solani. New Phytologist, 2001, 151, 459-468.	3.5	88
110	The effect of cultivation on the size, shape, and persistence of disease patches in fields. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 7128-7133.	3.3	21
111	Quantitative Analysis and Model Simplification of an Epidemic Model with Primary and Secondary Infection. Bulletin of Mathematical Biology, 2000, 62, 377-393.	0.9	8
112	Saprotrophic invasion by the soilâ€borne fungal plant pathogen Rhizoctonia solani and percolation thresholds. New Phytologist, 2000, 146, 535-544.	3.5	96
113	Modelling the effect of temperature on the development of Polymyxa betae. Plant Pathology, 2000, 49, 600-607.	1.2	20
114	Metapopulation dynamics of bubonic plague. Nature, 2000, 407, 903-906.	13.7	216
115	Population Dynamics of Plantâ€"Parasite Interactions: Thresholds for Invasion. Theoretical Population Biology, 2000, 57, 219-233.	0.5	40
116	Invasion thresholds for fungicide resistance: deterministic and stochastic analyses. Proceedings of the Royal Society B: Biological Sciences, 1999, 266, 2539-2549.	1.2	37
117	Selecting hyperparasites for biocontrol of Dutch elm disease. Proceedings of the Royal Society B: Biological Sciences, 1999, 266, 437-445.	1.2	22
118	Predicting variability in biological control of a plantâ€"pathogen system using stochastic models. Proceedings of the Royal Society B: Biological Sciences, 1999, 266, 1743-1753.	1.2	50
119	A Model for the Temporal Buildup of Polymyxa betae. Phytopathology, 1999, 89, 30-38.	1.1	24
120	Spatial heterogeneity in three species, plantâ€"parasiteâ€"hyperparasite, systems. Philosophical Transactions of the Royal Society B: Biological Sciences, 1998, 353, 543-557.	1.8	66
121	A test of heterogeneous mixing as a mechanism for ecological persistence in a disturbed environment. Proceedings of the Royal Society B: Biological Sciences, 1997, 264, 227-232.	1.2	33
122	Population dynamics of botanical epidemics involving primary and secondary infection. Philosophical Transactions of the Royal Society B: Biological Sciences, 1997, 352, 591-608.	1.8	33
123	Biological control in a disturbed environment. Philosophical Transactions of the Royal Society B: Biological Sciences, 1997, 352, 1935-1949.	1.8	29
124	Asymptotic analysis of an epidemic model with primary and secondary infection. Bulletin of Mathematical Biology, 1997, 59, 1101-1123.	0.9	17
125	Biological control of pathozone behaviour and disease dynamics of Rhizoctonia solani by Trichoderma viride. New Phytologist, 1997, 136, 359-367.	3.5	39
126	Persistence of Host-parasite Interactions in a Disturbed Environment. Journal of Theoretical Biology, 1997, 188, 241-258.	0.8	30

#	Article	IF	Citations
127	Modelling of early infection of cereal roots by the takeâ€all fungus: a detailed mechanistic simulator. New Phytologist, 1994, 128, 515-537.	3.5	23
128	The effect of sowing date on infection of sugar beet by Polymyxa betae. Plant Pathology, 1992, 41, 148-153.	1.2	21
129	Infection of sugar beet by Polymyxa betae in relation to soil temperature. Plant Pathology, 1991, 40, 257-267.	1.2	39
130	Comparison of disease progress curves. New Phytologist, 1990, 115, 223-242.	3.5	67
131	Antagonistic interactions involving plant pathogens: fitting and analysis of models to non-monotonic curves for population and disease dynamics. New Phytologist, 1990, 115, 649-665.	3.5	17
132	Effects of Self-sown Wheat on Levels of the Take-all Disease on Seedlings of Winter Wheat Grown in a Model System. Journal of Phytopathology, 1990, 129, 46-57.	0.5	6
133	Modelling and Estimation of the Relative Potential for Infection of Winter Wheat by Inoculum of Gaeumannomyces graminis Derived from Propagules and Infected Roots. Journal of Phytopathology, 1990, 129, 58-68.	0.5	11
134	Fitting of simple models for field disease progress data for the take-all fungus. Plant Pathology, 1989, 38, 397-407.	1.2	25
135	A discrete probability model for polycyclic infection by soil-borne plant parasites. New Phytologist, 1988, 109, 183-191.	3.5	7
136	INOCULUM EFFICIENCY AND PATHOZONE WIDTH FOR TWO HOST-PARASITE SYSTEMS. New Phytologist, 1987, 107, 549-566.	3.5	24
137	Size and shape of sampling units for estimating incidence of sharp eyespot, Rhizoctonia cerealis, in plots of wheat. Journal of Agricultural Science, 1982, 99, 461-464.	0.6	5
138	Size and shape of sampling units for estimating incidence of stem canker on oil-seed rape stubble in field plots after swathing. Journal of Agricultural Science, 1980, 94, 493-496.	0.6	7
139	Beet western yellows virus on oilseed rape. Plant Pathology, 1980, 29, 53-53.	1.2	11
140	Estimating expansion of the range of oak processionary moth (Thaumetopoea processionea) in the UK from 2006 to 2019. Agricultural and Forest Entomology, 0, , .	0.7	5
141	The role of pathogen mediated insect superabundance in the eastâ€African emergence of a plant virus. Journal of Ecology, 0, , .	1.9	4