

Daniel Coombs

List of Publications by Year in descending order

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74
papers

3,225
citations

126907

33
h-index

168389

53
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93
all docs

93
docs citations

93
times ranked

3893
citing authors

#	ARTICLE	IF	CITATIONS
1	Dependence of T Cell Antigen Recognition on T Cell Receptor-Peptide MHC Confinement Time. <i>Immunity</i> , 2010, 32, 163-174.	14.3	214
2	T cell receptor binding kinetics required for T cell activation depend on the density of cognate ligand on the antigen-presenting cell. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 4824-4829.	7.1	151
3	Evolution of virulence: Interdependence, constraints, and selection using nested models. <i>Theoretical Population Biology</i> , 2006, 69, 145-153.	1.1	128
4	Modelling the combined impact of interventions in averting deaths during a synthetic opioid overdose epidemic. <i>Addiction</i> , 2019, 114, 1602-1613.	3.3	124
5	Evaluating the importance of within- and between-host selection pressures on the evolution of chronic pathogens. <i>Theoretical Population Biology</i> , 2007, 72, 576-591.	1.1	120
6	An Age-Structured Model of HIV Infection that Allows for Variations in the Production Rate of Viral Particles and the Death Rate of Productively Infected Cells. <i>Mathematical Biosciences and Engineering</i> , 2004, 1, 267-288.	1.9	120
7	A Hidden Markov Model for Single Particle Tracks Quantifies Dynamic Interactions between LFA-1 and the Actin Cytoskeleton. <i>PLoS Computational Biology</i> , 2009, 5, e1000556.	3.2	113
8	Activated TCRs remain marked for internalization after dissociation from pMHC. <i>Nature Immunology</i> , 2002, 3, 926-931.	14.5	103
9	Diffusion on a Sphere with Localized Traps: Mean First Passage Time, Eigenvalue Asymptotics, and Fekete Points. <i>SIAM Journal on Applied Mathematics</i> , 2009, 70, 302-332.	1.8	94
10	The influence of transport on the kinetics of binding to surface receptors: application to cells and BIAcore. <i>Journal of Molecular Recognition</i> , 1999, 12, 293-299.	2.1	92
11	Optimizing within-host viral fitness: infected cell lifespan and virion production rate. <i>Journal of Theoretical Biology</i> , 2004, 229, 281-288.	1.7	89
12	Equilibrium Thermodynamics of Cell-Cell Adhesion Mediated by Multiple Ligand-Receptor Pairs. <i>Biophysical Journal</i> , 2004, 86, 1408-1423.	0.5	85
13	Mechanical force regulates integrin turnover in <i>Drosophila</i> in vivo. <i>Nature Cell Biology</i> , 2012, 14, 935-943.	10.3	85
14	Toll-like receptor ligands sensitize B-cell receptor signalling by reducing actin-dependent spatial confinement of the receptor. <i>Nature Communications</i> , 2015, 6, 6168.	12.8	79
15	Distribution of take-home opioid antagonist kits during a synthetic opioid epidemic in British Columbia, Canada: a modelling study. <i>Lancet Public Health</i> , The, 2018, 3, e218-e225.	10.0	76
16	Antigen Potency and Maximal Efficacy Reveal a Mechanism of Efficient T Cell Activation. <i>Science Signaling</i> , 2011, 4, ra39.	3.6	71
17	A Stochastic Model of Latently Infected Cell Reactivation and Viral Blip Generation in Treated HIV Patients. <i>PLoS Computational Biology</i> , 2011, 7, e1002033.	3.2	68
18	Mechanical Modulation of Receptor-Ligand Interactions at Cell-Cell Interfaces. <i>Biophysical Journal</i> , 2012, 102, 1265-1273.	0.5	68

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19	Quantifying the impact of COVID-19 control measures using a Bayesian model of physical distancing. <i>PLoS Computational Biology</i> , 2020, 16, e1008274.	3.2	67
20	Calculations Show Substantial Serial Engagement of T Cell Receptors. <i>Biophysical Journal</i> , 2001, 80, 606-612.	0.5	63
21	A Role for Rebinding in Rapid and Reliable T Cell Responses to Antigen. <i>PLoS Computational Biology</i> , 2009, 5, e1000578.	3.2	63
22	Asymptotic Analysis of First Passage Time Problems Inspired by Ecology. <i>Bulletin of Mathematical Biology</i> , 2015, 77, 83-125.	1.9	55
23	Modeling Within-Host Evolution of HIV: Mutation, Competition and Strain Replacement. <i>Bulletin of Mathematical Biology</i> , 2007, 69, 2361-2385.	1.9	51
24	Importance of COVID-19 vaccine efficacy in older age groups. <i>Vaccine</i> , 2021, 39, 2020-2023.	3.8	50
25	Arp2/3 complex-driven spatial patterning of the BCR enhances immune synapse formation, BCR signaling and B cell activation. <i>ELife</i> , 2019, 8, .	6.0	48
26	Dynamic Regulation of CD45 Lateral Mobility by the Spectrin-Ankyrin Cytoskeleton of T Cells*. <i>Journal of Biological Chemistry</i> , 2010, 285, 11392-11401.	3.4	47
27	Stochastic Analysis of Pre- and Postexposure Prophylaxis against HIV Infection. <i>SIAM Journal on Applied Mathematics</i> , 2013, 73, 904-928.	1.8	45
28	Effects of Intracellular Calcium and Actin Cytoskeleton on TCR Mobility Measured by Fluorescence Recovery. <i>PLoS ONE</i> , 2008, 3, e3913.	2.5	41
29	Probability of a false-negative HIV antibody test result during the window period: a tool for pre- and post-test counselling. <i>International Journal of STD and AIDS</i> , 2015, 26, 215-224.	1.1	41
30	SIR-Network Model and Its Application to Dengue Fever. <i>SIAM Journal on Applied Mathematics</i> , 2015, 75, 2581-2609.	1.8	39
31	Periodic Chirality Transformations Propagating On Bacterial Flagella. <i>Physical Review Letters</i> , 2002, 89, 118102.	7.8	38
32	Effects of the Geometry of the Immunological Synapse on the Delivery of Effector Molecules. <i>Biophysical Journal</i> , 2004, 87, 2215-2220.	0.5	38
33	The space and time frames of T cell activation at the immunological synapse. <i>FEBS Letters</i> , 2010, 584, 4851-4857.	2.8	37
34	Vaccination against 2009 pandemic H1N1 in a population dynamical model of Vancouver, Canada: timing is everything. <i>BMC Public Health</i> , 2011, 11, 932.	2.9	36
35	Estimating naloxone need in the USA across fentanyl, heroin, and prescription opioid epidemics: a modelling study. <i>Lancet Public Health</i> , The, 2022, 7, e210-e218.	10.0	33
36	Modeling COVID-19 and Its Impacts on U.S. Immigration and Customs Enforcement (ICE) Detention Facilities, 2020. <i>Journal of Urban Health</i> , 2020, 97, 439-447.	3.6	32

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37	Analysis of Serial Engagement and Peptide-MHC Transport in T Cell Receptor Microclusters. <i>Biophysical Journal</i> , 2008, 94, 3447-3460.	0.5	28
38	Limitations of Qdot labelling compared to directly-conjugated probes for single particle tracking of B cell receptor mobility. <i>Scientific Reports</i> , 2017, 7, 11379.	3.3	26
39	T cell activation: Kinetic proofreading, serial engagement and cell adhesion. <i>Journal of Computational and Applied Mathematics</i> , 2005, 184, 121-139.	2.0	25
40	On the duration of the period between exposure to HIV and detectable infection. <i>Epidemics</i> , 2017, 20, 73-83.	3.0	24
41	Optimal viral production. <i>Bulletin of Mathematical Biology</i> , 2003, 65, 1003-1023.	1.9	23
42	Quantification and Modeling of Tripartite CD2-, CD58FC Chimera (Alefcept)-, and CD16-mediated Cell Adhesion. <i>Journal of Biological Chemistry</i> , 2007, 282, 34748-34757.	3.4	23
43	In vivo quantitative analysis of Talin turnover in response to force. <i>Molecular Biology of the Cell</i> , 2015, 26, 4149-4162.	2.1	21
44	Analysis of membrane-localized binding kinetics with FRAP. <i>European Biophysics Journal</i> , 2008, 37, 627-638.	2.2	18
45	Applied stretch initiates directional invasion via the action of Rap1 GTPase as a tension sensor. <i>Journal of Cell Science</i> , 2017, 130, 152-163.	2.0	17
46	First among equals. <i>Physics of Life Reviews</i> , 2019, 28, 92-93.	2.8	17
47	Kinetic Proofreading Model. <i>Advances in Experimental Medicine and Biology</i> , 2008, 640, 82-94.	1.6	16
48	Analysis of Peptide/MHC-Induced TCR Downregulation: Deciphering the Triggering Kinetics. <i>Cell Biochemistry and Biophysics</i> , 2006, 46, 101-112.	1.8	15
49	How much leeway is there to relax COVID-19 control measures?. <i>Epidemics</i> , 2021, 35, 100453.	3.0	15
50	SARS-CoV-2 seroprevalence among Vancouver public school staff in British Columbia, Canada: a cross-sectional study. <i>BMJ Open</i> , 2022, 12, e057846.	1.9	14
51	Design Parameters for Granzyme-Mediated Cytotoxic Lymphocyte Target-Cell Killing and Specificity. <i>Biophysical Journal</i> , 2015, 109, 477-488.	0.5	13
52	<i>In vivo</i> regulation of integrin turnover by outside-in activation. <i>Journal of Cell Science</i> , 2016, 129, 2912-24.	2.0	13
53	Mathematical modeling of COVID-19 in British Columbia: An age-structured model with time-dependent contact rates. <i>Epidemics</i> , 2022, 39, 100559.	3.0	12
54	A Theoretical and Experimental Study of Competition Between Solution and Surface Receptors for Ligand in a Biacore Flow Cell. <i>Bulletin of Mathematical Biology</i> , 2006, 68, 1125-1150.	1.9	11

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55	Improving parameter estimation for cell surface FRAP data. <i>Journal of Proteomics</i> , 2008, 70, 1224-1231.	2.4	11
56	Conditions for eradicating hepatitis C in people who inject drugs: A fibrosis aware model of hepatitis C virus transmission. <i>Journal of Theoretical Biology</i> , 2016, 395, 31-39.	1.7	11
57	A Review of Mathematical Models for T Cell Receptor Triggering and Antigen Discrimination. , 2011, , 25-45.		10
58	Modeling Effect of a β -Secretase Inhibitor on Amyloid- β Dynamics Reveals Significant Role of an Amyloid Clearance Mechanism. <i>Bulletin of Mathematical Biology</i> , 2011, 73, 230-247.	1.9	10
59	The Impact of Implementing a Test, Treat and Retain HIV Prevention Strategy in Atlanta among Black Men Who Have Sex with Men with a History of Incarceration: A Mathematical Model. <i>PLoS ONE</i> , 2015, 10, e0123482.	2.5	10
60	Diffusion analysis of single particle trajectories in a Bayesian nonparametrics framework. <i>Physical Biology</i> , 2020, 17, 025001.	1.8	9
61	Examining the dynamics of Epstein-Barr virus shedding in the tonsils and the impact of HIV-1 coinfection on daily saliva viral loads. <i>PLoS Computational Biology</i> , 2021, 17, e1009072.	3.2	9
62	Effects of spatiotemporal HSV-2 lesion dynamics and antiviral treatment on the risk of HIV-1 acquisition. <i>PLoS Computational Biology</i> , 2018, 14, e1006129.	3.2	7
63	A novel Bayesian approach to predicting reductions in HIV incidence following increased testing interventions among gay, bisexual and other men who have sex with men in Vancouver, Canada. <i>Journal of the Royal Society Interface</i> , 2018, 15, 20170849.	3.4	6
64	Sustained Reduction in Sexual Behavior that May Pose a Risk of HIV Transmission Following Diagnosis During Early HIV Infection Among Gay Men in Vancouver, British Columbia. <i>AIDS and Behavior</i> , 2018, 22, 2068-2078.	2.7	6
65	Symptomatic and Asymptomatic Transmission of SARS-CoV-2 in K-12 Schools, British Columbia, Canada April to June 2021. <i>Microbiology Spectrum</i> , 2022, 10, .	3.0	6
66	A Biophysical Model of Cell Adhesion Mediated by Immunoadhesin Drugs and Antibodies. <i>PLoS ONE</i> , 2011, 6, e19701.	2.5	3
67	Assessing the optimal virulence of malaria-targeting mosquito pathogens: a mathematical study of engineered <i>Metarhiziumanisopliae</i> . <i>Malaria Journal</i> , 2014, 13, 11.	2.3	3
68	The role of mathematical modelling in aiding public health policy decision-making: A case study of the BC opioid overdose emergency. <i>International Journal of Drug Policy</i> , 2021, 88, 102603.	3.3	3
69	Stochastic Dynamics of the Latently Infected Cell Reservoir During HIV Infection. <i>Bulletin of Mathematical Biology</i> , 2019, 81, 131-154.	1.9	2
70	The influence of transport on the kinetics of binding to surface receptors: application to cells and BIAcore. <i>Journal of Molecular Recognition</i> , 1999, 12, 293-299.	2.1	2
71	Quantifying transmissibility of SARS-CoV-2 and impact of intervention within long-term healthcare facilities. <i>Royal Society Open Science</i> , 2022, 9, 211710.	2.4	2
72	Predicting the impact of clustered risk and testing behaviour patterns on the population-level effectiveness of pre-exposure prophylaxis against HIV among gay, bisexual and other men who have sex with men in Greater Vancouver, Canada. <i>Epidemics</i> , 2020, 30, 100360.	3.0	1

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73	In vivo regulation of integrin turnover by outside-in activation. <i>Development (Cambridge)</i> , 2016, 143, e1.1-e1.1.	2.5	0
74	Transmission Dynamics of COVID-19. <i>World Scientific Series in Global Healthcare Economics and Public Policy</i> , 2022, , 51-76.	0.1	0