Quentin Barraud

List of Publications by Year
in descending order

91 papers	12,494 citations	47409 49 h-index	60403 85 g-index
98 all docs	98 docs citations	98 times ranked	10795 citing authors

#	Article	IF	Citations
1	Wireless closed-loop optogenetics across the entire dorsoventral spinal cord in mice. Nature Biotechnology, 2022, 40, 198-208.	9.4	48
2	Activity-dependent spinal cord neuromodulation rapidly restores trunk and leg motor functions after complete paralysis. Nature Medicine, 2022, 28, 260-271.	15.2	174
3	Preclinical upper limb neurorobotic platform to assess, rehabilitate, and develop therapies. Science Robotics, 2022, 7, eabk2378.	9.9	7
4	Epidural electrical stimulation of the cervical dorsal roots restores voluntary upper limb control in paralyzed monkeys. Nature Neuroscience, 2022, 25, 924-934.	7.1	30
5	Cell type prioritization in single-cell data. Nature Biotechnology, 2021, 39, 30-34.	9.4	96
6	Introducing a biomimetic coating for graphene neuroelectronics: toward in-vivo applications. Biomedical Physics and Engineering Express, 2021, 7, 015006.	0.6	3
7	Neuroprosthetic baroreflex controls haemodynamics after spinal cord injury. Nature, 2021, 590, 308-314.	13.7	96
8	Recruitment of upper-limb motoneurons with epidural electrical stimulation of the cervical spinal cord. Nature Communications, 2021, 12, 435.	5.8	92
9	Multi-pronged neuromodulation intervention engages the residual motor circuitry to facilitate walking in a rat model of spinal cord injury. Nature Communications, 2021, 12, 1925.	5.8	35
10	MRIâ€Compatible and Conformal Electrocorticography Grids for Translational Research. Advanced Science, 2021, 8, 2003761.	5.6	33
11	Meeting Proceedings for SCI 2020: Launching a Decade of Disruption in Spinal Cord Injury Research. Journal of Neurotrauma, 2021, 38, 1251-1266.	1.7	14
12	Prioritization of cell types responsive to biological perturbations in single-cell data with Augur. Nature Protocols, 2021, 16, 3836-3873.	5.5	22
13	Elezanumab, a human anti-RGMa monoclonal antibody, promotes neuroprotection, neuroplasticity, and neurorecovery following a thoracic hemicompression spinal cord injury in non-human primates. Neurobiology of Disease, 2021, 155, 105385.	2.1	14
14	Enabling reproducible re-analysis of single-cell data. Genome Biology, 2021, 22, 215.	3.8	9
15	Confronting false discoveries in single-cell differential expression. Nature Communications, 2021, 12, 5692.	5.8	332
16	Engineering spinal cord repair. Current Opinion in Biotechnology, 2021, 72, 48-53.	3.3	18
17	Optogenetic Interrogation of Circuits Following Neurotrauma. Frontiers in Molecular Neuroscience, 2021, 14, 803856.	1.4	0
18	Structured nanoscale metallic glass fibres with extreme aspect ratios. Nature Nanotechnology, 2020, 15, 875-882.	15.6	59

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19	Guidelines to Study and Develop Soft Electrode Systems for Neural Stimulation. Neuron, 2020, 108, 238-258.	3.8	49
20	Soft, Implantable Bioelectronic Interfaces for Translational Research. Advanced Materials, 2020, 32, e1906512.	11.1	67
21	Soft Printable Electrode Coating for Neural Interfaces. ACS Applied Bio Materials, 2020, 3, 4388-4397.	2.3	33
22	Monolayer Graphene Coating of Intracortical Probes for Longâ€Lasting Neural Activity Monitoring. Advanced Healthcare Materials, 2019, 8, e1801331.	3.9	25
23	Neurorestorative interventions involving bioelectronic implants after spinal cord injury. Bioelectronic Medicine, 2019, 5, 10.	1.0	22
24	Low-Dimensional Motor Cortex Dynamics Preserve Kinematics Information During Unconstrained Locomotion in Nonhuman Primates. Frontiers in Neuroscience, 2019, 13, 1046.	1.4	14
25	Spinal cord repair: advances in biology and technology. Nature Medicine, 2019, 25, 898-908.	15.2	323
26	Cbp-dependent histone acetylation mediates axon regeneration induced by environmental enrichment in rodent spinal cord injury models. Science Translational Medicine, 2019, 11, .	5.8	79
27	Advantages of soft subdural implants for the delivery of electrochemical neuromodulation therapies to the spinal cord. Journal of Neural Engineering, 2018, 15, 026024.	1.8	41
28	Closed-loop control of trunk posture improves locomotion through the regulation of leg proprioceptive feedback after spinal cord injury. Scientific Reports, 2018, 8, 76.	1.6	30
29	Corticoâ€"reticuloâ€"spinal circuit reorganization enables functional recovery after severe spinal cord contusion. Nature Neuroscience, 2018, 21, 576-588.	7.1	228
30	Selective Recruitment of Arm Motoneurons in Nonhuman Primates Using Epidural Electrical Stimulation of the Cervical Spinal Cord. , 2018, 2018, 1424-1427.		10
31	Long-term functionality of a soft electrode array for epidural spinal cord stimulation in a minipig model. , 2018, 2018, 1432-1435.		8
32	Targeted neurotechnology restores walking in humans with spinal cord injury. Nature, 2018, 563, 65-71.	13.7	708
33	Electrical spinal cord stimulation must preserve proprioception to enable locomotion in humans with spinal cord injury. Nature Neuroscience, 2018, 21, 1728-1741.	7.1	247
34	Configuration of electrical spinal cord stimulation through real-time processing of gait kinematics. Nature Protocols, 2018, 13, 2031-2061.	5.5	96
35	Reducing neuronal inhibition restores locomotion in paralysed mice. Nature, 2018, 561, 317-318.	13.7	2
36	Required growth facilitators propel axon regeneration across complete spinal cord injury. Nature, 2018, 561, 396-400.	13.7	341

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37	Inhaling xenon ameliorates <scp>l</scp>â€dopaâ€induced dyskinesia in experimental parkinsonism. Movement Disorders, 2018, 33, 1632-1642.	2.2	15
38	Brain-controlled modulation of spinal circuits improves recovery from spinal cord injury. Nature Communications, 2018, 9, 3015.	5.8	108
39	Rehabilitative Soft Exoskeleton for Rodents. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 107-118.	2.7	12
40	Long-term usability and bio-integration of polyimide-based intra-neural stimulating electrodes. Biomaterials, 2017, 122, 114-129.	5.7	132
41	Biodegradable scaffolds promote tissue remodeling and functional improvement in non-human primates with acute spinal cord injury. Biomaterials, 2017, 123, 63-76.	5.7	75
42	A multidirectional gravity-assist algorithm that enhances locomotor control in patients with stroke or spinal cord injury. Science Translational Medicine, 2017, 9, .	5.8	42
43	A Computational Framework for the Design of Spinal Neuroprostheses. Biosystems and Biorobotics, 2017, , 23-27.	0.2	0
44	Engagement of the Rat Hindlimb Motor Cortex across Natural Locomotor Behaviors. Journal of Neuroscience, 2016, 36, 10440-10455.	1.7	60
45	A brainâ€"spine interface alleviating gait deficits after spinal cord injury in primates. Nature, 2016, 539, 284-288.	13.7	492
46	Materials and technologies for soft implantable neuroprostheses. Nature Reviews Materials, 2016, 1, .	23.3	485
47	A neurorobotic platform for locomotor prosthetic development in rats and mice. Journal of Neural Engineering, 2016, 13, 026007.	1.8	12
48	Spatiotemporal neuromodulation therapies engaging muscle synergies improve motor control after spinal cord injury. Nature Medicine, 2016, 22, 138-145.	15.2	274
49	Mechanisms Underlying the Neuromodulation of Spinal Circuits for Correcting Gait and Balance Deficits after Spinal Cord Injury. Neuron, 2016, 89, 814-828.	3.8	144
50	Influence of Spinal Cord Integrity on Gait Control in Human Spinal Cord Injury. Neurorehabilitation and Neural Repair, 2016, 30, 562-572.	1.4	23
51	Electronic dura mater for long-term multimodal neural interfaces. Science, 2015, 347, 159-163.	6.0	845
52	Neuroprosthetic technologies to augment the impact of neurorehabilitation after spinal cord injury. Annals of Physical and Rehabilitation Medicine, 2015, 58, 232-237.	1.1	26
53	Defining Ecological Strategies in Neuroprosthetics. Neuron, 2015, 86, 29-33.	3.8	27
54	Lack of additive role of ageing in nigrostriatal neurodegeneration triggered by Î±-synuclein overexpression. Acta Neuropathologica Communications, 2015, 3, 46.	2.4	88

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55	Pronounced species divergence in corticospinal tract reorganization and functional recovery after lateralized spinal cord injury favors primates. Science Translational Medicine, 2015, 7, 302ra134.	5.8	148
56	Research Update: Platinum-elastomer mesocomposite as neural electrode coating. APL Materials, 2015, 3, .	2.2	29
57	Muscle Spindle Feedback Directs Locomotor Recovery and Circuit Reorganization after Spinal Cord Injury. Cell, 2014, 159, 1626-1639.	13.5	257
58	Wireless Neurosensor for Full-Spectrum Electrophysiology Recordings during Free Behavior. Neuron, 2014, 84, 1170-1182.	3.8	200
59	Closed-loop neuromodulation of spinal sensorimotor circuits controls refined locomotion after complete spinal cord injury. Science Translational Medicine, 2014, 6, 255ra133.	5.8	170
60	Corticospinal neuroprostheses to restore locomotion after spinal cord injury. Neuroscience Research, 2014, 78, 21-29.	1.0	47
61	D1 receptor agonist improves sleepâ€“wake parameters in experimental parkinsonism. Neurobiology of Disease, 2014, 63, 20-24.	2.1	37
62	Personalized Neuroprosthetics. Science Translational Medicine, 2013, 5, 210rv2.	5.8	141
63	Soft robot for gait rehabilitation of spinalized rodents. , 2013, , .		23
64	Brainâ€“machine interface: closer to therapeutic reality?. Lancet, The, 2013, 381, 515-517.	6.3	32
65	Multisystem Neuroprosthetic Training Improves Bladder Function After Severe Spinal Cord Injury. Journal of Urology, 2013, 189, 747-753.	0.2	28
66	A Computational Model for Epidural Electrical Stimulation of Spinal Sensorimotor Circuits. Journal of Neuroscience, 2013, 33, 19326-19340.	1.7	320
67	Undirected compensatory plasticity contributes to neuronal dysfunction after severe spinal cord injury. Brain, 2013, 136, 3347-3361.	3.7	102
68	A real-time platform for studying the modulatory capacity of epidural stimulation after spinal cord injury. , 2013, , .		0
69	Methods for Functional Assessment After C7 Spinal Cord Hemisection in the Rhesus Monkey. Neurorehabilitation and Neural Repair, 2012, 26, 556-569.	1.4	43
70	Response to Comment on â€œRestoring Voluntary Control of Locomotion After Paralyzing Spinal Cord Injuryâ€• Science, 2012, 338, 328-328.	6.0	11
71	Versatile robotic interface to evaluate, enable and train locomotion and balance after neuromotor disorders. Nature Medicine, 2012, 18, 1142-1147.	15.2	94
72	Animal Models of Neurologic Disorders: A Nonhuman Primate Model of Spinal Cord Injury. Neurotherapeutics, 2012, 9, 380-392.	2.1	80

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73	Restoring Voluntary Control of Locomotion after Paralyzing Spinal Cord Injury. Science, 2012, 336, 1182-1185.	6.0	701
74	Multi-system neurorehabilitative strategies to restore motor functions following severe spinal cord injury. Experimental Neurology, 2012, 235, 100-109.	2.0	57
75	Controlling Specific Locomotor Behaviors through Multidimensional Monoaminergic Modulation of Spinal Circuitries. Journal of Neuroscience, 2011, 31, 9264-9278.	1.7	132
76	Extensive spontaneous plasticity of corticospinal projections after primate spinal cord injury. Nature Neuroscience, 2010, 13, 1505-1510.	7.1	346
77	Neuroanatomical Study of the A11 Diencephalospinal Pathway in the Non-Human Primate. PLoS ONE, 2010, 5, e13306.	1.1	82
78	Metabolic activity of the subthalamic nucleus in a primate model of L-Dopa-unresponsive parkinsonism. Neurological Research, 2010, 32, 1050-1053.	0.6	2
79	Transformation of nonfunctional spinal circuits into functional states after the loss of brain input. Nature Neuroscience, 2009, 12, 1333-1342.	7.1	620
80	Sleep disorders in Parkinson's disease: The contribution of the MPTP non-human primate model. Experimental Neurology, 2009, 219, 574-582.	2.0	124
81	Combinatory Electrical and Pharmacological Neuroprosthetic Interfaces to Regain Motor Function After Spinal Cord Injury. IEEE Transactions on Biomedical Engineering, 2009, 56, 2707-2711.	2.5	42
82	Recovery of supraspinal control of stepping via indirect propriospinal relay connections after spinal cord injury. Nature Medicine, 2008, 14, 69-74.	15.2	690
83	Training locomotor networks. Brain Research Reviews, 2008, 57, 241-254.	9.1	268
84	Step Training Reinforces Specific Spinal Locomotor Circuitry in Adult Spinal Rats. Journal of Neuroscience, 2008, 28, 7370-7375.	1.7	157
85	Epidural Stimulation Induced Modulation of Spinal Locomotor Networks in Adult Spinal Rats. Journal of Neuroscience, 2008, 28, 6022-6029.	1.7	147
86	Stance- and Locomotion-Dependent Processing of Vibration-Induced Proprioceptive Inflow From Multiple Muscles in Humans. Journal of Neurophysiology, 2007, 97, 772-779.	0.9	87
87	Can experiments in nonhuman primates expedite the translation of treatments for spinal cord injury in humans?. Nature Medicine, 2007, 13, 561-566.	15.2	403
88	Spinal cord reflexes induced by epidural spinal cord stimulation in normal awake rats. Journal of Neuroscience Methods, 2006, 157, 253-263.	1.3	134
89	Plasticity of Spinal Cord Reflexes After a Complete Transection in Adult Rats: Relationship to Stepping Ability. Journal of Neurophysiology, 2006, 96, 1699-1710.	0.9	189
90	Kinematic and EMG Determinants in Quadrupedal Locomotion of a Non-Human Primate (Rhesus). Journal of Neurophysiology, 2005, 93, 3127-3145.	0.9	135

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91	Performance of locomotion and foot grasping following a unilateral thoracic corticospinal tract lesion in monkeys (Macaca mulatta). Brain, 2005, 128, 2338-2358.	3.7	121