Omer Berenfeld

List of Publications by Year in Descending Order

142 papers	9,459 citations	47 h-index	96 g-index
159 ext. papers	10,903 ext. citations	7.1 avg, IF	5.59 L-index

#	Paper	IF	Citations
142	Panoramic Endocardial Optical Mapping Demonstrates Serial Rotors Acceleration and Increasing Complexity of Activity During Onset of Cholinergic Atrial Fibrillation. *Journal of the American Heart Association*, **2021**, 10, e022300	6	0
141	Electrocardiographic Imaging for Atrial Fibrillation: A Perspective From Computer Models and Animal Experiments to Clinical Value. *Frontiers in Physiology*, **2021**, 12, 653013	4.6	2
140	Frequency and Phase Domains Methods for Mechanisms of Fibrillation **2021**, 243-257		
139	Short-wave infrared light imaging measures tissue moisture and distinguishes superficial from deep burns. *Wound Repair and Regeneration*, **2020**, 28, 185-193	3.6	1
138	Far-field contributions in multi-electrodes atrial recordings blur distinction between anatomical and functional reentries and may cause imaginary phase singularities - A computational study. *Computers in Biology and Medicine*, **2019**, 108, 276-287	7	7
137	Rotors in Animal Models of Atrial Fibrillation **2019**, 330-342		1
136	Phase Mapping of Human Atrial Fibrillation **2019**, 652-659		
135	Mechanisms by Which Ranolazine Terminates Paroxysmal but Not Persistent Atrial Fibrillation. *Circulation: Arrhythmia and Electrophysiology*, **2019**, 12, e005557	6.4	8
134	Optical Mapping. *Cardiac Electrophysiology Clinics*, **2019**, 11, 495-510	1.4	9
133	Bimodal classification algorithm for atrial fibrillation detection from m-health ECG recordings. *Computers in Biology and Medicine*, **2019**, 104, 310-318	7	9
132	Causality analysis of leading singular value decomposition modes identifies rotor as the dominant driving normal mode in fibrillation. *Chaos*, **2018**, 28, 013128	3.3	1
131	Factors affecting basket catheter detection of real and phantom rotors in the atria: A computational study. *PLoS Computational Biology*, **2018**, 14, e1006017	5	25
130	Computational Approaches for Accurate Rotor Localization in the Human Atria **2018**, 335-344		1
129	To the Editor- Concerns in multi-electrode and phase mapping of AF. *Heart Rhythm*, **2018**, 15, e3-e4	6.7	3
128	AF Ablation Guided by Spatiotemporal Electrogram Dispersion Without Pulmonary Vein Isolation: A Wholly Patient-Tailored Approach. *Journal of the American College of Cardiology*, **2017**, 69, 303-321	15.1	97
127	Highest dominant frequency and rotor positions are robust markers of driver location during noninvasive mapping of atrial fibrillation: A computational study. *Heart Rhythm*, **2017**, 14, 1224-1233	6.7	14
126	Minimal configuration of body surface potential mapping for discrimination of left versus right dominant frequencies during atrial fibrillation. *PACE - Pacing and Clinical Electrophysiology*, **2017**, 40, 940-946	1.6	9

125	Technical Considerations on Phase Mapping for Identification of Atrial Reentrant Activity in Direct- and Inverse-Computed Electrograms. *Circulation: Arrhythmia and Electrophysiology*, **2017**, 10,	6.4	25
124	Eplerenone Reduces Atrial Fibrillation Burden Without Preventing Atrial Electrical Remodeling. *Journal of the American College of Cardiology*, **2017**, 70, 2893-2905	15.1	30
123	Noninvasive Estimation of Epicardial Dominant High-Frequency Regions During Atrial Fibrillation. *Journal of Cardiovascular Electrophysiology*, **2016**, 27, 435-42	2.7	23
122	Presence and stability of rotors in atrial fibrillation: evidence and therapeutic implications. *Cardiovascular Research*, **2016**, 109, 480-92	9.9	37
121	Mechanisms of Atrial Fibrillation: Rotors, Ionic Determinants, and Excitation Frequency. *Heart Failure Clinics*, **2016**, 12, 167-78	3.3	10
120	Mechanistic Approaches to Detect, Target, and Ablate the Drivers of Atrial Fibrillation. *Circulation: Arrhythmia and Electrophysiology*, **2016**, 9, e002481	6.4	29
119	The Major Role of in Mechanisms of Rotor Drift in the Atria: A Computational Study. *Clinical Medicine Insights: Cardiology*, **2016**, 10, 71-79	3.2	4
118	Galectin-3 Regulates Atrial Fibrillation Remodeling and Predicts Catheter Ablation Outcomes. *JACC Basic To Translational Science*, **2016**, 1, 143-154	8.7	70
117	Identification of Dominant Excitation Patterns and Sources of Atrial Fibrillation by Causality Analysis. *Annals of Biomedical Engineering*, **2016**, 44, 2364-2376	4.7	16
116	Spectral analysis-based risk score enables early prediction of mortality and cerebral performance in patients undergoing therapeutic hypothermia for ventricular fibrillation and comatose status. *International Journal of Cardiology*, **2015**, 186, 250-8	3.2	6
115	Cell-selective arrhythmia ablation for photomodulation of heart rhythm. *Science Translational Medicine*, **2015**, 7, 311ra172	17.5	16
114	Letter by Jalife et al Regarding Article, "Quantitative Analysis of Localized Sources Identified by Focal Impulse and Rotor Modulation Mapping in Atrial Fibrillation". *Circulation: Arrhythmia and Electrophysiology*, **2015**, 8, 1296-8	6.4	26
113	Ventricular Tachycardia and Early Fibrillation in Patients With Brugada Syndrome and Ischemic Cardiomyopathy Show Predictable Frequency-Phase Properties on the Precordial ECG Consistent With the Respective Arrhythmogenic Substrate. *Circulation: Arrhythmia and Electrophysiology*, **2015**, 8, 1133-43	6.4	7
112	A 120nW 8b Sub-ranging SAR ADC with Signal-Dependent Charge Recycling for Biomedical Applications **2015**, 2015, C60-C61		11
111	Atrial sources identification by causality analysis during atrial fibrillation. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2015**, 2015, 3783-6	0.9	2
110	Mechanistic Comparison of "Nearly Missed" Versus "On-Target" Rotor Ablation. *JACC: Clinical Electrophysiology*, **2015**, 1, 256-269	4.6	4
109	Are multi-electrode arrays able to differentiate anatomical from functional reentries in an excitable sheet? **2015**,		1
108	. *IEEE Journal of Solid-State Circuits*, **2015**, 50, 375-390	5.5	102

107	Frontiers in Non-invasive Cardiac Mapping: Rotors in Atrial Fibrillation-Body Surface Frequency-Phase Mapping. *Cardiac Electrophysiology Clinics*, **2015**, 7, 59-69	1.4	6
106	Frontiers in noninvasive cardiac mapping rotors in atrial fibrillation-body surface frequency-phase mapping. *Cardiac Electrophysiology Clinics*, **2015**, 7, 59-69	1.4	
105	Fast, accurate, and fully automatic segmentation of the right ventricle in short-axis cardiac MRI. *Computerized Medical Imaging and Graphics*, **2014**, 38, 190-201	7.6	47
104	Mechanisms of atrial fibrillation: rotors, ionic determinants, and excitation frequency. *Cardiology Clinics*, **2014**, 32, 495-506	2.5	18
103	Dominant frequency increase rate predicts transition from paroxysmal to long-term persistent atrial fibrillation. *Circulation*, **2014**, 129, 1472-82	16.7	112
102	**2014**,		26
101	Attraction of rotors to the pulmonary veins in paroxysmal atrial fibrillation: a modeling study. *Biophysical Journal*, **2014**, 106, 1811-21	2.9	26
100	Body surface localization of left and right atrial high-frequency rotors in atrial fibrillation patients: a clinical-computational study. *Heart Rhythm*, **2014**, 11, 1584-91	6.7	87
99	Dominant Frequency and the Mechanisms of Initiation and Maintenance of Atrial Fibrillation **2014**, 419-432		1
98	Surface and intramural reentrant patterns during atrial fibrillation in the sheep. *Methods of Information in Medicine*, **2014**, 53, 314-9	1.5	4
97	Effects of fibrosis morphology on reentrant ventricular tachycardia inducibility and simulation fidelity in patient-derived models. *Clinical Medicine Insights: Cardiology*, **2014**, 8, 1-13	3.2	15
96	Accurate reconstruction of 3D cardiac geometry from coarsely-sliced MRI. *Computer Methods and Programs in Biomedicine*, **2014**, 113, 483-93	6.9	8
95	The ionic bases of the action potential in isolated mouse cardiac Purkinje cell. *Heart Rhythm*, **2013**, 10, 80-7	6.7	33
94	KCNJ2 mutation in short QT syndrome 3 results in atrial fibrillation and ventricular proarrhythmia. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 4291-6	11.5	108
93	Noninvasive localization of maximal frequency sites of atrial fibrillation by body surface potential mapping. *Circulation: Arrhythmia and Electrophysiology*, **2013**, 6, 294-301	6.4	83
92	Reduced Ventricular Arrhythmogeneity and Increased Electrical Complexity in Normal Exercised Rats. *PLoS ONE*, **2013**, 8, e66658	3.7	8
91	Automated segmentation and reconstruction of patient-specific cardiac anatomy and pathology fromin vivoMRI*. *Measurement Science and Technology*, **2012**, 23, 125405	2	12
90	Spatial gradients in action potential duration created by regional magnetofection of hERG are a substrate for wavebreak and turbulent propagation in cardiomyocyte monolayers. *Journal of Physiology*, **2012**, 590, 6363-79	3.9	23

89	Mapping of Rotors in Atrial Fibrillation: From Animal Models to Humans **2012**, 108-118		
88	Ectopic and reentrant activation patterns in the posterior left atrium during stretch-related atrial fibrillation. *Progress in Biophysics and Molecular Biology*, **2012**, 110, 269-77	4.7	24
87	Long-term frequency gradients during persistent atrial fibrillation in sheep are associated with stable sources in the left atrium. *Circulation: Arrhythmia and Electrophysiology*, **2012**, 5, 1160-7	6.4	58
86	Chloroquine terminates stretch-induced atrial fibrillation more effectively than flecainide in the sheep heart. *Circulation: Arrhythmia and Electrophysiology*, **2012**, 5, 561-70	6.4	33
85	Heterogeneous atrial wall thickness and stretch promote scroll waves anchoring during atrial fibrillation. *Cardiovascular Research*, **2012**, 94, 48-57	9.9	89
84	High-rate pacing-induced atrial fibrillation effectively reveals properties of spontaneously occurring paroxysmal atrial fibrillation in humans. *Europace*, **2012**, 14, 1560-6	3.9	20
83	Time- and frequency-domain analyses of atrial fibrillation activation rate: the optical mapping reference. *Heart Rhythm*, **2011**, 8, 1758-65	6.7	28
82	Relative contribution of changes in sodium current versus intercellular coupling on reentry initiation in 2-dimensional preparations of plakophilin-2-deficient cardiac cells. *Heart Rhythm*, **2011**, 8, 1740-8	6.7	20
81	Mechanisms of fractionated electrograms formation in the posterior left atrium during paroxysmal atrial fibrillation in humans. *Journal of the American College of Cardiology*, **2011**, 57, 1081-92	15.1	89
80	High-resolution endocardial and epicardial optical mapping in a sheep model of stretch-induced atrial fibrillation. *Journal of Visualized Experiments*, **2011**,	1.6	11
79	Targeting atrioventricular differences in ion channel properties for terminating acute atrial fibrillation in pigs. *Cardiovascular Research*, **2011**, 89, 843-51	9.9	29
78	A major role for HERG in determining frequency of reentry in neonatal rat ventricular myocyte monolayer. *Circulation Research*, **2010**, 107, 1503-11	15.7	41
77	Letter by Berenfeld and Jalife regarding article "dominant frequency of atrial fibrillation correlates poorly with atrial fibrillation cycle length". *Circulation: Arrhythmia and Electrophysiology*, **2010**, 3, e1; author reply e2-3	6.4	3
76	Specific residues of the cytoplasmic domains of cardiac inward rectifier potassium channels are effective antifibrillatory targets. *FASEB Journal*, **2010**, 24, 4302-12	0.9	46
75	Spatiotemporal and spectral characteristics of atrial fibrillation waves across atrial walls and remodeling. *Heart Rhythm*, **2010**, 7, 518-9	6.7	
74	Mechanisms underlying the antifibrillatory action of hyperkalemia in Guinea pig hearts. *Biophysical Journal*, **2010**, 98, 2091-101	2.9	22
73	Toward discerning the mechanisms of atrial fibrillation from surface electrocardiogram and spectral analysis. *Journal of Electrocardiology*, **2010**, 43, 509-14	1.4	7
72	Ionic and substrate mechanism of atrial fibrillation: rotors and the exitaci□ frequency approach. *Archivos De Cardiologia De Mexico*, **2010**, 80, 301-14	0.2	7

71	Real-time dominant frequency mapping and ablation of dominant frequency sites in atrial fibrillation with left-to-right frequency gradients predicts long-term maintenance of sinus rhythm. *Heart Rhythm*, **2009**, 6, 33-40	6.7	244
70	Left versus right atrial difference in dominant frequency, K(+) channel transcripts, and fibrosis in patients developing atrial fibrillation after cardiac surgery. *Heart Rhythm*, **2009**, 6, 1415-22	6.7	70
69	Reentry in Cardioversion: OWe can see it from here...O*Heart Rhythm*, **2009**, 6, 98-9	6.7	
68	Complex fractionated atrial electrograms: properties of time-domain versus frequency-domain methods. *Heart Rhythm*, **2009**, 6, 1475-82	6.7	24
67	Mechanisms of stretch-induced atrial fibrillation in the presence and the absence of adrenocholinergic stimulation: interplay between rotors and focal discharges. *Heart Rhythm*, **2009**, 6, 1009-17	6.7	55
66	Turning on/off the dome in phase 2 reentry: the switching wave hypothesis. *Heart Rhythm*, **2009**, 6, 823-4	6.7	
65	Mechanisms of Atrial Fibrillation in Animals and Humans **2009**, 61-74		
64	**2009**,		22
63	Electrotonic myofibroblast-to-myocyte coupling increases propensity to reentrant arrhythmias in two-dimensional cardiac monolayers. *Biophysical Journal*, **2008**, 95, 4469-80	2.9	175
62	Reentry in an accessory atrioventricular pathway as a trigger for atrial fibrillation initiation in manifest Wolff-Parkinson-White syndrome: a matter of reflection?. *Heart Rhythm*, **2008**, 5, 1238-47	6.7	13
61	Rotor meandering contributes to irregularity in electrograms during atrial fibrillation. *Heart Rhythm* , **2008**, 5, 846-54	6.7	136
60	Atrial septopulmonary bundle of the posterior left atrium provides a substrate for atrial fibrillation initiation in a model of vagally mediated pulmonary vein tachycardia of the structurally normal heart. *Circulation: Arrhythmia and Electrophysiology*, **2008**, 1, 175-83	6.4	60
59	Dominant Frequency Mapping to Assess the Consequences of Remodeling in the Mechanism of Atrial Fibrillation **2008**, 77-100		1
58	Arrhythmogenic mechanisms in a mouse model of catecholaminergic polymorphic ventricular tachycardia. *Circulation Research*, **2007**, 101, 1039-48	15.7	215
57	Endoscopic fluorescence mapping of the left atrium: a novel experimental approach for high resolution endocardial mapping in the intact heart. *Heart Rhythm*, **2007**, 4, 916-24	6.7	20
56	Up-regulation of the inward rectifier K+ current (I K1) in the mouse heart accelerates and stabilizes rotors. *Journal of Physiology*, **2007**, 578, 315-26	3.9	113
55	Universal scaling law of electrical turbulence in the mammalian heart. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 20985-9	11.5	39
54	Action potential alternans in LQT3 syndrome: a simulation study. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, **2007**, 2007, 640-3		1

53	Spatial distribution of fibrosis governs fibrillation wave dynamics in the posterior left atrium during heart failure. *Circulation Research*, **2007**, 101, 839-47	15.7	253
52	Quantifying activation frequency in atrial fibrillation to establish underlying mechanisms and ablation guidance. *Heart Rhythm*, **2007**, 4, 1225-34	6.7	22
51	Overexpression of the inward rectifier K+ current (IK1) accelerates and stabilizes rotors. *FASEB Journal*, **2007**, 21, A1157	0.9	1
50	Interdependence of virtual electrode polarization and conduction velocity during premature stimulation. *Journal of Electrocardiology*, **2006**, 39, S13-8	1.4	5
49	Activation of inward rectifier potassium channels accelerates atrial fibrillation in humans: evidence for a reentrant mechanism. *Circulation*, **2006**, 114, 2434-42	16.7	219
48	Mechanisms of wave fractionation at boundaries of high-frequency excitation in the posterior left atrium of the isolated sheep heart during atrial fibrillation. *Circulation*, **2006**, 113, 626-33	16.7	339
47	Ionic determinants of functional reentry in a 2-D model of human atrial cells during simulated chronic atrial fibrillation. *Biophysical Journal*, **2005**, 88, 3806-21	2.9	190
46	Effect of remodelling, stretch and ischaemia on ventricular fibrillation frequency and dynamics in a heart failure model. *Cardiovascular Research*, **2005**, 65, 158-66	9.9	37
45	Mechanisms of atrial fibrillation termination by pure sodium channel blockade in an ionically-realistic mathematical model. *Circulation Research*, **2005**, 96, e35-47	15.7	107
44	A novel form of short QT syndrome (SQT3) is caused by a mutation in the KCNJ2 gene. *Circulation Research*, **2005**, 96, 800-7	15.7	495
43	Spectral analysis identifies sites of high-frequency activity maintaining atrial fibrillation in humans. *Circulation*, **2005**, 112, 789-97	16.7	659
42	Altered right atrial excitation and propagation in connexin40 knockout mice. *Circulation*, **2005**, 112, 2245-53	16.7	78
41	From mouse to whale: a universal scaling relation for the PR Interval of the electrocardiogram of mammals. *Circulation*, **2004**, 110, 2802-8	16.7	79
40	The muscular network of the sheep right atrium and frequency-dependent breakdown of wave propagation. *The Anatomical Record*, **2004**, 280, 1053-61		11
39	Molecular mechanisms and global dynamics of fibrillation: an integrative approach to the underlying basis of vortex-like reentry. *Journal of Theoretical Biology*, **2004**, 230, 475-87	2.3	34
38	Mechanisms of Maintenance of Atrial Fibrillation **2004**, 363-374		
37	Theory of Reentry **2004**, 317-326		3
36	EQUILIBRATION OF SCROLL WAVE FILAMENTS IN THE VENTRICULAR WALL AND THE MINIMAL PRINCIPLE. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2003**, 13, 3723-3731	2	2

35	Cholinergic atrial fibrillation: I(K,ACh) gradients determine unequal left/right atrial frequencies and rotor dynamics. *Cardiovascular Research*, **2003**, 59, 863-73	9.9	137
34	Toward an understanding of the molecular mechanisms of ventricular fibrillation. *Journal of Interventional Cardiac Electrophysiology*, **2003**, 9, 119-29	2.4	12
33	Blockade of the inward rectifying potassium current terminates ventricular fibrillation in the guinea pig heart. *Journal of Cardiovascular Electrophysiology*, **2003**, 14, 621-31	2.7	116
32	Synthesis of voltage-sensitive fluorescence signals from three-dimensional myocardial activation patterns. *Biophysical Journal*, **2003**, 85, 2673-83	2.9	71
31	Wavebreak formation during ventricular fibrillation in the isolated, regionally ischemic pig heart. *Circulation Research*, **2003**, 92, 546-53	15.7	92
30	Intra-atrial pressure increases rate and organization of waves emanating from the superior pulmonary veins during atrial fibrillation. *Circulation*, **2003**, 108, 668-71	16.7	268
29	Minimal principle for rotor filaments. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 8015-8	11.5	71
28	Frequency-dependent breakdown of wave propagation into fibrillatory conduction across the pectinate muscle network in the isolated sheep right atrium. *Circulation Research*, **2002**, 90, 1173-80	15.7	165
27	Mother rotors and fibrillatory conduction: a mechanism of atrial fibrillation. *Cardiovascular Research* , **2002**, 54, 204-16	9.9	397
26	Ionic Channels and Fibrillation. *Basic Science for the Cardiologist*, **2002**, 335-359		
25	Left-to-right gradient of atrial frequencies during acute atrial fibrillation in the isolated sheep heart. *Circulation*, **2001**, 103, 2631-6	16.7	303
24	Rectification of the background potassium current: a determinant of rotor dynamics in ventricular fibrillation. *Circulation Research*, **2001**, 89, 1216-23	15.7	251
23	Shaping of a scroll wave filament by cardiac fibers. *Physical Review E*, **2001**, 63, 061901	2.4	26
22	Spatially distributed dominant excitation frequencies reveal hidden organization in atrial fibrillation in the Langendorff-perfused sheep heart. *Journal of Cardiovascular Electrophysiology*, **2000**, 11, 869-79	2.7	139
21	Dynamics of wavelets and their role in atrial fibrillation in the isolated sheep heart. *Cardiovascular Research*, **2000**, 48, 220-32	9.9	87
20	Predicting filament drift in twisted anisotropy. *Physical Review E*, **2000**, 61, 1845-50	2.4	21
19	Distribution of excitation frequencies on the epicardial and endocardial surfaces of fibrillating ventricular wall of the sheep heart. *Circulation Research*, **2000**, 86, 408-17	15.7	205
18	High-frequency periodic sources underlie ventricular fibrillation in the isolated rabbit heart. *Circulation Research*, **2000**, 86, 86-93	15.7	149

17	Stable microreentrant sources as a mechanism of atrial fibrillation in the isolated sheep heart. *Circulation*, **2000**, 101, 194-9	16.7	584
16	Dynamics of intramural scroll waves in three-dimensional continuous myocardium with rotational anisotropy. *Journal of Theoretical Biology*, **1999**, 199, 383-94	2.3	81
15	Spatiotemporal periodicity during atrial fibrillation in the isolated sheep heart. *Circulation*, **1998**, 98, 1236-48	16.7	393
14	Purkinje-muscle reentry as a mechanism of polymorphic ventricular arrhythmias in a 3-dimensional model of the ventricles. *Circulation Research*, **1998**, 82, 1063-77	15.7	229
13	Simulation of cardiac activity and the ECG using a heart model with a reaction-diffusion action potential. *Medical Engineering and Physics*, **1996**, 18, 615-25	2.4	22
12	Modeling of the heart© ventricular conduction system using fractal geometry: spectral analysis of the QRS complex. *Annals of Biomedical Engineering*, **1993**, 21, 125-34	4.7	7
11	Simulation of high-resolution QRS complex using a ventricular model with a fractal conduction system. Effects of ischemia on high-frequency QRS potentials. *Circulation Research*, **1991**, 68, 1751-60	15.7	99
10	Inheritable Arrhythmogenic Diseases276-315		1
9	Ion Channel Regulation72-91		1
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