Richard Bertram

List of Publications by Year
in descending order

134 papers	4,643 citations	109321 35 h-index	123424 61 g-index
141 all docs	141 docs citations	141 times ranked	3191 citing authors

#	Article	IF	Citations
1	Chronic stress facilitates bursting electrical activity in pituitary corticotrophs. Journal of Physiology, 2022, 600, 313-332.	2.9	6
2	A closed-loop multi-scale model for intrinsic frequency-dependent regulation of axonal growth. Mathematical Biosciences, 2022, 344, 108768.	1.9	1
3	Oscillations in K(ATP) conductance drive slow calcium oscillations in pancreatic Î²-cells. Biophysical Journal, 2022, 121, 1449-1464.	0.5	16
4	Canards Underlie Both Electrical and Ca^{2+}-Induced Early Afterdepolarizations in a Model for Cardiac Myocytes. SIAM Journal on Applied Dynamical Systems, 2022, 21, 1059-1091.	1.6	3
5	Endocrine Cell Function and Dysfunction. , 2022, , 1308-1311.		0
6	Fast-slow analysis as a technique for understanding the neuronal response to current ramps. Journal of Computational Neuroscience, 2021, , .	1.0	1
7	Fast-slow analysis of a stochastic mechanism for electrical bursting. Chaos, 2021, 31, 103128.	2.5	7
8	Symbiosis of Electrical and Metabolic Oscillations in Pancreatic Î²-Cells. Frontiers in Physiology, 2021, 12, 781581.	2.8	14
9	Big Ducks in the Heart: Canard Analysis Can Explain Large Early Afterdepolarizations in Cardiomyocytes. SIAM Journal on Applied Dynamical Systems, 2020, 19, 1701-1735.	1.6	11
10	Phantom bursting may underlie electrical bursting in single pancreatic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si183.svg"><mml:mrow><mml:mi>Î²</mml:mi></mml:mrow></mml:math>-cells. Journal of Theoretical Biology, 2020, 501, 110346.	1.7	5
11	Network dynamics underlie learning and performance of birdsong. Current Opinion in Neurobiology, 2020, 64, 119-126.	4.2	3
12	Multi-mode attractors and spatio-temporal canards. Physica D: Nonlinear Phenomena, 2020, 411, 132544.	2.8	3
13	Chronic stimulation induces adaptive potassium channel activity that restores calcium oscillations in pancreatic islets in vitro. American Journal of Physiology - Endocrinology and Metabolism, 2020, 318, E554-E563.	3.5	3
14	Spiking and Membrane Properties of Rat Olfactory Bulb Dopamine Neurons. Frontiers in Cellular Neuroscience, 2020, 14, 60.	3.7	8
15	Canard analysis reveals why a large Ca2+ window current promotes early afterdepolarizations in cardiac myocytes. PLoS Computational Biology, 2020, 16, e1008341.	3.2	11
16	Where to look and how to look: Combining global sensitivity analysis with fast/slow analysis to study multi-timescale oscillations. Mathematical Biosciences, 2019, 314, 1-12.	1.9	7
17	Why pacing frequency affects the production of early afterdepolarizations in cardiomyocytes: An explanation revealed by slow-fast analysis of a minimal model. Physical Review E, 2019, 99, 052205.	2.1	18
18	Synchronization of pancreatic islets by periodic or non-periodic muscarinic agonist pulse trains. PLoS ONE, 2019, 14, e0211832.	2.5	9

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19	Female zebra finches do not sing yet share neural pathways necessary for singing in males. Journal of Comparative Neurology, 2019, 527, 843-855.	1.6	35
20	Experience-Dependent Intrinsic Plasticity During Auditory Learning. Journal of Neuroscience, 2019, 39, 1206-1221.	3.6	19
21	Closing in on the Mechanisms of Pulsatile Insulin Secretion. Diabetes, 2018, 67, 351-359.	0.6	70
22	Expansion of scroll wave filaments induced by chiral mismatch. Chaos, 2018, 28, 045106.	2.5	2
23	Intrinsic physiology of inhibitory neurons changes over auditory development. Journal of Neurophysiology, 2018, 119, 290-304.	1.8	5
24	Transitions between bursting modes in the integrated oscillator model for pancreatic Î²-cells. Journal of Theoretical Biology, 2018, 454, 310-319.	1.7	17
25	Interhemispheric dominance switching in a neural network model for birdsong. Journal of Neurophysiology, 2018, 120, 1186-1197.	1.8	3
26	Fast-slow analysis of the Integrated Oscillator Model for pancreatic Î²-cells. Journal of Theoretical Biology, 2018, 457, 152-162.	1.7	16
27	Orthogonal topography in the parallel input architecture of songbird HVC. Journal of Comparative Neurology, 2017, 525, 2133-2151.	1.6	8
28	Stabilization of collapsing scroll waves in systems with random heterogeneities. Chaos, 2017, 27, 043108.	2.5	2
29	A distributed neural network model for the distinct roles of medial and lateral HVC in zebra finch song production. Journal of Neurophysiology, 2017, 118, 677-692.	1.8	10
30	Calcium Oscillation Frequency-Sensitive Gene Regulation and Homeostatic Compensation in Pancreatic $$upbeta $$-Cells. Bulletin of Mathematical Biology, 2017, 79, 1295-1324.	1.9	7
31	Multi-timescale systems and fast-slow analysis. Mathematical Biosciences, 2017, 287, 105-121.	1.9	123
32	The Effects of GABAergic Polarity Changes on Episodic Neural Network Activity in Developing Neural Systems. Frontiers in Computational Neuroscience, 2017, 11, 88.	2.1	7
33	Upregulation of an inward rectifying K+ channel can rescue slow Ca2+ oscillations in K(ATP) channel deficient pancreatic islets. PLoS Computational Biology, 2017, 13, e1005686.	3.2	12
34	Neuronal Intrinsic Physiology Changes During Development of a Learned Behavior. ENeuro, 2017, 4, ENEURO.0297-17.2017.	1.9	23
35	From global to local: exploring the relationship between parameters and behaviors in models of electrical excitability. Journal of Computational Neuroscience, 2016, 40, 331-345.	1.0	12
36	Glucocorticoids Inhibit CRH/AVP-Evoked Bursting Activity of Male Murine Anterior Pituitary Corticotrophs. Endocrinology, 2016, 157, 3108-3121.	2.8	24

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37	Dual Detection System for Simultaneous Measurement of Intracellular Fluorescent Markers and Cellular Secretion. Analytical Chemistry, 2016, 88, 10368-10373.	6.5	16
38	Is bursting more effective than spiking in evoking pituitary hormone secretion? A spatiotemporal simulation study of calcium and granule dynamics. American Journal of Physiology - Endocrinology and Metabolism, 2016, 310, E515-E525.	3.5	27
39	Influence of dynorphin on estradiol- and cervical stimulation-induced prolactin surges in ovariectomized rats. Endocrine, 2016, 53, 585-594.	2.3	4
40	Ca 2+ Effects on ATP Production and Consumption Have Regulatory Roles on Oscillatory Islet Activity. Biophysical Journal, 2016, 110, 733-742.	0.5	35
41	Phase Analysis of Metabolic Oscillations and Membrane Potential in Pancreatic Islet Î² -Cells. Biophysical Journal, 2016, 110, 691-699.	0.5	52
42	Glucose Oscillations Can Activate an Endogenous Oscillator in Pancreatic Islets. PLoS Computational Biology, 2016, 12, e1005143.	3.2	20
43	Large conductance Ca²⁺â€activated K⁺ (BK) channels promote secretagogueâ€induced transition from spiking to bursting in murine anterior pituitary corticotrophs. Journal of Physiology, 2015, 593, 1197-1211.	2.9	39
44	Mathematical Modeling in Neuroendocrinology. , 2015, 5, 911-927.		9
45	Modeling of Glucose-Induced cAMP Oscillations in Pancreatic Î² Cells: cAMP Rocks when Metabolism Rolls. Biophysical Journal, 2015, 109, 439-449.	0.5	12
46	Electrical, Calcium, and Metabolic Oscillations in Pancreatic Islets. , 2015, , 453-474.		2
47	KNDy Neurons Modulate the Magnitude of the Steroid-Induced Luteinizing Hormone Surges in Ovariectomized Rats. Endocrinology, 2015, 156, 4200-4213.	2.8	41
48	Geometric Singular Perturbation Analysis of Bursting Oscillations in Pituitary Cells. Frontiers in Applied Dynamical Systems: Reviews and Tutorials, 2015, , 1-52.	0.5	1
49	Determining the contributions of divisive and subtractive feedback in the Hodgkin-Huxley model. Journal of Computational Neuroscience, 2014, 37, 403-415.	1.0	6
50	Calcium and Metabolic Oscillations in Pancreatic Islets: Who's Driving the Bus?. SIAM Journal on Applied Dynamical Systems, 2014, 13, 683-703.	1.6	19
51	Disconnection of a basal ganglia circuit in juvenile songbirds attenuates the spectral differentiation of song syllables. Developmental Neurobiology, 2014, 74, 574-590.	3.0	9
52	The Molecular Cell Biology of Anterior Pituitary Cells. , 2014, , 19-39.		0
53	Independent Premotor Encoding of the Sequence and Structure of Birdsong in Avian Cortex. Journal of Neuroscience, 2014, 34, 16821-16834.	3.6	31
54	A geometric understanding of how fast activating potassium channels promote bursting in pituitary cells. Journal of Computational Neuroscience, 2014, 36, 259-278.	1.0	38

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55	Negative Feedback Synchronizes Islets of Langerhans. Biophysical Journal, 2014, 106, 2275-2282.	0.5	37
56	Interpreting Frequency Responses to Dose-Conserved Pulsatile Input Signals in Simple Cell Signaling Motifs. PLoS ONE, 2014, 9, e95613.	2.5	18
57	Endocrine Cell Function and Dysfunction. , 2014, , 1-5.		0
58	Electrical, Calcium, and Metabolic Oscillations in Pancreatic Islets. , 2014, , 1-20.		0
59	Large conductance Ca²⁺-activated K⁺channels (BK) promote secretagogue-induced transition from spiking to bursting in murine anterior pituitary corticotrophs. Journal of Physiology, 2014, , n/a-n/a.	2.9	2
60	Electrophysiological characterization and computational models of HVC neurons in the zebra finch. Journal of Neurophysiology, 2013, 110, 1227-1245.	1.8	37
61	Slow oscillations of KATP conductance in mouse pancreatic islets provide support for electrical bursting driven by metabolic oscillations. American Journal of Physiology - Endocrinology and Metabolism, 2013, 305, E805-E817.	3.5	33
62	Multiple Geometric Viewpoints of Mixed Mode Dynamics Associated with Pseudo-plateau Bursting. SIAM Journal on Applied Dynamical Systems, 2013, 12, 789-830.	1.6	51
63	Models of Electrical Activity: Calibration and Prediction Testing onÂtheÂSame Cell. Biophysical Journal, 2012, 103, 2021-2032.	0.5	16
64	A computational tool for automated large-scale analysis and measurement of bird-song syntax. Journal of Neuroscience Methods, 2012, 210, 147-160.	2.5	13
65	Cervical stimulation activates A1 and locus coeruleus neurons that project to the paraventricular nucleus of the hypothalamus. Brain Research Bulletin, 2012, 88, 566-573.	3.0	13
66	The relationship between two fast/slow analysis techniques for bursting oscillations. Chaos, 2012, 22, 043117.	2.5	45
67	Phosphofructo-2-kinase/Fructose-2,6-bisphosphatase Modulates Oscillations of Pancreatic Islet Metabolism. PLoS ONE, 2012, 7, e34036.	2.5	28
68	Bifurcations of canard-induced mixed mode oscillations in a pituitary Lactotroph model. Discrete and Continuous Dynamical Systems, 2012, 32, 2879-2912.	0.9	22
69	Calcium cooperativity of exocytosis as a measure of Ca2+ channel domain overlap. Brain Research, 2011, 1398, 126-138.	2.2	49
70	Slow variable dominance and phase resetting in phantom bursting. Journal of Theoretical Biology, 2011, 276, 218-228.	1.7	34
71	From Plateau to Pseudo-Plateau Bursting: MakingÂtheÂTransition. Bulletin of Mathematical Biology, 2011, 73, 1292-1311.	1.9	35
72	The dynamics underlying pseudo-plateau bursting in a pituitary cell model. Journal of Mathematical Neuroscience, 2011, 1, .	2.4	40

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73	Mathematical modeling demonstrates how multiple slow processes can provide adjustable control of islet bursting. Islets, 2011, 3, 320-326.	1.8	1
74	Dual Pre-Motor Contribution to Songbird Syllable Variation. Journal of Neuroscience, 2011, 31, 322-330.	3.6	24
75	Fast-Activating Voltage- and Calcium-Dependent Potassium (BK) Conductance Promotes Bursting in Pituitary Cells: A Dynamic Clamp Study. Journal of Neuroscience, 2011, 31, 16855-16863.	3.6	57
76	Quantifying the Relative Contributions of Divisive and Subtractive Feedback to Rhythm Generation. PLoS Computational Biology, 2011, 7, e1001124.	3.2	19
77	Synchronization of mouse islets of Langerhans by glucose waveforms. American Journal of Physiology - Endocrinology and Metabolism, 2011, 301, E742-E747.	3.5	27
78	Mechanism for the Universal Pattern of Activity in Developing Neuronal Networks. Journal of Neurophysiology, 2010, 103, 2208-2221.	1.8	30
79	Mixed mode oscillations as a mechanism for pseudo-plateau bursting. Journal of Computational Neuroscience, 2010, 28, 443-458.	1.0	68
80	A Tale of Two Rhythms: The Emerging Roles of Oxytocin in Rhythmic Prolactin Release. Journal of Neuroendocrinology, 2010, 22, 778-784.	2.6	26
81	Metabolic Oscillations in Pancreatic Islets Depend on the Intracellular Ca2+ Level but Not Ca2+ Oscillations. Biophysical Journal, 2010, 99, 76-84.	0.5	50
82	Microfluidic System for Generation of Sinusoidal Glucose Waveforms for Entrainment of Islets of Langerhans. Analytical Chemistry, 2010, 82, 6704-6711.	6.5	49
83	Ion Channels and Signaling in the Pituitary Gland. Endocrine Reviews, 2010, 31, 845-915.	20.1	202
84	Electrical Bursting, Calcium Oscillations, and Synchronization of Pancreatic Islets. Advances in Experimental Medicine and Biology, 2010, 654, 261-279.	1.6	57
85	Ca²⁺Current versus Ca²⁺Channel Cooperativity of Exocytosis. Journal of Neuroscience, 2009, 29, 12196-12209.	3.6	25
86	Using phase relations to identify potential mechanisms for metabolic oscillations in isolated Î²-cell mitochondria. Islets, 2009, 1, 87-94.	1.8	11
87	Correlation Analysis. Methods in Enzymology, 2009, 467, 1-22.	1.0	2
88	A Mathematical Study of the Differential Effects of Two SERCA Isoforms on Ca2+ Oscillations in Pancreatic Islets. Bulletin of Mathematical Biology, 2008, 70, 1251-71.	1.9	24
89	A Phantom Bursting Mechanism for Episodic Bursting. Bulletin of Mathematical Biology, 2008, 70, 1979-1993.	1.9	22
90	A Mathematical Model for the Actions of Activin, Inhibin, and Follistatin on Pituitary Gonadotrophs. Bulletin of Mathematical Biology, 2008, 70, 2211-2228.	1.9	16

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91	ENZYME ISOFORMS MAY INCREASE PHENOTYPIC ROBUSTNESS. Evolution; International Journal of Organic Evolution, 2008, 62, 2884-2893.	2.3	9
92	A-Type K⁺ Current Can Act as a Trigger for Bursting in the Absence of a Slow Variable. Neural Computation, 2008, 20, 436-451.	2.2	31
93	Long Lasting Synchronization of Calcium Oscillations by Cholinergic Stimulation in Isolated Pancreatic Islets. Biophysical Journal, 2008, 95, 4676-4688.	0.5	40
94	Response to the Comment by F. Diederichs. Biophysical Journal, 2008, 94, 5080.	0.5	0
95	A statistical method for quantifying songbird phonology and syntax. Journal of Neuroscience Methods, 2008, 174, 147-154.	2.5	26
96	Auditory-Dependent Vocal Recovery in Adult Male Zebra Finches Is Facilitated by Lesion of a Forebrain Pathway That Includes the Basal Ganglia. Journal of Neuroscience, 2007, 27, 12308-12320.	3.6	48
97	Metabolic and electrical oscillations: partners in controlling pulsatile insulin secretion. American Journal of Physiology - Endocrinology and Metabolism, 2007, 293, E890-E900.	3.5	155
98	Backbone Structure of the Amantadine-Blocked Trans-Membrane Domain M2 Proton Channel from Influenza A Virus. Biophysical Journal, 2007, 92, 4335-4343.	0.5	175
99	Interaction of Glycolysis and Mitochondrial Respiration in Metabolic Oscillations of Pancreatic Islets. Biophysical Journal, 2007, 92, 1544-1555.	0.5	104
100	Low dose of dopamine may stimulate prolactin secretion by increasing fast potassium currents. Journal of Computational Neuroscience, 2007, 22, 211-222.	1.0	52
101	Diffusion of Calcium and Metabolites in Pancreatic Islets: Killing Oscillations with a Pitchfork. Biophysical Journal, 2006, 90, 3434-3446.	0.5	85
102	Glucose Modulates [Ca2+]i Oscillations in Pancreatic Islets via Ionic and Glycolytic Mechanisms. Biophysical Journal, 2006, 91, 2082-2096.	0.5	102
103	Residual Bound Ca2+ Can Account for the Effects of Ca2+ Buffers on Synaptic Facilitation. Journal of Neurophysiology, 2006, 96, 3389-3397.	1.8	31
104	A Correction to the Perspective Titled "Endothelin Action on Pituitary Lactotrophs: One Receptor, Many GTP-Binding Proteins" by Bertram et al.. Science Signaling, 2006, 2006, er2-er2.	3.6	2
105	A simplified model for mitochondrial ATP production. Journal of Theoretical Biology, 2006, 243, 575-586.	1.7	145
106	Endothelin Action on Pituitary Lactotrophs: One Receptor, Many GTP-Binding Proteins. Science Signaling, 2006, 2006, pe4-pe4.	3.6	8
107	A mathematical model for the mating-induced prolactin rhythm of female rats. American Journal of Physiology - Endocrinology and Metabolism, 2006, 290, E573-E582.	3.5	25
108	NEGATIVE CALCIUM FEEDBACK: THE ROAD FORM CHAY-KEIZER. , 2005, , 19-48.		32

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109	Integrative modeling of the pancreatic ï¿½ï¿½-cell. , 2005, , .		1
110	Individual Mice Can Be Distinguished by the Period of Their Islet Calcium Oscillations. Diabetes, 2005, 54, 3517-3522.	0.6	89
111	Intra- and Inter-Islet Synchronization of Metabolically Driven Insulin Secretion. Biophysical Journal, 2005, 89, 107-119.	0.5	129
112	Mathematical aspects of protein structure determination with NMR orientational restraints. Bulletin of Mathematical Biology, 2004, 66, 1705-1730.	1.9	19
113	Complex bursting in pancreatic islets: a potential glycolytic mechanism. Journal of Theoretical Biology, 2004, 228, 513-521.	1.7	39
114	A calcium-based phantom bursting model for pancreatic islets. Bulletin of Mathematical Biology, 2004, 66, 1313-1344.	1.9	97
115	Calcium and Glycolysis Mediate Multiple Bursting Modes in Pancreatic Islets. Biophysical Journal, 2004, 87, 3074-3087.	0.5	147
116	Filtering of Calcium Transients by the Endoplasmic Reticulum in Pancreatic Î²-Cells. Biophysical Journal, 2004, 87, 3775-3785.	0.5	31
117	Atomic refinement with correlated solid-state NMR restraints. Journal of Magnetic Resonance, 2003, 163, 300-309.	2.1	24
118	The Ca2+ Dynamics of Isolated Mouse Î²-Cells and Islets: Implications for Mathematical Models. Biophysical Journal, 2003, 84, 2852-2870.	0.5	141
119	A Minimal Model for G Proteinâ€"Mediated Synaptic Facilitation and Depression. Journal of Neurophysiology, 2003, 90, 1643-1653.	1.8	18
120	Role for G Protein GÎ²Î³ Isoform Specificity in Synaptic Signal Processing: A Computational Study. Journal of Neurophysiology, 2002, 87, 2612-2623.	1.8	8
121	Simulated-annealing real-space refinement as a tool in model building. Acta Crystallographica Section D: Biological Crystallography, 2002, 58, 761-767.	2.5	52
122	An improved hydrogen bond potential: Impact on medium resolution protein structures. Protein Science, 2002, 11, 1415-1423.	7.6	108
123	Differential Filtering of Two Presynaptic Depression Mechanisms. Neural Computation, 2001, 13, 69-85.	2.2	18
124	Dynamical complexity and temporal plasticity in pancreatic gÎ²b-cells. Journal of Biosciences, 2000, 25, 197-209.	1.1	28
125	The Phantom Burster Model for Pancreatic Î²-Cells. Biophysical Journal, 2000, 79, 2880-2892.	0.5	97
126	Implications of G-protein-mediated Ca2+ channel inhibition for neurotransmitter release and facilitation. , 1999, 7, 197-211.		20

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127	Modeling Study of the Effects of Overlapping Ca2+ Microdomains on Neurotransmitter Release. Biophysical Journal, 1999, 76, 735-750.	0.5	99
128	Measuring the Curl of Paper. College Mathematics Journal, 1999, 30, 315.	0.1	0
129	Population Dynamics of Synaptic Release Sites. SIAM Journal on Applied Mathematics, 1998, 58, 142-169.	1.8	9
130	Glucose Diffusion in Pancreatic Islets of Langerhans. Biophysical Journal, 1998, 74, 1722-1731.	0.5	42
131	A Simple Model of Transmitter Release and Facilitation. Neural Computation, 1997, 9, 515-523.	2.2	16
132	Topological and phenomenological classification of bursting oscillations. Bulletin of Mathematical Biology, 1995, 57, 413-439.	1.9	235
133	Reduced-system analysis of the effects of serotonin on a molluscan burster neuron. Biological Cybernetics, 1994, 70, 359-368.	1.3	3
134	A computational study of the effects of serotonin on a molluscan burster neuron. Biological Cybernetics, 1993, 69, 257-267.	1.3	33