Arthur Sherman

List of Publications by Year
in descending order

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88	4,416	87723 38	114278 63
papers	citations	h-index	g-index

92	92	92	3196
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Topological and phenomenological classification of bursting oscillations. Bulletin of Mathematical Biology, 1995, 57, 413-439.	0.9	235
2	A mathematical model of metabolic insulin signaling pathways. American Journal of Physiology - Endocrinology and Metabolism, 2002, 283, E1084-E1101.	1.8	177
3	Metabolic and electrical oscillations: partners in controlling pulsatile insulin secretion. American Journal of Physiology - Endocrinology and Metabolism, 2007, 293, E890-E900.	1.8	155
4	Calcium and Glycolysis Mediate Multiple Bursting Modes in Pancreatic Islets. Biophysical Journal, 2004, 87, 3074-3087.	0.2	147
5	A simplified model for mitochondrial ATP production. Journal of Theoretical Biology, 2006, 243, 575-586.	0.8	145
6	The Ca2+ Dynamics of Isolated Mouse Î²-Cells and Islets: Implications for Mathematical Models. Biophysical Journal, 2003, 84, 2852-2870.	0.2	141
7	Intra- and Inter-Islet Synchronization of Metabolically Driven Insulin Secretion. Biophysical Journal, 2005, 89, 107-119.	0.2	129
8	Experimental Characterization and Mathematical Modeling of P2X7 Receptor Channel Gating. Journal of Neuroscience, 2010, 30, 14213-14224.	1.7	116
9	Asymptotic Analysis of Buffered Calcium Diffusion near a Point Source. SIAM Journal on Applied Mathematics, 2001, 61, 1816-1838.	0.8	104
10	Interaction of Glycolysis and Mitochondrial Respiration in Metabolic Oscillations of Pancreatic Islets. Biophysical Journal, 2007, 92, 1544-1555.	0.2	104
11	Glucose Modulates [Ca2+]i Oscillations in Pancreatic Islets via Ionic and Glycolytic Mechanisms. Biophysical Journal, 2006, 91, 2082-2096.	0.2	102
12	Modeling Study of the Effects of Overlapping Ca2+ Microdomains on Neurotransmitter Release. Biophysical Journal, 1999, 76, 735-750.	0.2	99
13	The Phantom Burster Model for Pancreatic Î²-Cells. Biophysical Journal, 2000, 79, 2880-2892.	0.2	97
14	A calcium-based phantom bursting model for pancreatic islets. Bulletin of Mathematical Biology, 2004, 66, 1313-1344.	0.9	97
15	Mechanism of Spontaneous and Receptor-Controlled Electrical Activity in Pituitary Somatotrophs: Experiments and Theory. Journal of Neurophysiology, 2007, 98, 131-144.	0.9	96
16	Facilitation through Buffer Saturation: Constraints on Endogenous Buffering Properties. Biophysical Journal, 2004, 86, 2691-2709.	0.2	94
17	Newcomer insulin secretory granules as a highly calcium-sensitive pool. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 7432-7436.	3.3	94
18	Individual Mice Can Be Distinguished by the Period of Their Islet Calcium Oscillations: Is There an Intrinsic Islet Period That Is Imprinted In Vivo?. Diabetes, 2005, 54, 3517-3522.	0.3	89

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19	Diffusion of Calcium and Metabolites in Pancreatic Islets: Killing Oscillations with a Pitchfork. Biophysical Journal, 2006, 90, 3434-3446.	0.2	85
20	Full system bifurcation analysis of endocrine bursting models. Journal of Theoretical Biology, 2010, 264, 1133-1146.	0.8	84
21	New and Corrected Simulations of Synaptic Facilitation. Biophysical Journal, 2002, 83, 1368-1373.	0.2	83
22	Diffusively Coupled Bursters: Effects of Cell Heterogeneity. Bulletin of Mathematical Biology, 1998, 60, 1167-1200.	0.9	79
23	Channel Sharing in Pancreatic Î² -Cells Revisited: Enhancement of Emergent Bursting by Noise. Journal of Theoretical Biology, 2000, 207, 513-530.	0.8	79
24	Anti-phase, asymmetric and aperiodic oscillations in excitable cellsâ€"I. Coupled bursters. Bulletin of Mathematical Biology, 1994, 56, 811-835.	0.9	78
25	Cell Type- and Sex-Dependent Transcriptome Profiles of Rat Anterior Pituitary Cells. Frontiers in Endocrinology, 2019, 10, 623.	1.5	74
26	Ca2+ channel clustering with insulin-containing granules is disturbed in type 2 diabetes. Journal of Clinical Investigation, 2017, 127, 2353-2364.	3.9	70
27	Calcium-dependent block of P2X7 receptor channel function is allosteric. Journal of General Physiology, 2011, 138, 437-452.	0.9	68
28	Modeling of Membrane Excitability in Gonadotropin-Releasing Hormone-Secreting Hypothalamic Neurons Regulated by Ca²⁺-Mobilizing and Adenylyl Cyclase-Coupled Receptors. Journal of Neuroscience, 2000, 20, 9290-9297.	1.7	59
29	Identifying the Targets of the Amplifying Pathway for Insulin Secretion in Pancreatic Î²-Cells by Kinetic Modeling of Granule Exocytosis. Biophysical Journal, 2008, 95, 2226-2241.	0.2	57
30	Electrical Bursting, Calcium Oscillations, and Synchronization of Pancreatic Islets. Advances in Experimental Medicine and Biology, 2010, 654, 261-279.	0.8	57
31	Phase Analysis of Metabolic Oscillations and Membrane Potential in Pancreatic Islet Î² -Cells. Biophysical Journal, 2016, 110, 691-699.	0.2	52
32	Metabolic Oscillations in Pancreatic Islets Depend on the Intracellular Ca2+ Level but Not Ca2+ Oscillations. Biophysical Journal, 2010, 99, 76-84.	0.2	50
33	Calcium cooperativity of exocytosis as a measure of Ca2+ channel domain overlap. Brain Research, 2011, 1398, 126-138.	1.1	49
34	Dual Gating Mechanism and Function of P2X7 Receptor Channels. Biophysical Journal, 2013, 104, 2612-2621.	0.2	47
35	Glucose Metabolism, Islet Architecture, and Genetic Homogeneity in Imprinting of [Ca2+]i and Insulin Rhythms in Mouse Islets. PLoS ONE, 2009, 4, e8428.	1.1	45
36	From Spikers to Bursters Via Coupling: Help From Heterogeneity. Bulletin of Mathematical Biology, 2001, 63, 371-391.	0.9	43

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37	Resetting Behavior in a Model of Bursting in Secretory Pituitary Cells: Distinguishing Plateaus from Pseudo-Plateaus. Bulletin of Mathematical Biology, 2008, 70, 68-88.	0.9	43
38	Differential Intra-abdominal Adipose Tissue Profiling in Obese, Insulin-resistant Women. Obesity Surgery, 2009, 19, 1564-1573.	1.1	43
39	Long Lasting Synchronization of Calcium Oscillations by Cholinergic Stimulation in Isolated Pancreatic Islets. Biophysical Journal, 2008, 95, 4676-4688.	0.2	40
40	Paracrine regulation of glucagon secretion: the Î²/Î±/Î´ model. American Journal of Physiology - Endocrinology and Metabolism, 2016, 310, E597-E611.	1.8	40
41	Cross-currents between biology and mathematics: The codimension of pseudo-plateau bursting. Discrete and Continuous Dynamical Systems, 2012, 32, 2853-2877.	0.5	37
42	Modeling the Pancreatic Î±-Cell: Dual Mechanisms of Glucose Suppression of Glucagon Secretion. Biophysical Journal, 2014, 106, 741-751.	0.2	36
43	Ca 2+ Effects on ATP Production and Consumption Have Regulatory Roles on Oscillatory Islet Activity. Biophysical Journal, 2016, 110, 733-742.	0.2	35
44	Intact pancreatic islets and dispersed beta-cells both generate intracellular calcium oscillations but differ in their responsiveness to glucose. Cell Calcium, 2019, 83, 102081.	1.1	35
45	Slow variable dominance and phase resetting in phantom bursting. Journal of Theoretical Biology, 2011, 276, 218-228.	0.8	34
46	Common and diverse elements of ion channels and receptors underlying electrical activity in endocrine pituitary cells. Molecular and Cellular Endocrinology, 2018, 463, 23-36.	1.6	34
47	Amplitude-Dependent Spike-Broadening and Enhanced Ca2+ Signaling in GnRH-Secreting Neurons. Biophysical Journal, 2000, 79, 1310-1323.	0.2	33
48	Three Roads to Islet Bursting: Emergent Oscillations in Coupled Phantom Bursters. Biophysical Journal, 2004, 87, 193-206.	0.2	33
49	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.	1.8	33
50	Type 2 diabetes: one disease, many pathways. American Journal of Physiology - Endocrinology and Metabolism, 2020, 319, E410-E426.	1.8	33
51	NEGATIVE CALCIUM FEEDBACK: THE ROAD FORM CHAY-KEIZER. , 2005, , 19-48.		32
52	Gating properties of the P2X2a and P2X2b receptor channels: Experiments and mathematical modeling. Journal of General Physiology, 2012, 139, 333-348.	0.9	32
53	Chronic Glucose Exposure Systematically Shifts the Oscillatory Threshold of Mouse Islets: Experimental Evidence for an Early Intrinsic Mechanism of Compensation for Hyperglycemia. Endocrinology, 2016, 157, 611-623.	1.4	32
54	Filtering of Calcium Transients by the Endoplasmic Reticulum in Pancreatic Î²-Cells. Biophysical Journal, 2004, 87, 3775-3785.	0.2	31

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55	Residual Bound Ca2+ Can Account for the Effects of Ca2+ Buffers on Synaptic Facilitation. Journal of Neurophysiology, 2006, 96, 3389-3397.	0.9	31
56	Dynamical complexity and temporal plasticity in pancreatic gÎ²b-cells. Journal of Biosciences, 2000, 25, 197-209.	0.5	28
57	Phosphofructo-2-kinase/Fructose-2,6-bisphosphatase Modulates Oscillations of Pancreatic Islet Metabolism. PLoS ONE, 2012, 7, e34036.	1.1	28
58	Dynamical systems theory in physiology. Journal of General Physiology, 2011, 138, 13-19.	0.9	26
59	Ca²⁺Current versus Ca²⁺Channel Cooperativity of Exocytosis. Journal of Neuroscience, 2009, 29, 12196-12209.	1.7	25
60	Allosteric regulation of the P2X4 receptor channel pore dilation. Pflugers Archiv European Journal of Physiology, 2015, 467, 713-726.	1.3	24
61	A1C Underperforms as a Diagnostic Test in Africans Even in the Absence of Nutritional Deficiencies, Anemia and Hemoglobinopathies: Insight From the Africans in America Study. Frontiers in Endocrinology, 2019, 10, 533.	1.5	22
62	The Geometry of Bursting in the Dual Oscillator Model of Pancreatic eta-cells. SIAM Journal on Applied Dynamical Systems, 2009, 8, 1664-1693.	0.7	21
63	Differential adipogenic and inflammatory properties of small adipocytes in Zucker Obese and Lean rats. Diabetes and Vascular Disease Research, 2010, 7, 311-318.	0.9	21
64	Calcium and Metabolic Oscillations in Pancreatic Islets: Who's Driving the Bus?. SIAM Journal on Applied Dynamical Systems, 2014, 13, 683-703.	0.7	19
65	Modeling the diversity of spontaneous and agonist-induced electrical activity in anterior pituitary corticotrophs. Journal of Neurophysiology, 2017, 117, 2298-2311.	0.9	16
66	Divergent expression patterns of pituitary gonadotropin subunit and GnRH receptor genes to continuous GnRH in vitro and in vivo. Scientific Reports, 2019, 9, 20098.	1.6	16
67	Lessons from models of pancreatic Î² cells for engineering glucose-sensing cells. Mathematical Biosciences, 2010, 227, 12-19.	0.9	13
68	Beta-cell failure rather than insulin resistance is the major cause of abnormal glucose tolerance in Africans: insight from the Africans in America study. BMJ Open Diabetes Research and Care, 2021, 9, e002447.	1.2	11
69	Phase Independent Resetting in Relaxation and Bursting Oscillators. Journal of Theoretical Biology, 1994, 169, 339-348.	0.8	10
70	Improved Detection of Abnormal Glucose Tolerance in Africans: The Value of Combining Hemoglobin A1c With Glycated Albumin. Diabetes Care, 2020, 43, 2607-2613.	4.3	10
71	Deciphering the regulation of P2X4 receptor channel gating by ivermectin using Markov models. PLoS Computational Biology, 2017, 13, e1005643.	1.5	10
72	Population Dynamics of Synaptic Release Sites. SIAM Journal on Applied Mathematics, 1998, 58, 142-169.	0.8	9

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73	Channels, Coupling, and Synchronized Rhythmic Bursting Activity. , 1992, , 29-46.		9
74	Accounting for Near-Normal Glucose Sensitivity in Kir6.2[AAA] Transgenic Mice. Biophysical Journal, 2009, 97, 2409-2418.	0.2	8
75	The OGTT is highly reproducible in Africans for the diagnosis of diabetes: Implications for treatment and protocol design. Diabetes Research and Clinical Practice, 2020, 170, 108523.	1.1	8
76	BEYOND SYNCHRONIZATION: MODULATORY AND EMERGENT EFFECTS OF COUPLING IN SQUARE-WAVE BURSTING. , 2005, , 243-272.		6
77	Pulsatile Basal Insulin Secretion Is Driven by Glycolytic Oscillations. Physiology, 2022, 37, 216-223.	1.6	6
78	Metabolic characteristics of Africans with normal glucose tolerance and elevated 1-hour glucose: insight from the Africans in America study. BMJ Open Diabetes Research and Care, 2020, 8, e000837.	1.2	5
79	Calcium-Prolactin Secretion Coupling in Rat Pituitary Lactotrophs Is Controlled by PI4-Kinase Alpha. Frontiers in Endocrinology, 2021, 12, 790441.	1.5	5
80	Cell-Type-Specific Expression Pattern of Proton-Sensing Receptors and Channels in Pituitary Gland. Biophysical Journal, 2020, 119, 2335-2348.	0.2	3
81	Electrical, Calcium, and Metabolic Oscillations in Pancreatic Islets. , 2015, , 453-474.		2
82	Computer Modeling of Heterogeneous Î²-Cell Populations. Advances in Experimental Medicine and Biology, 1997, 426, 275-284.	0.8	2
83	Integrative modeling of the pancreatic ï¿½ï¿½-cell. , 2005, , .		1
84	Multiscale Modeling of Electrical and Intracellular Activity in the Pancreas: The Islet Tridomain Equations. Multiscale Modeling and Simulation, 2009, 7, 1609-1642.	0.6	1
85	Dynamics of Computational Islet Simulations: Islets with majority mutated openK_{ATP}channels retain bursting. Letters in Biomathematics, 2014, 1, 3-15.	0.3	1
86	Response to the Comment by F. Diederichs. Biophysical Journal, 2008, 94, 5080.	0.2	0
87	Effect of spatial arrangement of presynaptic calcium channels on the calcium current cooperativity of neurotransmitter release. BMC Neuroscience, 2011, 12, .	0.8	0
88	Electrical, Calcium, and Metabolic Oscillations in Pancreatic Islets. , 2014, , 1-20.		0