Flavio H Fenton

List of Publications by Year
in descending order

92 papers	4,816 citations	172207 29 h-index	95083 68 g-index
94 all docs	94 docs citations	94 times ranked	2253 citing authors

#	ARTICLE	IF	CITATIONS
1	Voltage-mediated mechanism for calcium wave synchronization and arrhythmogenesis in atrial tissue. Biophysical Journal, 2022, 121, 383-395.	0.2	7
2	Methodology for Cross-Talk Elimination in Simultaneous Voltage and Calcium Optical Mapping Measurements With Semasbestic Wavelengths. Frontiers in Physiology, 2022, 13, 812968.	1.3	6
3	Prediction of chaotic time series using recurrent neural networks and reservoir computing techniques: A comparative study. Machine Learning With Applications, 2022, 8, 100300.	3.0	23
4	Optical Ultrastructure of Large Mammalian Hearts Recovers Discordant Alternans by In Silico Data Assimilation. Frontiers in Network Physiology, 2022, 2, .	0.8	6
5	PO-705-01 ACTION POTENTIAL RESTITUTION CURVES OBTAINED FROM FULL EXPLANTED HUMAN HEARTS. Heart Rhythm, 2022, 19, S453-S454.	0.3	0
6	PO-616-06 THE SPATIOTEMPORAL ORGANIZATION OF VENTRICULAR FIBRILLATION (VF) IN EXPLANTED HUMAN HEARTS. Heart Rhythm, 2022, 19, S112-S113.	0.3	0
7	BS-516-02 OPTICAL MAPPING OF EXPLANTED HUMAN HEARTS ENABLES REFINED IONIC MODELS OF ACTION POTENTIAL AND CONDUCTION VELOCITY RESTITUTION CURVES FOR ARRHYTHMIA SIMULATION. Heart Rhythm, 2022, 19, S83-S84.	0.3	0
8	PO-691-07 SIMULTANEOUS OPTICAL MAPPING MEASUREMENTS OF VOLTAGE AND CALCIUM IN WHOLE EXPLANTED HUMAN HEARTS. Heart Rhythm, 2022, 19, S401.	0.3	0
9	A machine-learning approach for long-term prediction of experimental cardiac action potential time series using an autoencoder and echo state networks. Chaos, 2022, 32, .	1.0	8
10	Direct observation of a stable spiral wave reentry in ventricles of a whole human heart using optical mapping for voltage and calcium. Heart Rhythm, 2022, 19, 1912-1913.	0.3	3
11	Terminating spiral waves with a single designed stimulus: Teleportation as the mechanism for defibrillation. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	14
12	Defibrillate You Later, Alligator: Q10 Scaling and Refractoriness Keeps Alligators from Fibrillation. Integrative Organismal Biology, 2021, 3, obaa047.	0.9	5
13	Thermal effects on cardiac alternans onset and development: A spatiotemporal correlation analysis. Physical Review E, 2021, 103, L040201.	0.8	9
14	Arrhythmogenic Effects of Genetic Mutations Affecting Potassium Channels in Human Atrial Fibrillation: A Simulation Study. Frontiers in Physiology, 2021, 12, 681943.	1.3	3
15	Quantifying arrhythmic long QT effects of hydroxychloroquine and azithromycin with whole-heart optical mapping and simulations. Heart Rhythm O2, 2021, 2, 394-404.	0.6	16
16	Long-Time Prediction of Arrhythmic Cardiac Action Potentials Using Recurrent Neural Networks and Reservoir Computing. Frontiers in Physiology, 2021, 12, 734178.	1.3	11
17	Robust data assimilation with noise: Applications to cardiac dynamics. Chaos, 2021, 31, 013118.	1.0	9
18	Control and anticontrol of chaos in fractional-order models of Diabetes, HIV, Dengue, Migraine, Parkinson's and Ebola virus diseases. Chaos, Solitons and Fractals, 2021, 153, 111419.	2.5	23

#	Article	IF	Citations
19	Interactive Simulation of the ECG: Effects of Cell Types, Distributions, Shapes and Duration. , 2021, , .		0
20	A Network-based Cardiac Electrophysiology Simulator with Realistic Signal Generation and Response to Pacing Maneuvers. , 2021, , .		1
21	Unimapper: An Online Interactive Analyzer/Visualizer of Optical Mapping Experimental Data. , 2021, , .		1
22	Interactive 3D Human Heart Simulations on Segmented Human MRI Hearts. , 2021, , .		2
23	Real-Time Interactive Simulations of Complex Ionic Cardiac Cell Models in 2D and 3D Heart Structures with GPUs on Personal Computers. , 2021, , .		3
24	Not all Long-QTs Are The Same, Proarrhytmic Quantification with Action Potential Triangulation and Alternans. , 2021, , .		0
25	Rotor Localization and Phase Mapping of Cardiac Excitation Waves Using Deep Neural Networks. Frontiers in Physiology, 2021, 12, 782176.	1.3	7
26	Experimental validation of a variational data assimilation procedure for estimating space-dependent cardiac conductivities. Computer Methods in Applied Mechanics and Engineering, 2020, 358, 112615.	3.4	33
27	Accelerating simulations of cardiac electrical dynamics through a multiâ€GPU platform and an optimized data structure. Concurrency Computation Practice and Experience, 2020, 32, e5528.	1.4	8
28	Generation of Monophasic Action Potentials and Intermediate Forms. Biophysical Journal, 2020, 119, 460-469.	0.2	2
29	Data-Driven Uncertainty Quantification for Cardiac Electrophysiological Models: Impact of Physiological Variability on Action Potential and Spiral Wave Dynamics. Frontiers in Physiology, 2020, 11, 585400.	1.3	15
30	Fatal arrhythmias: Another reason why doctors remain cautious about chloroquine/hydroxychloroquine for treating COVID-19. Heart Rhythm, 2020, 17, 1445-1451.	0.3	25
31	High-Resolution Optical Measurement of Cardiac Restitution, Contraction, and Fibrillation Dynamics in Beating vs. Blebbistatin-Uncoupled Isolated Rabbit Hearts. Frontiers in Physiology, 2020, 11, 464.	1.3	47
32	Excitable dynamics in neural and cardiac systems. Communications in Nonlinear Science and Numerical Simulation, 2020, 86, 105275.	1.7	4
33	Spatiotemporal correlation uncovers characteristic lengths in cardiac tissue. Physical Review E, 2019, 100, 020201.	0.8	20
34	Theoretical Modeling and Experimental Detection of the Extracellular Phasic Impedance Modulation in Rabbit Hearts. Frontiers in Physiology, 2019, 10, 883.	1.3	2
35	Engineered Cardiac Pacemaker Nodes Created by TBX18 Gene Transfer Overcome Sourceâ€"Sink Mismatch. Advanced Science, 2019, 6, 1901099.	5.6	16
36	Real-time interactive simulations of large-scale systems on personal computers and cell phones: Toward patient-specific heart modeling and other applications. Science Advances, 2019, 5, eaav6019.	4.7	45

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37	Large-scale interactive numerical experiments of chaos, solitons and fractals in real time via GPU in a web browser. Chaos, Solitons and Fractals, 2019, 121, 6-29.	2.5	16
38	Simulating waves, chaos and synchronization with a microcontroller. Chaos, 2019, 29, 123104.	1.0	4
39	Probabilistic reachability for multi-parameter bifurcation analysis of cardiac alternans. Theoretical Computer Science, 2019, 765, 158-169.	0.5	5
40	A Comprehensive Comparison of GPU Implementations of Cardiac Electrophysiology Models. Lecture Notes in Computer Science, 2019, , 9-34.	1.0	6
41	Isosbestic Point in Optical Mapping; Theoretical and Experimental Determination with Di-4-ANBDQPQ Transmembrane Voltage Sensitive Dye. , 2019, 46, .		1
42	Competing Mechanisms of Stress-Assisted Diffusivity and Stretch-Activated Currents in Cardiac Electromechanics. Frontiers in Physiology, 2018, 9, 1714.	1.3	29
43	Discordant Alternans as a Mechanism for Initiation of Ventricular Fibrillation In Vitro. Journal of the American Heart Association, 2018, 7, e007898.	1.6	11
44	Dynamics of a human spiral wave. Physics Today, 2017, 70, 78-79.	0.3	8
45	Synchronization as a mechanism for low-energy anti-fibrillation pacing. Heart Rhythm, 2017, 14, 1254-1262.	0.3	22
46	Introduction to Focus Issue: Complex Cardiac Dynamics. Chaos, 2017, 27, .	1.0	17
47	Numerical sensitivity analysis of a variational data assimilation procedure for cardiac conductivities. Chaos, 2017, 27, 093930.	1.0	13
48	Mechanism for Amplitude Alternans in Electrocardiograms and the Initiation of Spatiotemporal Chaos. Physical Review Letters, 2017, 118, 168101.	2.9	42
49	Simultaneous Quantification of Spatially Discordant Alternans in Voltage and Intracellular Calcium in Langendorff-Perfused Rabbit Hearts and Inconsistencies with Models of Cardiac Action Potentials and Ca Transients. Frontiers in Physiology, 2017, 8, 819.	1.3	38
50	Efficient parameterization of cardiac action potential models using a genetic algorithm. Chaos, 2017, 27, 093922.	1.0	20
51	Numerical solutions of reaction-diffusion equations: Application to neural and cardiac models. American Journal of Physics, 2016, 84, 626-638.	0.3	6
52	Sharp Boundary Electrocardiac Simulations. SIAM Journal of Scientific Computing, 2016, 38, B100-B117.	1.3	5
53	Comparison of Detailed and Simplified Models of Human Atrial Myocytes to Recapitulate Patient Specific Properties. PLoS Computational Biology, 2016, 12, e1005060.	1.5	42
54	Implementation of Contraction to Electrophysiological Ventricular Myocyte Models, and Their Quantitative Characterization via Post-Extrasystolic Potentiation. PLoS ONE, 2015, 10, e0135699.	1.1	13

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55	Basis for the Induction of Tissue-Level Phase-2 Reentry as a Repolarization Disorder in the Brugada Syndrome. BioMed Research International, 2015, 2015, 1-12.	0.9	22
56	Spatio-temporal correlation of paced cardiac tissue. , 2014, , .		0
57	Mechanistic insights into hypothermic ventricular fibrillation: the role of temperature and tissue size. Europace, 2014, 16, 424-434.	0.7	36
58	Continuous-time control of alternans in long Purkinje fibers. Chaos, 2014, 24, 033124.	1.0	18
59	Subepicardial Action Potential Characteristics Are a Function of Depth and Activation Sequence in Isolated Rabbit Hearts. Circulation: Arrhythmia and Electrophysiology, 2013, 6, 809-817.	2.1	28
60	Electric-Field-Based Control Strategies for Cardiac Tissue. Biophysical Journal, 2013, 104, 153a-154a.	0.2	0
61	Effects of Pacing Site and Stimulation History on Alternans Dynamics and the Development of Complex Spatiotemporal Patterns in Cardiac Tissue. Frontiers in Physiology, 2013, 4, 71.	1.3	109
62	Shock-induced termination of reentrant cardiac arrhythmias: Comparing monophasic and biphasic shock protocols. Chaos, 2013, 23, 043119.	1.0	12
63	Role of temperature on nonlinear cardiac dynamics. Physical Review E, 2013, 87, 042717.	0.8	45
64	Mechanisms of ventricular arrhythmias: a dynamical systems-based perspective. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 302, H2451-H2463.	1.5	62
65	Contribution of the Purkinje network to wave propagation in the canine ventricle: insights from a combined electrophysiological-anatomical model. Nonlinear Dynamics, 2012, 68, 365-379.	2.7	15
66	Low-energy control of electrical turbulence in the heart. Nature, 2011, 475, 235-239.	13.7	287
67	Cardiac cell modelling: Observations from the heart of the cardiac physiome project. Progress in Biophysics and Molecular Biology, 2011, 104, 2-21.	1.4	139
68	Effects of boundaries and geometry on the spatial distribution of action potential duration in cardiac tissue. Journal of Theoretical Biology, 2011, 285, 164-176.	0.8	59
69	Model-based control of cardiac alternans in Purkinje fibers. Physical Review E, 2011, 84, 041927.	0.8	32
70	Teaching cardiac electrophysiology modeling to undergraduate students: laboratory exercises and GPU programming for the study of arrhythmias and spiral wave dynamics. American Journal of Physiology - Advances in Physiology Education, 2011, 35, 427-437.	0.8	20
71	Termination of Atrial Fibrillation Using Pulsed Low-Energy Far-Field Stimulation. Circulation, 2009, 120, 467-476.	1.6	152
72	Model-based control of cardiac alternans on a ring. Physical Review E, 2009, 80, 021932.	0.8	24

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73	Minimal model for human ventricular action potentials in tissue. Journal of Theoretical Biology, 2008, 253, 544-560.	0.8	332
74	Termination of equine atrial fibrillation by quinidine: An optical mapping study. Journal of Veterinary Cardiology, 2008, 10, 87-103.	0.3	23
75	Cardiac arrhythmia. Scholarpedia Journal, 2008, 3, 1665.	0.3	24
76	Models of cardiac cell. Scholarpedia Journal, 2008, 3, 1868.	0.3	115
77	Pulmonary vein reentryâ€"Properties and size matter: Insights from a computational analysis. Heart Rhythm, 2007, 4, 1553-1562.	0.3	83
78	A tale of two dogs: analyzing two models of canine ventricular electrophysiology. American Journal of Physiology - Heart and Circulatory Physiology, 2007, 292, H43-H55.	1.5	95
79	P3-24. Heart Rhythm, 2006, 3, S186.	0.3	1
80	Spectral Methods for Partial Differential Equations in Irregular Domains: The Spectral Smoothed Boundary Method. SIAM Journal of Scientific Computing, 2006, 28, 886-900.	1.3	101
81	2006 Visualization Challenge Winners. Science, 2006, 313, 1730-1735.	6.0	3
82	Modeling wave propagation in realistic heart geometries using the phase-field method. Chaos, 2005, 15, 013502.	1.0	125
83	Head-tail interactions in numerical simulations of reentry in a ring of cardiac tissue. Heart Rhythm, 2005, 2, 1038-1046.	0.3	6
84	Suppression of alternans and conduction blocks despite steep APD restitution: electrotonic, memory, and conduction velocity restitution effects. American Journal of Physiology - Heart and Circulatory Physiology, 2004, 286, H2332-H2341.	1.5	195
85	Real-time computer simulations of excitable media: java as a scientific language and as a wrapper for c and fortran programs. BioSystems, 2002, 64, 73-96.	0.9	28
86	Multiple mechanisms of spiral wave breakup in a model of cardiac electrical activity. Chaos, 2002, 12, 852-892.	1.0	542
87	Mechanisms for Discordant Alternans. Journal of Cardiovascular Electrophysiology, 2001, 12, 196-206.	0.8	306
88	Alternans and the onset of ventricular fibrillation. Physical Review E, 2000, 62, 4043-4048.	0.8	33
89	Memory in an Excitable Medium: A Mechanism for Spiral Wave Breakup in the Low-Excitability Limit. Physical Review Letters, 1999, 83, 3964-3967.	2.9	55
90	Spatiotemporal Control of Wave Instabilities in Cardiac Tissue. Physical Review Letters, 1999, 83, 456-459.	2.9	126

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91	Vortex dynamics in three-dimensional continuous myocardium with fiber rotation: Filament instability and fibrillation. Chaos, 1998, 8, 20-47.	1.0	777
92	Fiber-Rotation-Induced Vortex Turbulence in Thick Myocardium. Physical Review Letters, 1998, 81, 481-484.	2.9	81