# Quentin Barraud

List of Publications by Year
in descending order

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|---|---|---|---|
| 91<br>papers | 12,494<br>citations | 41344<br>49<br>h-index | 53230<br>85<br>g-index |
| 98<br>all docs | 98<br>docs citations | 98<br>times ranked | 9617<br>citing authors |

| # | Article | IF | Citations |
|---|---------|----|-----------|
| 1 | Electronic dura mater for long-term multimodal neural interfaces. Science, 2015, 347, 159-163. | 12.6 | 845 |
| 2 | Targeted neurotechnology restores walking in humans with spinal cord injury. Nature, 2018, 563, 65-71. | 27.8 | 708 |
| 3 | Restoring Voluntary Control of Locomotion after Paralyzing Spinal Cord Injury. Science, 2012, 336, 1182-1185. | 12.6 | 701 |
| 4 | Recovery of supraspinal control of stepping via indirect propriospinal relay connections after spinal cord injury. Nature Medicine, 2008, 14, 69-74. | 30.7 | 690 |
| 5 | Transformation of nonfunctional spinal circuits into functional states after the loss of brain input. Nature Neuroscience, 2009, 12, 1333-1342. | 14.8 | 620 |
| 6 | A brain–spine interface alleviating gait deficits after spinal cord injury in primates. Nature, 2016, 539, 284-288. | 27.8 | 492 |
| 7 | Materials and technologies for soft implantable neuroprostheses. Nature Reviews Materials, 2016, 1, . | 48.7 | 485 |
| 8 | Can experiments in nonhuman primates expedite the translation of treatments for spinal cord injury in humans?. Nature Medicine, 2007, 13, 561-566. | 30.7 | 403 |
| 9 | Extensive spontaneous plasticity of corticospinal projections after primate spinal cord injury. Nature Neuroscience, 2010, 13, 1505-1510. | 14.8 | 346 |
| 10 | Required growth facilitators propel axon regeneration across complete spinal cord injury. Nature, 2018, 561, 396-400. | 27.8 | 341 |
| 11 | Confronting false discoveries in single-cell differential expression. Nature Communications, 2021, 12, 5692. | 12.8 | 332 |
| 12 | Spinal cord repair: advances in biology and technology. Nature Medicine, 2019, 25, 898-908. | 30.7 | 323 |
| 13 | A Computational Model for Epidural Electrical Stimulation of Spinal Sensorimotor Circuits. Journal of Neuroscience, 2013, 33, 19326-19340. | 3.6 | 320 |
| 14 | Spatiotemporal neuromodulation therapies engaging muscle synergies improve motor control after spinal cord injury. Nature Medicine, 2016, 22, 138-145. | 30.7 | 274 |
| 15 | Training locomotor networks. Brain Research Reviews, 2008, 57, 241-254. | 9.0 | 268 |
| 16 | Muscle Spindle Feedback Directs Locomotor Recovery and Circuit Reorganization after Spinal Cord Injury. Cell, 2014, 159, 1626-1639. | 28.9 | 257 |
| 17 | Electrical spinal cord stimulation must preserve proprioception to enable locomotion in humans with spinal cord injury. Nature Neuroscience, 2018, 21, 1728-1741. | 14.8 | 247 |
| 18 | Cortico–reticulo–spinal circuit reorganization enables functional recovery after severe spinal cord contusion. Nature Neuroscience, 2018, 21, 576-588. | 14.8 | 228 |

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|---|---------|----|-----------|
| 19 | Wireless Neurosensor for Full-Spectrum Electrophysiology Recordings during Free Behavior. Neuron, 2014, 84, 1170-1182. | 8.1 | 200 |
| 20 | Plasticity of Spinal Cord Reflexes After a Complete Transection in Adult Rats: Relationship to Stepping Ability. Journal of Neurophysiology, 2006, 96, 1699-1710. | 1.8 | 189 |
| 21 | Activity-dependent spinal cord neuromodulation rapidly restores trunk and leg motor functions after complete paralysis. Nature Medicine, 2022, 28, 260-271. | 30.7 | 174 |
| 22 | Closed-loop neuromodulation of spinal sensorimotor circuits controls refined locomotion after complete spinal cord injury. Science Translational Medicine, 2014, 6, 255ra133. | 12.4 | 170 |
| 23 | Step Training Reinforces Specific Spinal Locomotor Circuitry in Adult Spinal Rats. Journal of Neuroscience, 2008, 28, 7370-7375. | 3.6 | 157 |
| 24 | Pronounced species divergence in corticospinal tract reorganization and functional recovery after lateralized spinal cord injury favors primates. Science Translational Medicine, 2015, 7, 302ra134. | 12.4 | 148 |
| 25 | Epidural Stimulation Induced Modulation of Spinal Locomotor Networks in Adult Spinal Rats. Journal of Neuroscience, 2008, 28, 6022-6029. | 3.6 | 147 |
| 26 | Mechanisms Underlying the Neuromodulation of Spinal Circuits for Correcting Gait and Balance Deficits after Spinal Cord Injury. Neuron, 2016, 89, 814-828. | 8.1 | 144 |
| 27 | Personalized Neuroprosthetics. Science Translational Medicine, 2013, 5, 210rv2. | 12.4 | 141 |
| 28 | Kinematic and EMG Determinants in Quadrupedal Locomotion of a Non-Human Primate (Rhesus). Journal of Neurophysiology, 2005, 93, 3127-3145. | 1.8 | 135 |
| 29 | Spinal cord reflexes induced by epidural spinal cord stimulation in normal awake rats. Journal of Neuroscience Methods, 2006, 157, 253-263. | 2.5 | 134 |
| 30 | Controlling Specific Locomotor Behaviors through Multidimensional Monoaminergic Modulation of Spinal Circuitries. Journal of Neuroscience, 2011, 31, 9264-9278. | 3.6 | 132 |
| 31 | Long-term usability and bio-integration of polyimide-based intra-neural stimulating electrodes. Biomaterials, 2017, 122, 114-129. | 11.4 | 132 |
| 32 | Sleep disorders in Parkinson's disease: The contribution of the MPTP non-human primate model. Experimental Neurology, 2009, 219, 574-582. | 4.1 | 124 |
| 33 | Performance of locomotion and foot grasping following a unilateral thoracic corticospinal tract lesion in monkeys (Macaca mulatta). Brain, 2005, 128, 2338-2358. | 7.6 | 121 |
| 34 | Brain-controlled modulation of spinal circuits improves recovery from spinal cord injury. Nature Communications, 2018, 9, 3015. | 12.8 | 108 |
| 35 | Undirected compensatory plasticity contributes to neuronal dysfunction after severe spinal cord injury. Brain, 2013, 136, 3347-3361. | 7.6 | 102 |
| 36 | Configuration of electrical spinal cord stimulation through real-time processing of gait kinematics. Nature Protocols, 2018, 13, 2031-2061. | 12.0 | 96 |

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|---|---------|-----|-----------|
| 37 | Cell type prioritization in single-cell data. Nature Biotechnology, 2021, 39, 30-34. | 17.5 | 96 |
| 38 | Neuroprosthetic baroreflex controls haemodynamics after spinal cord injury. Nature, 2021, 590, 308-314. | 27.8 | 96 |
| 39 | Versatile robotic interface to evaluate, enable and train locomotion and balance after neuromotor disorders. Nature Medicine, 2012, 18, 1142-1147. | 30.7 | 94 |
| 40 | Recruitment of upper-limb motoneurons with epidural electrical stimulation of the cervical spinal cord. Nature Communications, 2021, 12, 435. | 12.8 | 92 |
| 41 | Lack of additive role of ageing in nigrostriatal neurodegeneration triggered by Î±-synuclein overexpression. Acta Neuropathologica Communications, 2015, 3, 46. | 5.2 | 88 |
| 42 | Stance- and Locomotion-Dependent Processing of Vibration-Induced Proprioceptive Inflow From Multiple Muscles in Humans. Journal of Neurophysiology, 2007, 97, 772-779. | 1.8 | 87 |
| 43 | Neuroanatomical Study of the A11 Diencephalospinal Pathway in the Non-Human Primate. PLoS ONE, 2010, 5, e13306. | 2.5 | 82 |
| 44 | Animal Models of Neurologic Disorders: A Nonhuman Primate Model of Spinal Cord Injury. Neurotherapeutics, 2012, 9, 380-392. | 4.4 | 80 |
| 45 | Cbp-dependent histone acetylation mediates axon regeneration induced by environmental enrichment in rodent spinal cord injury models. Science Translational Medicine, 2019, 11, . | 12.4 | 79 |
| 46 | Biodegradable scaffolds promote tissue remodeling and functional improvement in non-human primates with acute spinal cord injury. Biomaterials, 2017, 123, 63-76. | 11.4 | 75 |
| 47 | Soft, Implantable Bioelectronic Interfaces for Translational Research. Advanced Materials, 2020, 32, e1906512. | 21.0 | 67 |
| 48 | Engagement of the Rat Hindlimb Motor Cortex across Natural Locomotor Behaviors. Journal of Neuroscience, 2016, 36, 10440-10455. | 3.6 | 60 |
| 49 | Structured nanoscale metallic glass fibres with extreme aspect ratios. Nature Nanotechnology, 2020, 15, 875-882. | 31.5 | 59 |
| 50 | Multi-system neurorehabilitative strategies to restore motor functions following severe spinal cord injury. Experimental Neurology, 2012, 235, 100-109. | 4.1 | 57 |
| 51 | Guidelines to Study and Develop Soft Electrode Systems for Neural Stimulation. Neuron, 2020, 108, 238-258. | 8.1 | 49 |
| 52 | Wireless closed-loop optogenetics across the entire dorsoventral spinal cord in mice. Nature Biotechnology, 2022, 40, 198-208. | 17.5 | 48 |
| 53 | Corticospinal neuroprostheses to restore locomotion after spinal cord injury. Neuroscience Research, 2014, 78, 21-29. | 1.9 | 47 |
| 54 | Methods for Functional Assessment After C7 Spinal Cord Hemisection in the Rhesus Monkey. Neurorehabilitation and Neural Repair, 2012, 26, 556-569. | 2.9 | 43 |

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|---|---------|-----|-----------|
| 55 | Combinatory Electrical and Pharmacological Neuroprosthetic Interfaces to Regain Motor Function After Spinal Cord Injury. IEEE Transactions on Biomedical Engineering, 2009, 56, 2707-2711. | 4.2 | 42 |
| 56 | A multidirectional gravity-assist algorithm that enhances locomotor control in patients with stroke or spinal cord injury. Science Translational Medicine, 2017, 9, . | 12.4 | 42 |
| 57 | Advantages of soft subdural implants for the delivery of electrochemical neuromodulation therapies to the spinal cord. Journal of Neural Engineering, 2018, 15, 026024. | 3.5 | 41 |
| 58 | D1 receptor agonist improves sleep–wake parameters in experimental parkinsonism. Neurobiology of Disease, 2014, 63, 20-24. | 4.4 | 37 |
| 59 | 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. | 12.8 | 35 |
| 60 | Soft Printable Electrode Coating for Neural Interfaces. ACS Applied Bio Materials, 2020, 3, 4388-4397. | 4.6 | 33 |
| 61 | MRI–Compatible and Conformal Electrocorticography Grids for Translational Research. Advanced Science, 2021, 8, 2003761. | 11.2 | 33 |
| 62 | Brain–machine interface: closer to therapeutic reality?. Lancet, The, 2013, 381, 515-517. | 13.7 | 32 |
| 63 | Closed-loop control of trunk posture improves locomotion through the regulation of leg proprioceptive feedback after spinal cord injury. Scientific Reports, 2018, 8, 76. | 3.3 | 30 |
| 64 | Epidural electrical stimulation of the cervical dorsal roots restores voluntary upper limb control in paralyzed monkeys. Nature Neuroscience, 2022, 25, 924-934. | 14.8 | 30 |
| 65 | Research Update: Platinum-elastomer mesocomposite as neural electrode coating. APL Materials, 2015, 3, . | 5.1 | 29 |
| 66 | Multisystem Neuroprosthetic Training Improves Bladder Function After Severe Spinal Cord Injury. Journal of Urology, 2013, 189, 747-753. | 0.4 | 28 |
| 67 | Defining Ecological Strategies in Neuroprosthetics. Neuron, 2015, 86, 29-33. | 8.1 | 27 |
| 68 | Neuroprosthetic technologies to augment the impact of neurorehabilitation after spinal cord injury. Annals of Physical and Rehabilitation Medicine, 2015, 58, 232-237. | 2.3 | 26 |
| 69 | Monolayer Graphene Coating of Intracortical Probes for Long–Lasting Neural Activity Monitoring. Advanced Healthcare Materials, 2019, 8, e1801331. | 7.6 | 25 |
| 70 | Soft robot for gait rehabilitation of spinalized rodents. , 2013, , . | | 23 |
| 71 | Influence of Spinal Cord Integrity on Gait Control in Human Spinal Cord Injury. Neurorehabilitation and Neural Repair, 2016, 30, 562-572. | 2.9 | 23 |
| 72 | Neurorestorative interventions involving bioelectronic implants after spinal cord injury. Bioelectronic Medicine, 2019, 5, 10. | 2.3 | 22 |

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|---|---------|-----|-----------|
| 73 | Prioritization of cell types responsive to biological perturbations in single-cell data with Augur. Nature Protocols, 2021, 16, 3836-3873. | 12.0 | 22 |
| 74 | Engineering spinal cord repair. Current Opinion in Biotechnology, 2021, 72, 48-53. | 6.6 | 18 |
| 75 | Inhaling xenon ameliorates <scp>l</scp>â€dopaâ€induced dyskinesia in experimental parkinsonism. Movement Disorders, 2018, 33, 1632-1642. | 3.9 | 15 |
| 76 | Low-Dimensional Motor Cortex Dynamics Preserve Kinematics Information During Unconstrained Locomotion in Nonhuman Primates. Frontiers in Neuroscience, 2019, 13, 1046. | 2.8 | 14 |
| 77 | Meeting Proceedings for SCI 2020: Launching a Decade of Disruption in Spinal Cord Injury Research. Journal of Neurotrauma, 2021, 38, 1251-1266. | 3.4 | 14 |
| 78 | 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. | 4.4 | 14 |
| 79 | A neurorobotic platform for locomotor prosthetic development in rats and mice. Journal of Neural Engineering, 2016, 13, 026007. | 3.5 | 12 |
| 80 | Rehabilitative Soft Exoskeleton for Rodents. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25, 107-118. | 4.9 | 12 |
| 81 | Response to Comment on â€œRestoring Voluntary Control of Locomotion After Paralyzing Spinal Cord Injuryâ€. Science, 2012, 338, 328-328. | 12.6 | 11 |
| 82 | Selective Recruitment of Arm Motoneurons in Nonhuman Primates Using Epidural Electrical Stimulation of the Cervical Spinal Cord. , 2018, 2018, 1424-1427. | | 10 |
| 83 | Enabling reproducible re-analysis of single-cell data. Genome Biology, 2021, 22, 215. | 8.8 | 9 |
| 84 | Long-term functionality of a soft electrode array for epidural spinal cord stimulation in a minipig model. , 2018, 2018, 1432-1435. | | 8 |
| 85 | Preclinical upper limb neurorobotic platform to assess, rehabilitate, and develop therapies. Science Robotics, 2022, 7, eabk2378. | 17.6 | 7 |
| 86 | Introducing a biomimetic coating for graphene neuroelectronics: toward in-vivo applications. Biomedical Physics and Engineering Express, 2021, 7, 015006. | 1.2 | 3 |
| 87 | Metabolic activity of the subthalamic nucleus in a primate model of L-Dopa-unresponsive parkinsonism. Neurological Research, 2010, 32, 1050-1053. | 1.3 | 2 |
| 88 | Reducing neuronal inhibition restores locomotion in paralysed mice. Nature, 2018, 561, 317-318. | 27.8 | 2 |
| 89 | A real-time platform for studying the modulatory capacity of epidural stimulation after spinal cord injury. , 2013, , . | | 0 |
| 90 | A Computational Framework for the Design of Spinal Neuroprostheses. Biosystems and Biorobotics, 2017, , 23-27. | 0.3 | 0 |

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|---|---------|-----|-----------|
| 91 | Optogenetic Interrogation of Circuits Following Neurotrauma. Frontiers in Molecular Neuroscience, 2021, 14, 803856. | 2.9 | 0 |