

James C Weaver

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

108 papers	9,867 citations	43 h-index	99 g-index
110 ext. papers	12,011 ext. citations	12.8 avg, IF	6.28 L-index

#	Paper	IF	Citations
108	Neuroanatomy in a middle Cambrian mollisoniid and the ancestral nervous system organization of chelicerates.. <i>Nature Communications</i> , 2022 , 13, 410	17.4	1
107	A damage-tolerant, dual-scale, single-crystalline microlattice in the knobby starfish, .. <i>Science</i> , 2022 , 375, 647-652	33.3	9
106	Computational methods for the characterization of <i>Apis mellifera</i> comb architecture.. <i>Communications Biology</i> , 2022 , 5, 468	6.7	
105	Microstructural design for mechanical-optical multifunctionality in the exoskeleton of the flower beetle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118,	11.5	5
104	Crystal nucleation and growth of spherulites demonstrated by coral skeletons and phase-field simulations. <i>Acta Biomaterialia</i> , 2021 , 120, 277-292	10.8	12
103	Crystal misorientation correlates with hardness in tooth enamels. <i>Acta Biomaterialia</i> , 2021 , 120, 124-134	10.8	7
102	Mechanically robust lattices inspired by deep-sea glass sponges. <i>Nature Materials</i> , 2021 , 20, 237-241	27	46
101	A Fabrication Strategy for Reconfigurable Millimeter-Scale Metamaterials. <i>Advanced Functional Materials</i> , 2021 , 31, 2103428	15.6	1
100	Cambrian comb jellies from Utah illuminate the early evolution of nervous and sensory systems in ctenophores. <i>Science</i> , 2021 , 24, 102943	6.1	4
99	Mechanical and hydrodynamic analyses of helical strake-like ridges in a glass sponge. <i>Journal of the Royal Society Interface</i> , 2021 , 18, 20210559	4.1	3
98	Dynamic Self-Repairing Hybrid Liquid-in-Solid Protective Barrier for Cementitious Materials. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 31922-31932	9.5	2
97	Evidence of Cosmic Impact at Abu Hureyra, Syria at the Younger Dryas Onset (~12.8 ka): High-temperature melting at >2200 °C. <i>Scientific Reports</i> , 2020 , 10, 4185	4.9	10
96	Octopus Arm-Inspired Tapered Soft Actuators with Suckers for Improved Grasping. <i>Soft Robotics</i> , 2020 , 7, 639-648	9.2	65
95	Smart Thermally Actuating Textiles. <i>Advanced Materials Technologies</i> , 2020 , 5, 2000383	6.8	10
94	The structural origins of brittle star arm kinematics: An integrated tomographic, additive manufacturing, and parametric modeling-based approach. <i>Journal of Structural Biology</i> , 2020 , 211, 1074814	3.4	1
93	A Soft, Modular, and Bi-stable Dome Actuator for Programmable Multi-Modal Locomotion 2020 ,		3
92	A geometrically adaptable heart valve replacement. <i>Science Translational Medicine</i> , 2020 , 12,	17.5	18

91	Hybrid Living Materials: Digital Design and Fabrication of 3D Multimaterial Structures with Programmable Biohybrid Surfaces. <i>Advanced Functional Materials</i> , 2020 , 30, 1907401	15.6	23
90	Human Colon-on-a-Chip Enables Continuous In Vitro Analysis of Colon Mucus Layer Accumulation and Physiology. <i>Cellular and Molecular Gastroenterology and Hepatology</i> , 2020 , 9, 507-526	7.9	75
89	Shape-preserving erosion controlled by the graded microarchitecture of shark tooth enameloid. <i>Nature Communications</i> , 2020 , 11, 5971	17.4	2
88	Strategies for simultaneous strengthening and toughening via nanoscopic intracrystalline defects in a biogenic ceramic. <i>Nature Communications</i> , 2020 , 11, 5678	17.4	8
87	Ultra-sensitive and resilient compliant strain gauges for soft machines. <i>Nature</i> , 2020 , 587, 219-224	50.4	109
86	Robotic Textiles: Smart Thermally Actuating Textiles (Adv. Mater. Technol. 8/2020). <i>Advanced Materials Technologies</i> , 2020 , 5, 2070050	6.8	
85	Design, Fabrication, and Characterization of an Untethered Amphibious Sea Urchin-Inspired Robot. <i>IEEE Robotics and Automation Letters</i> , 2019 , 4, 3348-3354	4.2	13
84	The Temple Scroll: Reconstructing an ancient manufacturing practice. <i>Science Advances</i> , 2019 , 5, eaaw7494	74.3	5
83	Ontogenetic scaling patterns of lizard skin surface structure as revealed by gel-based stereo-profilometry. <i>Journal of Anatomy</i> , 2019 , 235, 346-356	2.9	6
82	Large-scale micron-order 3D surface correlative chemical imaging of ancient Roman concrete. <i>PLoS ONE</i> , 2019 , 14, e0210710	3.7	10
81	An injectable bone marrow-like scaffold enhances T cell immunity after hematopoietic stem cell transplantation. <i>Nature Biotechnology</i> , 2019 , 37, 293-302	44.5	62
80	Bright Green Biofluorescence in Sharks Derives from Bromo-Kynurenine Metabolism. <i>iScience</i> , 2019 , 19, 1291-1336	6.1	13
79	High-Throughput Segmentation of Tiled Biological Structures using Random-Walk Distance Transforms. <i>Integrative and Comparative Biology</i> , 2019 , 59, 1700-1712	2.8	11
78	Mechanical properties of stingray tesserae: High-resolution correlative analysis of mineral density and indentation moduli in tessellated cartilage. <i>Acta Biomaterialia</i> , 2019 , 96, 421-435	10.8	12
77	Bioinspired design of flexible armor based on chiton scales. <i>Nature Communications</i> , 2019 , 10, 5413	17.4	25
76	Pre-procedural fit-testing of TAVR valves using parametric modeling and 3D printing. <i>Journal of Cardiovascular Computed Tomography</i> , 2019 , 13, 21-30	2.8	29
75	3D printing and intraoperative neuronavigation tailoring for skull base reconstruction after extended endoscopic endonasal surgery: proof of concept. <i>Journal of Neurosurgery</i> , 2018 , 130, 248-255	3.2	4
74	Echinoderm-Inspired Tube Feet for Robust Robot Locomotion and Adhesion. <i>IEEE Robotics and Automation Letters</i> , 2018 , 3, 2222-2228	4.2	14

73	A facile approach to enhance antigen response for personalized cancer vaccination. <i>Nature Materials</i> , 2018 , 17, 528-534	27	215
72	Improved magnetic regulation of delivery profiles from ferrogels. <i>Biomaterials</i> , 2018 , 161, 179-189	15.6	35
71	Shark skin-inspired designs that improve aerodynamic performance. <i>Journal of the Royal Society Interface</i> , 2018 , 15,	4.1	69
70	Rotary-actuated folding polyhedrons for midwater investigation of delicate marine organisms. <i>Science Robotics</i> , 2018 , 3,	18.6	33
69	Sustained release of targeted cardiac therapy with a replenishable implanted epicardial reservoir. <i>Nature Biomedical Engineering</i> , 2018 , 2, 416-428	19	55
68	Large-Scale Micron-Order 3D Surface Correlative Imaging of Ancient Roman Concrete. <i>Microscopy and Microanalysis</i> , 2018 , 24, 2130-2131	0.5	
67	From Improved Diagnostics to Presurgical Planning: High-Resolution Functionally Graded Multimaterial 3D Printing of Biomedical Tomographic Data Sets. <i>3D Printing and Additive Manufacturing</i> , 2018 , 5, 103-113	4	19
66	Making data matter: Voxel printing for the digital fabrication of data across scales and domains. <i>Science Advances</i> , 2018 , 4, eaas8652	14.3	48
65	Morphogenesis of aligned collagen fibers in the annulus fibrosus: Mammals versus avians. <i>Biochemical and Biophysical Research Communications</i> , 2018 , 503, 1168-1173	3.4	5
64	Rational design of reconfigurable prismatic architected materials. <i>Nature</i> , 2017 , 541, 347-352	50.4	166
63	Soft robotic sleeve supports heart function. <i>Science Translational Medicine</i> , 2017 , 9,	17.5	191
62	Fabrication of Paper-Templated Structures of Noble Metals. <i>Advanced Materials Technologies</i> , 2017 , 2, 1600229	6.8	16
61	Uncovering Nature's Design Strategies through Parametric Modeling, Multi-Material 3D Printing, and Mechanical Testing. <i>Advanced Engineering Materials</i> , 2017 , 19, e201600848	3.5	20
60	Imaging biological surface topography in situ and in vivo. <i>Methods in Ecology and Evolution</i> , 2017 , 8, 1626-1638	17.1	19
59	Ultrastructural, material and crystallographic description of endophytic masses - A possible damage response in shark and ray tessellated calcified cartilage. <i>Journal of Structural Biology</i> , 2017 , 198, 5-18	3.4	13
58	Substrate Stress-Relaxation Regulates Scaffold Remodeling and Bone Formation In Vivo. <i>Advanced Healthcare Materials</i> , 2017 , 6, 1601185	10.1	68
57	A Biologically Inspired, Functionally Graded End Effector for Soft Robotics Applications. <i>Soft Robotics</i> , 2017 , 4, 317-323	9.2	33
56	Mechanical induction of dentin-like differentiation by adult mouse bone marrow stromal cells using compressive scaffolds. <i>Stem Cell Research</i> , 2017 , 24, 55-60	1.6	12

55	Calcified cartilage or bone? Collagens in the tessellated endoskeletons of cartilaginous fish (sharks and rays). <i>Journal of Structural Biology</i> , 2017 , 200, 54-71	3.4	19
54	A biorobotic adhesive disc for underwater hitchhiking inspired by the remora suckerfish. <i>Science Robotics</i> , 2017 , 2,	18.6	110
53	Materials science and architecture. <i>Nature Reviews Materials</i> , 2017 , 2,	73.3	39
52	Impact-related microspherules in Late Pleistocene Alaskan and Yukon "muck" deposits signify recurrent episodes of catastrophic emplacement. <i>Scientific Reports</i> , 2017 , 7, 16620	4.9	6
51	Ultrastructural and developmental features of the tessellated endoskeleton of elasmobranchs (sharks and rays). <i>Journal of Anatomy</i> , 2016 , 229, 681-702	2.9	44
50	Tensile Instability in a Thick Elastic Body. <i>Physical Review Letters</i> , 2016 , 117, 094301	7.4	13
49	Engineering the Mechanics of Heterogeneous Soft Crystals. <i>Advanced Functional Materials</i> , 2016 , 26, 6938-6949	15.6	18
48	Data-Driven Material Modeling with Functional Advection for 3D Printing of Materially Heterogeneous Objects. <i>3D Printing and Additive Manufacturing</i> , 2016 , 3, 71-79	4	24
47	A three-dimensional actuated origami-inspired transformable metamaterial with multiple degrees of freedom. <i>Nature Communications</i> , 2016 , 7, 10929	17.4	219
46	Matched-Comparative Modeling of Normal and Diseased Human Airway Responses Using a Microengineered Breathing Lung Chip. <i>Cell Systems</i> , 2016 , 3, 456-466.e4	10.6	152
45	Grown, Printed, and Biologically Augmented: An Additively Manufactured Microfluidic Wearable, Functionally Templated for Synthetic Microbes. <i>3D Printing and Additive Manufacturing</i> , 2016 , 3, 79-89	4	26
44	Condensation on slippery asymmetric bumps. <i>Nature</i> , 2016 , 531, 78-82	50.4	481
43	Small airway-on-a-chip enables analysis of human lung inflammation and drug responses in vitro. <i>Nature Methods</i> , 2016 , 13, 151-7	21.6	426
42	Hydrogels with tunable stress relaxation regulate stem cell fate and activity. <i>Nature Materials</i> , 2016 , 15, 326-34	27	1153
41	Structure, biomimetics, and fluid dynamics of fish skin surfaces*. <i>Physical Review Fluids</i> , 2016 , 1,	2.8	52
40	Honeycomb Actuators Inspired by the Unfolding of Ice Plant Seed Capsules. <i>PLoS ONE</i> , 2016 , 11, e0163596	39.6	18
39	Harnessing Buckling to Design Architected Materials that Exhibit Effective Negative Swelling. <i>Advanced Materials</i> , 2016 , 28, 6619-24	24	78
38	CD44 alternative splicing in gastric cancer cells is regulated by culture dimensionality and matrix stiffness. <i>Biomaterials</i> , 2016 , 98, 152-62	15.6	29

37	Characterization of a Mechanically Tunable Gyroid Photonic Crystal Inspired by the Butterfly Parides Sesostris. <i>Advanced Optical Materials</i> , 2016 , 4, 99-105	8.1	29
36	Hierarchical structural design for fracture resistance in the shell of the pteropod <i>Clio pyramidata</i> . <i>Nature Communications</i> , 2015 , 6, 6216	17.4	39
35	SOFT ROBOTICS. A 3D-printed, functionally graded soft robot powered by combustion. <i>Science</i> , 2015 , 349, 161-5	33.3	608
34	New functional insights into the internal architecture of the laminated anchor spicules of <i>Euplectella aspergillum</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 4976-81	11.5	33
33	Additive Manufacturing of Optically Transparent Glass. <i>3D Printing and Additive Manufacturing</i> , 2015 , 2, 92-105	4	154
32	Glassin, a histidine-rich protein from the siliceous skeletal system of the marine sponge <i>Euplectella</i> , directs silica polycondensation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 11449-54	11.5	39
31	The Geometric Design and Fabrication of Actuating Cellular Structures. <i>Advanced Materials Interfaces</i> , 2015 , 2, 1500011	4.6	16
30	A highly conspicuous mineralized composite photonic architecture in the translucent shell of the blue-rayed limpet. <i>Nature Communications</i> , 2015 , 6, 6322	17.4	59
29	Osteocyte lacunar properties in rat cortical bone: Differences between lamellar and central bone. <i>Journal of Structural Biology</i> , 2015 , 191, 59-67	3.4	37
28	Multi-scale thermal stability of a hard thermoplastic protein-based material. <i>Nature Communications</i> , 2015 , 6, 8313	17.4	43
27	Large area sub-micron chemical imaging of magnesium in sea urchin teeth. <i>Journal of Structural Biology</i> , 2015 , 189, 269-75	3.4	18
26	Biom mineralization. Built for tough conditions. <i>Science</i> , 2015 , 347, 712-3	33.3	9
25	Substrate stress relaxation regulates cell spreading. <i>Nature Communications</i> , 2015 , 6, 6364	17.4	485
24	Dimpled elastic sheets: a new class of non-porous negative Poisson's ratio materials. <i>Scientific Reports</i> , 2015 , 5, 18373	4.9	40
23	Responsive materials: a novel design for enhanced machine-augmented composites. <i>Scientific Reports</i> , 2014 , 4, 3783	4.9	8
22	Complex ordered patterns in mechanical instability induced geometrically frustrated triangular cellular structures. <i>Physical Review Letters</i> , 2014 , 112, 098701	7.4	92
21	Bone marrow-on-a-chip replicates hematopoietic niche physiology in vitro. <i>Nature Methods</i> , 2014 , 11, 663-9	21.6	293
20	Biomimetic shark skin: design, fabrication and hydrodynamic function. <i>Journal of Experimental Biology</i> , 2014 , 217, 1656-66	3	247

19	Influence of the stiffness of three-dimensional alginate/collagen-I interpenetrating networks on fibroblast biology. <i>Biomaterials</i> , 2014 , 35, 8927-36	15.6	184
18	Harnessing buckling to design tunable locally resonant acoustic metamaterials. <i>Physical Review Letters</i> , 2014 , 113, 014301	7.4	351
17	Tunability and enhancement of mechanical behavior with additively manufactured bio-inspired hierarchical suture interfaces. <i>Journal of Materials Research</i> , 2014 , 29, 1867-1875	2.5	54
16	Photoactivation of endogenous latent transforming growth factor- β directs dental stem cell differentiation for regeneration. <i>Science Translational Medicine</i> , 2014 , 6, 238ra69	17.5	156
15	Harnessing instabilities for design of soft reconfigurable auxetic/chiral materials. <i>Soft Matter</i> , 2013 , 9, 8198	3.6	128
14	Phase Transformations and Structural Developments in the Radular Teeth of Cryptochiton Stelleri. <i>Advanced Functional Materials</i> , 2013 , 23, 2908-2917	15.6	51
13	Metamaterials: 3D Soft Metamaterials with Negative Poisson's Ratio (Adv. Mater. 36/2013). <i>Advanced Materials</i> , 2013 , 25, 5116-5116	24	4
12	The stomatopod dactyl club: a formidable damage-tolerant biological hammer. <i>Science</i> , 2012 , 336, 1275-80	39.3	489
11	Unifying Design Strategies in Demosponge and Hexactinellid Skeletal Systems 2010 , 86, 72-95		28
10	Analysis of an ultra hard magnetic biomineral in chiton radular teeth. <i>Materials Today</i> , 2010 , 13, 42-52	21.8	128
9	Effects of Laminate Architecture on Fracture Resistance of Sponge Biosilica: Lessons from Nature. <i>Advanced Functional Materials</i> , 2008 , 18, 1241-1248	15.6	99
8	BaCe _{1-x} Pd _x O _{3-(1-x/2)} : Redox Controlled Ingress and Egress of Palladium in a Perovskite. <i>Chemistry of Materials</i> , 2007 , 19, 1418-1426	9.6	43
7	Hierarchical assembly of the siliceous skeletal lattice of the hexactinellid sponge Euplectella aspergillum. <i>Journal of Structural Biology</i> , 2007 , 158, 93-106	3.4	145
6	Micromechanical properties of biological silica in skeletons of deep-sea sponges. <i>Journal of Materials Research</i> , 2006 , 21, 2068-2078	2.5	139
5	Skeleton of Euplectella sp.: structural hierarchy from the nanoscale to the macroscale. <i>Science</i> , 2005 , 309, 275-8	33.3	871
4	Molecular biology of demosponge axial filaments and their roles in biosilicification. <i>Microscopy Research and Technique</i> , 2003 , 62, 356-67	2.8	96
3	Nanostructural features of demosponge biosilica. <i>Journal of Structural Biology</i> , 2003 , 144, 271-81	3.4	80
2	Structure-Function Studies of the Lustrin A Polyelectrolyte Domains, RKS _Y and D ₄ . <i>Connective Tissue Research</i> , 2003 , 44, 10-15	3.3	28

1 A Modular and Self-Contained Fluidic Engine for Soft Actuators. *Advanced Intelligent Systems*, 2100094 6 1