Albert Hudspeth

List of Publications by Year
in descending order

123 papers	12,378 citations	31976 53 h-index	24982 109 g-index
136 all docs	136 docs citations	136 times ranked	4353 citing authors

#	Article	IF	Citations
1	Role of YAP in early ectodermal specification and a Huntington's Disease model of human neurulation. ELife, 2022, 11, .	6.0	8
2	Development of an improved inhibitor of Lats kinases to promote regeneration of mammalian organs. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	5
3	Small-molecule inhibition of Lats kinases may promote Yap-dependent proliferation in postmitotic mammalian tissues. Nature Communications, 2021, 12, 3100.	12.8	76
4	Rapid mechanical stimulation of inner-ear hair cells by photonic pressure. ELife, 2021, 10, .	6.0	6
5	Measurement of hindered diffusion in complex geometries for high-speed studies of single-molecule forces. Scientific Reports, 2021, 11, 2196.	3.3	3
6	Fast recovery of disrupted tip links induced by mechanical displacement of hair bundles. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 30722-30727.	7.1	5
7	Volterra-series approach to stochastic nonlinear dynamics: Linear response of the Van der Pol oscillator driven by white noise. Physical Review E, 2020, 102, 032209.	2.1	10
8	Mechanochemical symmetry breaking during morphogenesis of lateral-line sensory organs. Nature Physics, 2020, 16, 949-957.	16.7	16
9	Notch-Mediated Determination of Hair-Bundle Polarity in Mechanosensory Hair Cells of the Zebrafish Lateral Line. Current Biology, 2019, 29, 3579-3587.e7.	3.9	30
10	Bilateral Spontaneous Otoacoustic Emissions Show Coupling between Active Oscillators in the Two Ears. Biophysical Journal, 2019, 116, 2023-2034.	0.5	11
11	Elasticity of individual protocadherin 15 molecules implicates tip links as the gating springs for hearing. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 11048-11056.	7.1	55
12	Volterra-series approach to stochastic nonlinear dynamics: The Duffing oscillator driven by white noise. Physical Review E, 2019, 99, 042204.	2.1	7
13	Thermal Excitation of the Mechanotransduction Apparatus of Hair Cells. Neuron, 2018, 97, 586-595.e4.	8.1	14
14	Signal detection by active, noisy hair bundles. AIP Conference Proceedings, 2018, , .	0.4	0
15	Homeostatic enhancement of active mechanotransduction. AIP Conference Proceedings, 2018, , .	0.4	0
16	Stimulation of hair cells with ultraviolet light. AIP Conference Proceedings, 2018, , .	0.4	0
17	Fluctuation theory in space and time: White noise in reaction-diffusion models of morphogenesis. Physical Review E, 2018, 98, .	2.1	1
18	Synchronization of spontaneous otoacoustic emissions in the tokay gecko. AIP Conference Proceedings, 2018, , .	0.4	0

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19	A New Twist on Tip Links. Neuron, 2018, 99, 423-425.	8.1	3
20	Three-dimensional Organotypic Cultures of Vestibular and Auditory Sensory Organs. Journal of Visualized Experiments, 2018, , .	0.3	2
21	Connectomics of the zebrafish's lateral-line neuromast reveals wiring and miswiring in a simple microcircuit. ELife, 2018, 7, .	6.0	40
22	Homeostatic enhancement of sensory transduction. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E6794-E6803.	7.1	20
23	An In Toto Approach to Dissecting Cellular Interactions in Complex Tissues. Developmental Cell, 2017, 43, 530-540.e4.	7.0	20
24	Daple coordinates organ-wide and cell-intrinsic polarity to pattern inner-ear hair bundles. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E11170-E11179.	7.1	34
25	Chemomechanical regulation of myosin Ic cross-bridges: Deducing the elastic properties of an ensemble from single-molecule mechanisms. PLoS Computational Biology, 2017, 13, e1005566.	3.2	5
26	Elastic force restricts growth of the murine utricle. ELife, 2017, 6, .	6.0	31
27	Direct mechanical stimulation of tip links in hair cells through DNA tethers. ELife, 2016, 5, .	6.0	26
28	The Auditory-Brainstem Response to Continuous, Non-repetitive Speech Is Modulated by the Speech Envelope and Reflects Speech Processing. Frontiers in Computational Neuroscience, 2016, 10, 47.	2.1	10
29	Identification of Bifurcations from Observations of Noisy Biological Oscillators. Biophysical Journal, 2016, 111, 798-812.	0.5	28
30	NOVA2-mediated RNA regulation is required for axonal pathfinding during development. ELife, 2016, 5, .	6.0	90
31	Micromechanics of hearing. AIP Conference Proceedings, 2015, , .	0.4	0
32	Otoacoustic emission through waves on Reissnerâ€™s membrane. AIP Conference Proceedings, 2015, , .	0.4	0
33	Characterization of active hair-bundle motility by a mechanical-load clamp. AIP Conference Proceedings, 2015, , .	0.4	1
34	Vibrational modes and damping in the cochlear partition. AIP Conference Proceedings, 2015, , .	0.4	2
35	The steady-state response of the cerebral cortex to the beat of music reflects both the comprehension of music and attention. Frontiers in Human Neuroscience, 2015, 9, 436.	2.0	30
36	The Energetic Ear. Daedalus, 2015, 144, 42-52.	1.8	1

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37	Control of a hair bundleâ€™s mechanosensory function by its mechanical load. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E1000-9.	7.1	50
38	SoxC transcription factors are essential for the development of the inner ear. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 14066-14071.	7.1	50
39	Reactionâ€“diffusion model of hair-bundle morphogenesis. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 15444-15449.	7.1	24
40	Integrating the active process of hair cells with cochlear function. Nature Reviews Neuroscience, 2014, 15, 600-614.	10.2	269
41	The physics of hearing: fluid mechanics and the active process of the inner ear. Reports on Progress in Physics, 2014, 77, 076601.	20.1	108
42	SnapShot: Auditory Transduction. Neuron, 2013, 80, 536-536.e1.	8.1	8
43	Effects of cochlear loading on the motility of active outer hair cells. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 5474-5479.	7.1	53
44	Frequency decoding of periodically timed action potentials through distinct activity patterns in a random neural network. New Journal of Physics, 2012, 14, 113022.	2.9	1
45	Contribution of active hair-bundle motility to nonlinear amplification in the mammalian cochlea. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 21076-21080.	7.1	27
46	The diverse effects of mechanical loading on active hair bundles. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 1943-1948.	7.1	53
47	Rearrangements between differentiating hair cells coordinate planar polarity and the establishment of mirror symmetry in lateral-line neuromasts. Biology Open, 2012, 1, 498-505.	1.2	40
48	Waves on Reissner's Membrane: A Mechanism for the Propagation of Otoacoustic Emissions from the Cochlea. Cell Reports, 2012, 1, 374-384.	6.4	24
49	Relative stereociliary motion in a hair bundle opposes amplification at distortion frequencies. Journal of Physiology, 2012, 590, 301-308.	2.9	10
50	Discrimination of Low-Frequency Tones Employs Temporal Fine Structure. PLoS ONE, 2012, 7, e45579.	2.5	7
51	Divalent Counterions Tether Membrane-Bound Carbohydrates To Promote the Cohesion of Auditory Hair Bundles. Biophysical Journal, 2011, 101, 1316-1325.	0.5	7
52	Forces between clustered stereocilia minimize friction in the ear on a subnanometre scale. Nature, 2011, 474, 376-379.	27.8	58
53	Unidirectional Amplification as a Mechanism for Low-Frequency Hearing in Mammals. , 2011, , .		0
54	Unidirectional Mechanical Amplification as a Design Principle for an Active Microphone. Physical Review Letters, 2011, 106, 158701.	7.8	11

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55	Damping Properties of the Hair Bundle. , 2011, , .		0
56	High-Frequency Power Gain in the Mammalian Cochlea. , 2011, , .		0
57	Interactions between Hair Cells Shape Spontaneous Otoacoustic Emissions in a Model of the Tokay Gecko's Cochlea. PLoS ONE, 2010, 5, e11116.	2.5	35
58	Dual Contribution to Amplification in the Mammalian Inner Ear. Physical Review Letters, 2010, 105, 118102.	7.8	18
59	Highly Specific Alternative Splicing of Transcripts Encoding BK Channels in the Chicken's Cochlea Is a Minor Determinant of the Tonotopic Gradient. Molecular and Cellular Biology, 2010, 30, 3646-3660.	2.3	43
60	A Critique of the Critical Cochlea: Hopfâ€"a Bifurcationâ€"Is Better Than None. Journal of Neurophysiology, 2010, 104, 1219-1229.	1.8	108
61	A ratchet mechanism for amplification in low-frequency mammalian hearing. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 4973-4978.	7.1	40
62	The remarkable cochlear amplifier. Hearing Research, 2010, 266, 1-17.	2.0	208
63	Efferent Control of the Electrical and Mechanical Properties of Hair Cells in the Bullfrog's Sacculus. PLoS ONE, 2010, 5, e13777.	2.5	25
64	Activity-independent specification of synaptic targets in the posterior lateral line of the larval zebrafish. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 21948-21953.	7.1	20
65	Three-dimensional Architecture of Hair-bundle Linkages Revealed by Electron-microscopic Tomography. JARO - Journal of the Association for Research in Otolaryngology, 2008, 9, 215-224.	1.8	24
66	Making an Effort to Listen: Mechanical Amplification in the Ear. Neuron, 2008, 59, 530-545.	8.1	355
67	Specificity of Afferent Synapses onto Plane-Polarized Hair Cells in the Posterior Lateral Line of the Zebrafish. Journal of Neuroscience, 2008, 28, 8442-8453.	3.6	95
68	Coherent motion of stereocilia assures the concerted gating of hair-cell transduction channels. Nature Neuroscience, 2007, 10, 87-92.	14.8	94
69	A two-step mechanism underlies the planar polarization of regenerating sensory hair cells. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 18615-18620.	7.1	164
70	Ca2+ currentâ€"driven nonlinear amplification by the mammalian cochlea in vitro. Nature Neuroscience, 2005, 8, 149-155.	14.8	205
71	Adaptive shift in the domain of negative stiffness during spontaneous oscillation by hair bundles from the internal ear. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 16996-17001.	7.1	47
72	How the ear's works work: mechanoelectrical transduction and amplification by hair cells. Comptes Rendus - Biologies, 2005, 328, 155-162.	0.2	87

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73	Mechanical Responses of the Organ of Corti to Acoustic and Electrical Stimulation In Vitro. Biophysical Journal, 2005, 89, 4382-4395.	0.5	71
74	Hair-bundle movements elicited by transepithelial electrical stimulation of hair cells in the sacculus of the bullfrog. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 958-963.	7.1	81
75	Spontaneous Oscillation by Hair Bundles of the Bullfrog's Sacculus. Journal of Neuroscience, 2003, 23, 4533-4548.	3.6	263
76	THE CONTRIBUTION OF TRANSDUCTION CHANNELS AND ADAPTATION MOTORS TO THE HAIR CELLâ€™S ACTIVE PROCESS. , 2003, , .		2
77	Comparison of a hair bundle's spontaneous oscillations with its response to mechanical stimulation reveals the underlying active process. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 14380-14385.	7.1	212
78	Compressive nonlinearity in the hair bundle's active response to mechanical stimulation. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 14386-14391.	7.1	172
79	How the ear's works work: mechanoelectrical transduction and amplification by hair cells of the internal ear. Harvey Lectures, 2001, 97, 41-54.	0.2	3
80	Sensory systems. Current Opinion in Neurobiology, 2000, 10, 631-641.	4.2	31
81	INTRODUCTION -- Auditory neuroscience: Development, transduction, and integration. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 11690-11691.	7.1	15
82	Negative hair-bundle stiffness betrays a mechanism for mechanical amplification by the hair cell. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 12026-12031.	7.1	241
83	Putting ion channels to work: Mechanoelectrical transduction, adaptation, and amplification by hair cells. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 11765-11772.	7.1	243
84	Hearing and Deafness. Neurobiology of Disease, 2000, 7, 511-514.	4.4	3
85	Essential Nonlinearities in Hearing. Physical Review Letters, 2000, 84, 5232-5235.	7.8	340
86	Active hair-bundle movements can amplify a hair cellâ€™s response to oscillatory mechanical stimuli. Proceedings of the National Academy of Sciences of the United States of America, 1999, 96, 14306-14311.	7.1	296
87	A model for amplification of hair-bundle motion by cyclical binding of Ca ²⁺ to mechanoelectrical-transduction channels. Proceedings of the National Academy of Sciences of the United States of America, 1998, 95, 15321-15326.	7.1	214
88	Plasma Membrane Ca²⁺-ATPase Extrudes Ca²⁺from Hair Cell Stereocilia. Journal of Neuroscience, 1998, 18, 610-624.	3.6	212
89	Regulation of Free Ca²⁺Concentration in Hair-Cell Stereocilia. Journal of Neuroscience, 1998, 18, 6300-6318.	3.6	127
90	Effects of extracellular Ca ²⁺ concentration on hair-bundle stiffness and gating-spring integrity in hairâ€‰cells. Proceedings of the National Academy of Sciences of the United States of America, 1997, 94, 11923-11928.	7.1	78

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91	How Hearing Happens. Neuron, 1997, 19, 947-950.	8.1	212
92	Distribution of Ca2+-Activated K+ Channel Isoforms along the Tonotopic Gradient of the Chicken's Cochlea. Neuron, 1997, 19, 1061-1075.	8.1	202
93	Hair cell-specific splicing of mRNA for the Â1D subunit of voltage-gated Ca2+ channels in the chicken's cochlea. Proceedings of the National Academy of Sciences of the United States of America, 1997, 94, 14889-14893.	7.1	68
94	Rapid, Active Hair Bundle Movements in Hair Cells from the Bullfrogâ€™s Sacculus. Journal of Neuroscience, 1996, 16, 5629-5643.	3.6	162
95	The entry and clearance of Ca2+ at individual presynaptic active zones of hair cells from the bullfrog's sacculus.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 9527-9532.	7.1	51
96	Confocal-microscopic visualization of membrane addition during synaptic exocytosis at presynaptic active zones of hair cells. Cold Spring Harbor Symposia on Quantitative Biology, 1996, 61, 303-7.	1.1	1
97	Modeling the active process of the cochlea: phase relations, amplification, and spontaneous oscillation. Biophysical Journal, 1995, 69, 138-147.	0.5	46
98	Gating-Spring Models of Mechanoelectrical Transduction by Hair Cells of the Internal Ear. Annual Review of Biophysics and Biomolecular Structure, 1995, 24, 59-83.	18.3	139
99	Pulling springs to tune transduction: Adaptation by hair cells. Neuron, 1994, 12, 1-9.	8.1	322
100	Auditory illusions and the single hair cell. Nature, 1993, 364, 527-529.	27.8	122
101	Identification of a 120 kd hair-bundle myosin located near stereociliary tips. Neuron, 1993, 11, 581-594.	8.1	145
102	Hair-bundle stiffness dominates the elastic reactance to otolithic-membrane shear. Hearing Research, 1993, 68, 243-252.	2.0	68
103	Displacement-clamp measurement of the forces exerted by gating springs in the hair bundle.. Proceedings of the National Academy of Sciences of the United States of America, 1993, 90, 1330-1334.	7.1	107
104	Adenine nucleoside diphosphates block adaptation of mechanoelectrical transduction in hair cells.. Proceedings of the National Academy of Sciences of the United States of America, 1993, 90, 2710-2714.	7.1	60
105	Hair-bundle mechanics and a model for mechanoelectrical transduction by hair cells. Society of General Physiologists Series, 1992, 47, 357-70.	0.6	35
106	Ultrastructural Correlates of Mechanoelectrical Transduction in Hair Cells of the Bullfrog's Internal Ear. Cold Spring Harbor Symposia on Quantitative Biology, 1990, 55, 547-561.	1.1	118
107	How the ear's works work. Nature, 1989, 341, 397-404.	27.8	782
108	Blockage of the transduction channels of hair cells in the bullfrog's sacculus by aminoglycoside antibiotics. Hearing Research, 1989, 37, 203-217.	2.0	253

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109	Mechanical properties of sensory hair bundles are reflected in their Brownian motion measured with a laser differential interferometer.. Proceedings of the National Academy of Sciences of the United States of America, 1989, 86, 5371-5375.	7.1	92
110	Mechanoelectrical Transduction by Hair Cells. Annual Review of Biophysics and Biophysical Chemistry, 1988, 17, 99-124.	12.2	262
111	Compliance of the hair bundle associated with gating of mechanoelectrical transduction channels in the Bullfrog's saccular hair cell. Neuron, 1988, 1, 189-199.	8.1	590
112	Kinetic analysis of voltageâ€•and ionâ€dependent conductances in saccular hair cells of the bullâ€frog, Rana catesbeiana.. Journal of Physiology, 1988, 400, 237-274.	2.9	283
113	Mechanical relaxation of the hair bundle mediates adaptation in mechanoelectrical transduction by the bullfrog's saccular hair cell.. Proceedings of the National Academy of Sciences of the United States of America, 1987, 84, 3064-3068.	7.1	352
114	Adaptation of mechanoelectrical transduction in hair cells of the bullfrog's sacculus. Journal of Neuroscience, 1987, 7, 2821-2836.	3.6	324
115	Mechanoelectrical Transduction by Hair Cells in the Acousticolateralis Sensory System. Annual Review of Neuroscience, 1983, 6, 187-215.	10.7	165
116	Kinetics of the receptor current in bullfrog saccular hair cells. Journal of Neuroscience, 1983, 3, 962-976.	3.6	522
117	Analysis of the microphonic potential of the bullfrog's sacculus. Journal of Neuroscience, 1983, 3, 942-961.	3.6	177
118	Extracellular current flow and the site of transduction by vertebrate hair cells. Journal of Neuroscience, 1982, 2, 1-10.	3.6	331
119	DIRECTIONAL SENSITIVITY OF INDIVIDUAL VERTEBRATE HAIR CELLS TO CONTROLLED DEFLECTION OF THEIR HAIR BUNDLES. Annals of the New York Academy of Sciences, 1981, 374, 1-10.	3.8	228
120	Mechanical stimulation and micromanipulation with piezoelectric bimorph elements. Journal of Neuroscience Methods, 1980, 3, 183-202.	2.5	83
121	Response latency of vertebrate hair cells. Biophysical Journal, 1979, 26, 499-506.	0.5	218
122	Stereocilia mediate transduction in vertebrate hair cells (auditory system/cilium/vestibular system).. Proceedings of the National Academy of Sciences of the United States of America, 1979, 76, 1506-1509.	7.1	256
123	Controlled bending of high-resistance glass microelectrodes. American Journal of Physiology - Cell Physiology, 1978, 234, C56-C57.	4.6	29