Timothy J Hall

List of Publications by Year
in descending order

123 papers	7,953 citations	94433 37 h-index	49909 87 g-index
126 all docs	126 docs citations	126 times ranked	4998 citing authors

#	Article	IF	Citations
1	Elastic Moduli of Breast and Prostate Tissues under Compression. Ultrasonic Imaging, 1998, 20, 260-274.	2.6	1,513
2	WFUMB Guidelines and Recommendations for Clinical Use of Ultrasound Elastography: Part 1: Basic Principles and Terminology. Ultrasound in Medicine and Biology, 2015, 41, 1126-1147.	1.5	718
3	WFUMB Guidelines and Recommendations for Clinical Use of Ultrasound Elastography: Part 3: Liver. Ultrasound in Medicine and Biology, 2015, 41, 1161-1179.	1.5	620
4	Describing smallâ€scale structure in random media using pulseâ€echo ultrasound. Journal of the Acoustical Society of America, 1990, 87, 179-192.	1.1	440
5	In vivo real-time freehand palpation imaging. Ultrasound in Medicine and Biology, 2003, 29, 427-435.	1.5	371
6	WFUMB Guidelines and Recommendations for Clinical Use of Ultrasound Elastography: Part 2: Breast. Ultrasound in Medicine and Biology, 2015, 41, 1148-1160.	1.5	368
7	An Overview of Elastography-An Emerging Branch of Medical Imaging. Current Medical Imaging, 2011, 7, 255-282.	0.8	340
8	Differentiating Benign from Malignant Solid Breast Masses with US Strain Imaging. Radiology, 2007, 245, 401-410.	7.3	288
9	Parametric Ultrasound Imaging from Backscatter Coefficient Measurements: Image Formation and Interpretation. Ultrasonic Imaging, 1990, 12, 245-267.	2.6	194
10	The mechanical role of the cervix in pregnancy. Journal of Biomechanics, 2015, 48, 1511-1523.	2.1	169
11	A Modified Block Matching Method for Real-Time Freehand Strain Imaging. Ultrasonic Imaging, 2002, 24, 161-176.	2.6	155
12	Linear and nonlinear elasticity imaging of soft tissuein vivo: demonstration of feasibility. Physics in Medicine and Biology, 2009, 54, 1191-1207.	3.0	138
13	Beyond cervical length: emerging technologies for assessing the pregnant cervix. American Journal of Obstetrics and Gynecology, 2012, 207, 345-354.	1.3	126
14	AAPM/RSNA Physics Tutorial for Residents: Topics in US. Radiographics, 2003, 23, 1657-1671.	3.3	119
15	Identifying acoustic scattering sources in normal renal parenchyma from the anisotropy in acoustic properties. Ultrasound in Medicine and Biology, 1991, 17, 613-626.	1.5	113
16	Linear and Nonlinear Elastic Modulus Imaging: An Application to Breast Cancer Diagnosis. IEEE Transactions on Medical Imaging, 2012, 31, 1628-1637.	8.9	103
17	Ultrasonic measurement of glomerular diameters in normal adult humans. Ultrasound in Medicine and Biology, 1996, 22, 987-997.	1.5	84
18	Quantitative Assessment of In Vivo Breast Masses Using Ultrasound Attenuation and Backscatter. Ultrasonic Imaging, 2013, 35, 146-161.	2.6	83

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19	A new paradigm for the role of smooth muscle cells in the human cervix. American Journal of Obstetrics and Gynecology, 2016, 215, 478.e1-478.e11.	1.3	83
20	A Generalized Speckle Tracking Algorithm for Ultrasonic Strain Imaging Using Dynamic Programming. Ultrasound in Medicine and Biology, 2009, 35, 1863-1879.	1.5	70
21	Simultaneous Backscatter and Attenuation Estimation Using a Least Squares Method with Constraints. Ultrasound in Medicine and Biology, 2011, 37, 2096-2104.	1.5	66
22	Identifying acoustic scattering sources in normal renal parenchyma in vitro by varying arterial and ureteral pressures. Ultrasound in Medicine and Biology, 1992, 18, 587-599.	1.5	62
23	Recent Results in Nonlinear Strain and Modulus Imaging. Current Medical Imaging, 2011, 7, 313-327.	0.8	62
24	A novel performance descriptor for ultrasonic strain imaging: a preliminary study. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2006, 53, 1088-1102.	3.0	59
25	Quantitative Ultrasound Assessment of Cervical Microstructure. Ultrasonic Imaging, 2010, 32, 131-142.	2.6	55
26	Comparison of Ultrasound Attenuation and Backscatter Estimates in Layered Tissue-Mimicking Phantoms among Three Clinical Scanners. Ultrasonic Imaging, 2012, 34, 209-221.	2.6	54
27	Nonlinear optical microscopy and ultrasound imaging of human cervical structure. Journal of Biomedical Optics, 2013, 18, 031110.	2.6	54
28	Renal Ultrasound Using Parametric Imaging Techniques to Detect Changes in Microstructure and Function. Investigative Radiology, 1993, 28, 720-725.	6.2	53
29	Interlaboratory Comparison of Backscatter Coefficient Estimates for Tissue-Mimicking Phantoms. Ultrasonic Imaging, 2010, 32, 48-64.	2.6	53
30	Tests of the accuracy of a data reduction method for determination of acoustic backscatter coefficients. Journal of the Acoustical Society of America, 1986, 79, 1230-1236.	1.1	52
31	Measurements of ultrasonic backscatter coefficients in human liver and kidney in vivo. Journal of the Acoustical Society of America, 1995, 98, 1852-1857.	1.1	52
32	Three-Dimensional Electrode Displacement Elastography Using the Siemens C7F2 fourSight Four-Dimensional Ultrasound Transducer. Ultrasound in Medicine and Biology, 2008, 34, 1307-1316.	1.5	52
33	RSNA/QIBA: Shear wave speed as a biomarker for liver fibrosis staging. , 2013, , .		52
34	A coupled subsample displacement estimation method for ultrasound-based strain elastography. Physics in Medicine and Biology, 2015, 60, 8347-8364.	3.0	47
35	Ultrasonic Attenuation and Backscatter Coefficient Estimates of Rodent-Tumor-Mimicking Structures: Comparison of Results among Clinical Scanners. Ultrasonic Imaging, 2011, 33, 233-250.	2.6	45
36	Low Variance Estimation of Backscatter Quantitative Ultrasound Parameters Using Dynamic Programming. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2018, 65, 2042-2053.	3.0	44

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37	Volumetric Elasticity Imaging with a 2-D CMUT Array. Ultrasound in Medicine and Biology, 2010, 36, 978-990.	1.5	38
38	Cross-imaging system comparison of backscatter coefficient estimates from a tissue-mimicking material. Journal of the Acoustical Society of America, 2012, 132, 1319-1324.	1.1	38
39	Task-Oriented Comparison of Power Spectral Density Estimation Methods for Quantifying Acoustic Attenuation in Diagnostic Ultrasound Using a Reference Phantom Method. Ultrasonic Imaging, 2013, 35, 214-234.	2.6	37
40	Ultrasound contrast-detail analysis: A preliminary study in human observer performance. Medical Physics, 1993, 20, 117-127.	3.0	36
41	Quantitative Ultrasonic Detection of Parenchymal Structural Change in Diffuse Renal Disease. Investigative Radiology, 1994, 29, 134-140.	6.2	36
42	A fast hybrid algorithm combining regularized motion tracking and predictive search for reducing the occurrence of large displacement errors. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2011, 58, 730-736.	3.0	35
43	Ultrasound Attenuation Measurements Using a Reference Phantom with Sound Speed Mismatch. Ultrasonic Imaging, 2011, 33, 251-263.	2.6	35
44	Statistical analysis of shear wave speed in the uterine cervix. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2014, 61, 1651-1660.	3.0	35
45	A Quantitative Ultrasound-Based Multi-Parameter Classifier for Breast Masses. Ultrasound in Medicine and Biology, 2019, 45, 1603-1616.	1.5	33
46	Evaluating the feasibility of acoustic radiation force impulse shear wave elasticity imaging of the uterine cervix with an intracavity array: a simulation study. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2013, 60, 2053-2064.	3.0	30
47	Detection of Changes in Cervical Softness Using Shear Wave Speed in Early versus Late Pregnancy: An in Vivo Cross-Sectional Study. Ultrasound in Medicine and Biology, 2018, 44, 515-521.	1.5	30
48	Analysis of Coherent and Diffuse Scattering Using a Reference Phantom. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2016, 63, 1306-1320.	3.0	29
49	Accurate depthâ€independent determination of acoustic backscatter coefficients with focused transducers. Journal of the Acoustical Society of America, 1989, 85, 2410-2416.	1.1	28
50	Noninvasive In-Vivo Quantification of Mechanical Heterogeneity of Invasive Breast Carcinomas. PLoS ONE, 2015, 10, e0130258.	2.5	28
51	Visual detection efficiency in ultrasonic imaging: A framework for objective assessment of image quality. Journal of the Acoustical Society of America, 1994, 95, 2081-2090.	1.1	27
52	Three-dimensional Ultrasound Elasticity Imaging on an Automated Breast Volume Scanning System. Ultrasonic Imaging, 2017, 39, 369-392.	2.6	27
53	Elastic nonlinearity imaging. , 2009, 2009, 1967-70.		25
54	Radiological Society of North America/Quantitative Imaging Biomarker Alliance Shear Wave Speed Bias Quantification in Elastic and Viscoelastic Phantoms. Journal of Ultrasound in Medicine, 2021, 40, 569-581.	1.7	25

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55	A GPU-Accelerated 3-D Coupled Subsample Estimation Algorithm for Volumetric Breast Strain Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 694-705.	3.0	23
56	Acoustic Properties of Breast Fat. Journal of Ultrasound in Medicine, 2015, 34, 2007-2016.	1.7	21
57	Quantitative assessment of cervical softening during pregnancy with shear wave elasticity imaging: an in vivo longitudinal study. Interface Focus, 2019, 9, 20190030.	3.0	20
58	Effective Scatterer Diameter Estimates for Broad Scatterer Size Distributions. Ultrasonic Imaging, 2015, 37, 3-21.	2.6	18
59	Analytic Global Regularized Backscatter Quantitative Ultrasound. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 1605-1617.	3.0	18
60	Assessment of Structural Heterogeneity and Viscosity in the Cervix Using Shear Wave Elasticity Imaging: Initial Results from a Rhesus Macaque Model. Ultrasound in Medicine and Biology, 2017, 43, 790-803.	1.5	17
61	A 3-D Region-Growing Motion-Tracking Method for Ultrasound Elasticity Imaging. Ultrasound in Medicine and Biology, 2018, 44, 1638-1653.	1.5	17
62	Quantitative Ultrasound Biomarkers Based on Backscattered Acoustic Power: Potential for Quantifying Remodeling of the Human Cervix during Pregnancy. Ultrasound in Medicine and Biology, 2019, 45, 429-439.	1.5	17
63	Quantitative assessment of cervical softening during pregnancy in the Rhesus macaque with shear wave elasticity imaging. Physics in Medicine and Biology, 2018, 63, 085016.	3.0	16
64	Quantifying Backscatter Anisotropy Using the Reference Phantom Method. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 1063-1077.	3.0	15
65	Review of quantitative multiscale imaging of breast cancer. Journal of Medical Imaging, 2018, 5, 1.	1.5	14
66	Ultrasound contrast-detail analysis: A comparison of low-contrast detectability among scanhead designs. Medical Physics, 1995, 22, 1117-1125.	3.0	13
67	L1 And L2 Norm Depth-Regularized Estimation Of The Acoustic Attenuation And Backscatter Coefficients Using Dynamic Programming. , 2019, , .		13
68	Anisotropy and Spatial Heterogeneity in Quantitative Ultrasound Parameters: Relevance to the Study of the Human Cervix. Ultrasound in Medicine and Biology, 2018, 44, 1493-1503.	1.5	12
69	Quantitative Ultrasound Comparison of MAT and 4T1 Mammary Tumors in Mice and Rats Across Multiple Imaging Systems. Journal of Ultrasound in Medicine, 2015, 34, 1373-1383.	1.7	11
70	Estimation of Shear Wave Speed in the Rhesus Macaquesâ€™ Uterine Cervix. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2016, 63, 1243-1252.	3.0	10
71	Longitudinal ultrasonic dimensions and parametric solid models of the gravid uterus and cervix. PLoS ONE, 2021, 16, e0242118.	2.5	10
72	Ultrasound Scatterer Density Classification Using Convolutional Neural Networks and Patch Statistics. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2021, 68, 2697-2706.	3.0	10

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73	Inferring spatial variations of microstructural properties from macroscopic mechanical response. Biomechanics and Modeling in Mechanobiology, 2017, 16, 479-496.	2.8	9
74	Power Spectrum Consistency among Systems and Transducers. Ultrasound in Medicine and Biology, 2018, 44, 2358-2370.	1.5	9
75	Quantitative ultrasound and apoptotic death in the neonatal primate brain. Neurobiology of Disease, 2019, 127, 554-562.	4.4	9
76	Detecting cervical microstructure via ultrasound and optical microscopy. , 2010, , .		8
77	Large-Strain 3-D in Vivo Breast Ultrasound Strain Elastography Using a Multi-compression Strategy and a Whole-Breast Scanning System. Ultrasound in Medicine and Biology, 2019, 45, 3145-3159.	1.5	8
78	An Improved Region-Growing Motion Tracking Method Using More Prior Information for 3-D Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2020, 67, 580-597.	3.0	7
79	A robust real-time speckle tracking algorithm for ultrasonic elasticity imaging. , 2009, , .		6
80	Quantitative ultrasound: Enhancing diagnosis using estimates of acoustic attenuation and backscatter. AIP Conference Proceedings, 2016, , .	0.4	6
81	Improving threeâ€dimensional mechanical imaging of breast lesions with principal component analysis. Medical Physics, 2017, 44, 4194-4203.	3.0	6
82	Regularized Estimation of Effective Scatterer Size and Acoustic Concentration Quantitative Ultrasound Parameters Using Dynamic Programming. , 2020, 2020, 13-16.		6
83	Repeatability of Linear and Nonlinear Elastic Modulus Maps From Repeat Scans in the Breast. IEEE Transactions on Medical Imaging, 2021, 40, 748-757.	8.9	6
84	Quantitative Ultrasound Parameters Based on the Backscattered Echo Power Signal as Biomarkers of Cervical Remodeling: A Longitudinal Study in the Pregnant Rhesus Macaque. Ultrasound in Medicine and Biology, 2019, 45, 1466-1474.	1.5	5
85	Quantitative Ultrasound Detects Smooth Muscle Activity at the Cervical Internal Os in Vitro. Ultrasound in Medicine and Biology, 2020, 46, 149-155.	1.5	5
86	Adaptive Data Function for Robust Ultrasound Elastography. , 2020, , .		5
87	Performance of an adaptive multitaper method for reducing coherent noise in spectral analysis of ultrasound backscattered echoes. , 2013, , .		4
88	Quantitative ultrasound backscatter parameters in the human cervix. , 2014, , .		4
89	Interlaboratory comparison of backscatter coefficient estimates for tissue-mimicking phantoms. , 2009, , .		3
90	3-D-Printed Registration Phantom for Combined Ultrasound and Optical Imaging of Biological Tissues. Ultrasound in Medicine and Biology, 2020, 46, 1808-1814.	1.5	3

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91	Correlation length ratio as a parameter for determination of fiber-like structures in soft tissues. Physics in Medicine and Biology, 2021, 66, 055017.	3.0	3
92	Platform for quantitative multiscale imaging of tissue composition. Biomedical Optics Express, 2020, 11, 1927.	2.9	3
93	Incorporating Gradient Similarity for Robust Time Delay Estimation in Ultrasound Elastography. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 1738-1750.	3.0	3
94	Computers in ultrasonic imaging. Journal of Digital Imaging, 1992, 5, 1-6.	2.9	2
95	Pulse-echo sound speed estimation based on a Nakagami model of the echo amplitude. , 2014, , .		2
96	A Tactile Sensor for Ultrasound Imaging Systems. IEEE Sensors Journal, 2016, 16, 1044-1053.	4.7	2
97	A Pilot Study on Scatterer Density Classification of Ultrasound Images Using Deep Neural Networks. , 2020, 2020, 2059-2062.		2
98	Optimization of Ultrasound Backscatter Spectroscopy to Assess Neurotoxic Effects of Anesthesia in the Newborn Non-human Primate Brain. Ultrasound in Medicine and Biology, 2020, 46, 2044-2056.	1.5	2
99	Shear Wave Dispersion as a Potential Biomarker for Cervical Remodeling During Pregnancy: Evidence From a Non-Human Primate Model. Frontiers in Physics, 2021, 8, .	2.1	2
100	Evaluation of Contrast to Noise Ratio of Parametric Images of Regularized Estimates of Quantitative Ultrasound. , 2020, , .		2
101	Quantitative ultrasound for evaluating human cervical microstructure. , 2009, , .		1
102	Performance of various spectral estimation methods on acoustic backscatter coefficient estimation under data size limitations. , 2011, , .		1
103	Pulse-echo sound speed estimation using second order speckle statistics. , 2012, , .		1
104	A multitaper Generalized Spectrum technique for detection of periodic structures in tissue: Comparison with conventional methods. , 2013, , .		1
105	Temporal guided search for elastography motion tracking. , 2013, , .		1
106	Detection of subresolution sources of coherent scattering for parametric image formation. , 2014, , .		1
107	Comparison of shear wave speed estimates in Ex vivo non-pregnant vs. In vivo pregnant cervix. , 2014, , .		1
108	Changes in cervical stiffness during pregnancy: Preliminary assessment with shear wave elasticity imaging in the rhesus macaque. AIP Conference Proceedings, 2016, , .	0.4	1

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109	Challenges of conducting quantitative ultrasound with a multimodal optical imaging system. Physics in Medicine and Biology, 2021, 66, 035008.	3.0	1
110	Analytical Globally-Regularized Estimation Of Effective Scatterer Diameter And Acoustic Concentration in Quantitative Ultrasound. , 2021, , .		1
111	Analysis of human fibroadenomas using three-dimensional impedance maps. , 2009, , .		0
112	Estimating scatterer properties in rat fibroadenomas using various mathematical form factors. , 2009, , .		0
113	Nonlinear elasticity phantom containing spherical inclusions undergoing large deformations. , 2010, , .		0
114	Two-dimensional simulations of displacement accumulation incorporating shear strain. , 2013, , .		0
115	A summary measure of backscatter anisotropy in the non-pregnant cervix. , 2013, , .		0
116	Notice of Removal: Backscattered power anisotropy throughout non-human primate pregnancy. , 2017, , .		0
117	Biological and spatial variability of backscatter coefficient parameters in the ex vivo human uterine cervix. , 2017, , .		0
118	Notice of Removal: Biological factors affecting shear wave speed measurements in the Rhesus macaque non-pregnant cervix. , 2017, , .		0
119	Notice of Removal: Consistency of echo signal power spectra among systems and transducers. , 2017, , .		0
120	Notice of Removal: Biological and experimental factors affecting the assessment of cervical softening during pregnancy with shear wave elasticity imaging. , 2017, , .		0
121	Coherent Ultrasound Scattering in the Young Rhesus Macaque Brain: Effects of Exposure to Anesthetics. , 2018, , .		0
122	Temporal Correlations Between Cervical Smooth Muscle Force Generation and Acoustic Backscatter Coefficient Parameters. , 2018, , .		0
123	Evaluation of sensitivity of ultrasound imaging biomarkers of cervical viscosity based on shear wave elasticity imaging: A simulation study. , 2019, , .		0