Chris B Schaffer

List of Publications by Year
in descending order

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117 papers	11,402 citations	38720 50 h-index	43868 91 g-index
126 all docs	126 docs citations	126 times ranked	12584 citing authors

#	Article	IF	Citations
1	VEGF signalling causes stalls in brain capillaries and reduces cerebral blood flow in Alzheimerâ€™s mice. Brain, 2022, 145, 1449-1463.	3.7	36
2	Femtosecond optical parametric chirped-pulse amplification in birefringent step-index fiber. Optics Letters, 2022, 47, 545.	1.7	8
3	Hypoxia-induced carbonic anhydrase mediated dorsal horn neuron activation and induction of neuropathic pain. Pain, 2022, 163, 2264-2279.	2.0	8
4	Arrested Neutrophils in Capillaries is a Novel Mechanism of Myocardial Hypoperfusion in Heart Failure with Preserved Ejection Fraction. FASEB Journal, 2022, 36, .	0.2	1
5	Dynamic capillary stalls in reperfused ischemic penumbra contribute to injury: A hyperacute role for neutrophils in persistent traffic jams. Journal of Cerebral Blood Flow and Metabolism, 2021, 41, 236-252.	2.4	73
6	Synchronously pumped Raman laser for simultaneous degenerate and nondegenerate two-photon microscopy. Biomedical Optics Express, 2021, 12, 2496.	1.5	6
7	Causes and consequences of baseline cerebral blood flow reductions in Alzheimerâ€™s disease. Journal of Cerebral Blood Flow and Metabolism, 2021, 41, 1501-1516.	2.4	53
8	Increasing cerebral blood flow improves cognition into late stages in Alzheimerâ€™s disease mice. Journal of Cerebral Blood Flow and Metabolism, 2020, 40, 1441-1452.	2.4	50
9	Microvessel occlusions alter amyloid-beta plaque morphology in a mouse model of Alzheimerâ€™s disease. Journal of Cerebral Blood Flow and Metabolism, 2020, 40, 2115-2131.	2.4	14
10	Vascular contributions to cognitive impairment and dementia (VCID): A report from the 2018 National Heart, Lung, and Blood Institute and National Institute of Neurological Disorders and Stroke Workshop. Alzheimer's and Dementia, 2020, 16, 1714-1733.	0.4	108
11	A topological encoding convolutional neural network for segmentation of 3D multiphoton images of brain vasculature using persistent homology. , 2020, 2020, 4262-4271.		11
12	A pilot study investigating the effects of voluntary exercise on capillary stalling and cerebral blood flow in the APP/PS1 mouse model of Alzheimerâ€™s disease. PLoS ONE, 2020, 15, e0235691.	1.1	14
13	High fat diet worsens Alzheimerâ€™s disease-related behavioral abnormalities and neuropathology in APP/PS1 mice, but not by synergistically decreasing cerebral blood flow. Scientific Reports, 2020, 10, 9884.	1.6	53
14	Label-free assessment of hemodynamics in individual cortical brain vessels using third harmonic generation microscopy. Biomedical Optics Express, 2020, 11, 2665.	1.5	11
15	Hyperspectral multiphoton microscopy for in vivo visualization of multiple, spectrally overlapped fluorescent labels. Optica, 2020, 7, 1587.	4.8	24
16	Generation of Femtosecond Pulses at 1080 nm and 1200 nm in Ytterbium-Doped Fiber. , 2020, , .		0
17	Preventing dementia by preventing stroke: The Berlin Manifesto. Alzheimer's and Dementia, 2019, 15, 961-984.	0.4	200
18	Advanced Circuit and Cellular Imaging Methods in Nonhuman Primates. Journal of Neuroscience, 2019, 39, 8267-8274.	1.7	31

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19	Special topic section: linkages among cerebrovascular, cardiovascular, and cognitive disorders: Preventing dementia by preventing stroke: The Berlin Manifesto. International Journal of Stroke, 2019, , 174749301987191.	2.9	13
20	Surgical preparations, labeling strategies, and optical techniques for cell-resolved, in vivo imaging in the mouse spinal cord. Experimental Neurology, 2019, 318, 192-204.	2.0	25
21	Brain Capillary Networks Across Species: A few Simple Organizational Requirements Are Sufficient to Reproduce Both Structure and Function. Frontiers in Physiology, 2019, 10, 233.	1.3	70
22	Deep convolutional neural networks for segmenting 3D in vivo multiphoton images of vasculature in Alzheimer disease mouse models. PLoS ONE, 2019, 14, e0213539.	1.1	60
23	Aspirin treatment does not increase microhemorrhage size in young or aged mice. PLoS ONE, 2019, 14, e0204295.	1.1	3
24	Neutrophil adhesion in brain capillaries reduces cortical blood flow and impairs memory function in Alzheimerâ€™s disease mouse models. Nature Neuroscience, 2019, 22, 413-420.	7.1	316
25	In Vivo Femtosecond Laser Subsurface Cortical Microtransections Attenuate Acute Rat Focal Seizures. Cerebral Cortex, 2019, 29, 3415-3426.	1.6	4
26	Spatio-temporal dynamics of cerebral capillary segments with stalling red blood cells. Journal of Cerebral Blood Flow and Metabolism, 2019, 39, 886-900.	2.4	61
27	Comparison of convolutional neural and fully convolutional networks for segmentation of 3D in vivo multiphoton microscopy images of brain vasculature. , 2019, , .		1
28	Abstract 101: ApoE4 Disrupts Cerebrovascular Microcirculation and Undermines White Matter Integrity and Cognitive Function. Stroke, 2019, 50, .	1.0	0
29	Experimentally constrained circuit model of cortical arteriole networks for understanding flow redistribution due to occlusion and neural activation. Journal of Cerebral Blood Flow and Metabolism, 2018, 38, 38-44.	2.4	8
30	ApoÎµ4 disrupts neurovascular regulation and undermines white matter integrity and cognitive function. Nature Communications, 2018, 9, 3816.	5.8	100
31	Diverse Inflammatory Response After Cerebral Microbleeds Includes Coordinated Microglial Migration and Proliferation. Stroke, 2018, 49, 1719-1726.	1.0	53
32	Two-Photon Imaging Reveals Capillary Occlusions are Responsible for Reduced Brain Blood Flow and Cognitive Decline in Alzheimerâ€™s Disease Mouse Models. , 2017, , .		0
33	Mixing injector enables time-resolved crystallography with high hit rate at X-ray free electron lasers. Structural Dynamics, 2016, 3, 054301.	0.9	84
34	TRAIL-coated leukocytes that prevent the bloodborne metastasis of prostate cancer. Journal of Controlled Release, 2016, 223, 215-223.	4.8	62
35	The origin and implementation of the Broadening Experiences in Scientific Training programs: an NIH common fund initiative. FASEB Journal, 2016, 30, 507-514.	0.2	71
36	A circuit motif in the zebrafish hindbrain for a two alternative behavioral choice to turn left or right. ELife, 2016, 5, .	2.8	65

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37	The inflammatory response following a laser-induced cortical microhemorrhage in a rodent model is dominated by brain-resident microglia and not blood-borne macrophages. , 2016, , .		0
38	Robust and Fragile Aspects of Cortical Blood Flow in Relation to the Underlying Angioarchitecture. Microcirculation, 2015, 22, 204-218.	1.0	78
39	Use of Tethered Enzymes as a Platform Technology for Rapid Analyte Detection. PLoS ONE, 2015, 10, e0142326.	1.1	6
40	Characterization of Blood Flow in the Mouse Dorsal Spinal Venous System before and after Dorsal Spinal Vein Occlusion. Journal of Cerebral Blood Flow and Metabolism, 2015, 35, 667-675.	2.4	16
41	Ultra-large field-of-view two-photon microscopy. Optics Express, 2015, 23, 13833.	1.7	111
42	Vascular contributions to cognitive impairment and dementia including Alzheimer's disease. Alzheimer's and Dementia, 2015, 11, 710-717.	0.4	461
43	Growth and hemodynamics after early embryonic aortic arch occlusion. Biomechanics and Modeling in Mechanobiology, 2015, 14, 735-751.	1.4	34
44	Unnatural killer cells: TRAIL-coated leukocytes that kill cancer cells in the circulation. , 2014, , .		1
45	Constitutively active Notch4 receptor elicits brain arteriovenous malformations through enlargement of capillary-like vessels. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 18007-18012.	3.3	82
46	TRAIL-coated leukocytes that kill cancer cells in the circulation. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 930-935.	3.3	182
47	Stalled cerebral capillary blood flow in mouse models of essential thrombocythemia and polycythemia vera revealed by in vivo twoâ€photon imaging. Journal of Thrombosis and Haemostasis, 2014, 12, 2120-2130.	1.9	46
48	A Procedure for Implanting a Spinal Chamber for Longitudinal In Vivo Imaging of the Mouse Spinal Cord. Journal of Visualized Experiments, 2014, , .	0.2	7
49	FTS-02-01: LEUKOCYTE PLUGGING OF CAPILLARIES REDUCES BRAIN BLOOD FLOW IN MOUSE MODELS OF ALZHEIMER'S DISEASE. , 2014, 10, P285-P285.		0
50	The Challenge of Connecting the Dots in the B.R.A.I.N.. Neuron, 2013, 80, 270-274.	3.8	73
51	Optoporation and Genetic Manipulation of Cells Using Femtosecond LaserÂPulses. Biophysical Journal, 2013, 105, 862-871.	0.2	57
52	In vivo three-photon microscopy of subcortical structures within an intact mouse brain. Nature Photonics, 2013, 7, 205-209.	15.6	1,225
53	Intracerebral haemorrhage associated with antithrombotic treatment: translational insights from experimental studies. Lancet Neurology, The, 2013, 12, 394-405.	4.9	52
54	Femtosecond Laser Micromachining. , 2013, , 287-321.		15

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55	Big Effects From Tiny Vessels. Stroke, 2013, 44, S90-2.	1.0	21
56	Optically Induced Occlusion of Single Blood Vessels in Rodent Neocortex. Cold Spring Harbor Protocols, 2013, 2013, pdb.prot079509.	0.2	12
57	Ultrasonically actuated inserted neural probes for increased recording reliability. , 2013, , .		5
58	Stimulus-Evoked Calcium Transients in Somatosensory Cortex Are Temporarily Inhibited by a Nearby Microhemorrhage. PLoS ONE, 2013, 8, e65663.	1.1	38
59	Intravenous tPA Therapy Does Not Worsen Acute Intracerebral Hemorrhage in Mice. PLoS ONE, 2013, 8, e54203.	1.1	17
60	Ultrasonic actuation (UA) reduces the brain inflammatory response to neural microelectrode insertion. FASEB Journal, 2013, 27, 927.14.	0.2	0
61	Notch4 Normalization Reduces Blood Vessel Size in Arteriovenous Malformations. Science Translational Medicine, 2012, 4, 117ra8.	5.8	77
62	Ultrasonically enabled neural probes with co-located electrical and mechanical transduction. , 2012, , .		2
63	In vivo two-photon excited fluorescence microscopy reveals cardiac- and respiration-dependent pulsatile blood flow in cortical blood vessels in mice. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 302, H1367-H1377.	1.5	129
64	Two-Photon Microscopy as a Tool to Study Blood Flow and Neurovascular Coupling in the Rodent Brain. Journal of Cerebral Blood Flow and Metabolism, 2012, 32, 1277-1309.	2.4	405
65	Chronic in vivo imaging in the mouse spinal cord using an implanted chamber. Nature Methods, 2012, 9, 297-302.	9.0	154
66	Cyclic strain anisotropy regulates valvular interstitial cell phenotype and tissue remodeling in three-dimensional culture. Acta Biomaterialia, 2012, 8, 1710-1719.	4.1	105
67	Real-Time Imaging of Perivascular Transport of Nanoparticles During Convection-Enhanced Delivery in the Rat Cortex. Annals of Biomedical Engineering, 2012, 40, 292-303.	1.3	42
68	Line-Scanning Particle Image Velocimetry: An Optical Approach for Quantifying a Wide Range of Blood Flow Speeds in Live Animals. PLoS ONE, 2012, 7, e38590.	1.1	83
69	Estimating brain microvascular blood flows from partial two-photon microscopy data by computation with a circuit model. , 2011, 2011, 174-7.		6
70	In Vivo Imaging of Myelin in the Vertebrate Central Nervous System Using Third Harmonic Generation Microscopy. Biophysical Journal, 2011, 100, 1362-1371.	0.2	189
71	Cortical Microhemorrhages Cause Local Inflammation but Do Not Trigger Widespread Dendrite Degeneration. PLoS ONE, 2011, 6, e26612.	1.1	66
72	Optically quantified cerebral blood flow. Journal of Cerebral Blood Flow and Metabolism, 2011, 31, 1337-1338.	2.4	10

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73	Subâ€surface, micrometerâ€scale incisions produced in rodent cortex using tightlyâ€focused femtosecond laser pulses. Lasers in Surgery and Medicine, 2011, 43, 382-391.	1.1	14
74	Anticoagulation With the Oral Direct Thrombin Inhibitor Dabigatran Does Not Enlarge Hematoma Volume in Experimental Intracerebral Hemorrhage. Circulation, 2011, 124, 1654-1662.	1.6	82
75	Preictal and Ictal Neurovascular and Metabolic Coupling Surrounding a Seizure Focus. Journal of Neuroscience, 2011, 31, 13292-13300.	1.7	109
76	Occlusion of Cortical Ascending Venules Causes Blood Flow Decreases, Reversals in Flow Direction, and Vessel Dilation in Upstream Capillaries. Journal of Cerebral Blood Flow and Metabolism, 2011, 31, 2243-2254.	2.4	85
77	Age-Related Intimal Stiffening Enhances Endothelial Permeability and Leukocyte Transmigration. Science Translational Medicine, 2011, 3, 112ra122.	5.8	324
78	Limitations of Collateral Flow after Occlusion of a Single Cortical Penetrating Arteriole. Journal of Cerebral Blood Flow and Metabolism, 2010, 30, 1914-1927.	2.4	106
79	In vivo deep tissue imaging with long wavelength multiphoton excitation. Proceedings of SPIE, 2010, , .	0.8	4
80	Optical tools to produce and study small strokes in animal models. , 2010, 2010, 3377-8.		2
81	Two-photon microscopy-guided femtosecond-laser photoablation of avian cardiogenesis: noninvasive creation of localized heart defects. American Journal of Physiology - Heart and Circulatory Physiology, 2010, 299, H1728-H1735.	1.5	32
82	Stimulus-Evoked Calcium Transients in Somatosensory Cortex are Inhibited After a Nearby Microhemorrhage. , 2010, , .		1
83	Femtosecond Laser Ablation to Induce Occlusions in Single, Targeted Venules in Rat Brain. , 2010, , .		0
84	In Vivo Imaging of Cerebral Circulation In Mouse Models of Polycythemia Vera. Blood, 2010, 116, 4091-4091.	0.6	0
85	Flexible microfluidic devices supported by biodegradable insertion scaffolds for convection-enhanced neural drug delivery. Biomedical Microdevices, 2009, 11, 915-924.	1.4	57
86	Deep tissue multiphoton microscopy using longer wavelength excitation. Optics Express, 2009, 17, 13354.	1.7	567
87	Going with the grain. Nature Photonics, 2008, 2, 73-74.	15.6	2
88	Femtosecond Laser-Driven Photodisruption to Induce Single Venule Occlusions in Rodent Brain. , 2008, , .		0
89	Femtosecond Laser-Induced Microvascular Clots Trigger Alzheimerâ€™s Disease Pathology. , 2008, , .		0
90	Penetrating arterioles are a bottleneck in the perfusion of neocortex. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 365-370.	3.3	341

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91	Large two-photon absorptivity of hemoglobin in the infrared range of 780â€“880nm. Journal of Chemical Physics, 2007, 126, 025102.	1.2	38
92	Photonic band-gap fiber gas cell fabricated using femtosecond micromachining. Optics Express, 2007, 15, 6690.	1.7	90
93	Variable pressure hollow-core band-gap fiber cell produced using femtosecond laser micromachining. , 2007, , .		0
94	Spectroscopy of third-harmonic generation: evidence for resonances in model compounds and ligated hemoglobin. Journal of the Optical Society of America B: Optical Physics, 2006, 23, 932.	0.9	67
95	Numerical aperture dependence of damage and supercontinuum generation from femtosecond laser pulses in bulk fused silica. Journal of the Optical Society of America B: Optical Physics, 2006, 23, 2317.	0.9	84
96	Ultrafast Processes for Bulk Modification of Transparent Materials. MRS Bulletin, 2006, 31, 620-625.	1.7	405
97	Targeted insult to subsurface cortical blood vessels using ultrashort laser pulses: three models of stroke. Nature Methods, 2006, 3, 99-108.	9.0	306
98	Spectroscopic analysis of the oxygenation state of hemoglobin using coherent anti-Stokes Raman scattering. Journal of Biomedical Optics, 2006, 11, 050502.	1.4	28
99	Two-Photon Imaging of Cortical Surface Microvessels Reveals a Robust Redistribution in Blood Flow after Vascular Occlusion. PLoS Biology, 2006, 4, e22.	2.6	329
100	In vivo manipulation of biological systems with femtosecond laser pulses. , 2006, , .		9
101	Three-dimensional micromachining inside transparent materials using femtosecond laser pulses: New applications. , 2006, , .		12
102	Femtosecond laser-drilled capillary integrated into a microfluidic device. Applied Physics Letters, 2005, 86, 201106.	1.5	115
103	Morphology of femtosecond laser-induced structural changes in bulk transparent materials. Applied Physics Letters, 2004, 84, 1441-1443.	1.5	163
104	Bulk heating of transparent materials using a high-repetition-rate femtosecond laser. Applied Physics A: Materials Science and Processing, 2003, 76, 351-354.	1.1	369
105	Microexplosions in tellurite glasses. Applied Physics A: Materials Science and Processing, 2003, 76, 379-384.	1.1	31
106	Customization of Poly(dimethylsiloxane) Stamps by Micromachining Using a Femtosecond-Pulsed Laser. Advanced Materials, 2003, 15, 62-65.	11.1	81
107	All-Optical Histology Using Ultrashort Laser Pulses. Neuron, 2003, 39, 27-41.	3.8	204
108	Customization of microfluidic devices using femtosecond laser micromachining. , 2003, , .		1

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109	Dynamics of femtosecond laser-induced breakdown in water from femtoseconds to microseconds. Optics Express, 2002, 10, 196.	1.7	242
110	Structural Changes Induced in Transparent Materials with Ultrashort Laser Pulses. , 2002, , .		1
111	Micromachining bulk glass by use of femtosecond laser pulses with nanojoule energy. Optics Letters, 2001, 26, 93.	1.7	734
112	Laser-induced breakdown and damage in bulk transparent materials induced by tightly focused femtosecond laser pulses. Measurement Science and Technology, 2001, 12, 1784-1794.	1.4	656
113	Time-decorrelated multifocal micromachining and trapping. IEEE Journal of Selected Topics in Quantum Electronics, 2001, 7, 559-566.	1.9	18
114	<title>Laser-induced microexplosions in transparent materials: microstructuring with nanojoules</title>. , 1999, , .		11
115	<title>Ultrafast laser-induced microexplosions: explosive dynamics and submicrometer structures</title>. , 1998, 3269, 36.		27
116	Minimally disruptive laser-induced breakdown in water. Optics Letters, 1997, 22, 1817.	1.7	75
117	Programmable shaping of ultrabroad-bandwidth pulses from a Ti:sapphire laser. Journal of the Optical Society of America B: Optical Physics, 1995, 12, 1968.	0.9	67