# Dean V Buonomano

## List of Publications by Year in Descending Order



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|---|---|---|---|
| 71 papers | 7,080 citations | 36 h-index | 81 g-index |
| 81 ext. papers | 8,230 ext. citations | 7.6 avg, IF | 6.44 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 71 | Encoding time in neural dynamic regimes with distinct computational tradeoffs.. *PLoS Computational Biology*, **2022**, 18, e1009271 | 5 | 0 |
| 70 | The orbitofrontal cortex in temporal cognition. *Behavioral Neuroscience*, **2021**, 135, 154-164 | 2.1 | 0 |
| 69 | Differential Excitability of PV and SST Neurons Results in Distinct Functional Roles in Inhibition Stabilization of Up States. *Journal of Neuroscience*, **2021**, 41, 7182-7196 | 6.6 | 1 |
| 68 | Musical expertise generalizes to superior temporal scaling in a Morse code tapping task. *PLoS ONE*, **2020**, 15, e0221000 | 3.7 | 2 |
| 67 | Differential Short-Term Plasticity of PV and SST Neurons Accounts for Adaptation and Facilitation of Cortical Neurons to Auditory Tones. *Journal of Neuroscience*, **2020**, 40, 9224-9235 | 6.6 | 3 |
| 66 | Neural Sequences as an Optimal Dynamical Regime for the Readout of Time. *Neuron*, **2020**, 108, 651-658.e5 | 13.9 | 15 |
| 65 | Decreased reproducibility and abnormal experience-dependent plasticity of network dynamics in Fragile X circuits. *Scientific Reports*, **2020**, 10, 14535 | 4.9 | 3 |
| 64 | Musical expertise generalizes to superior temporal scaling in a Morse code tapping task **2020**, 15, e0221000 | | |
| 63 | Musical expertise generalizes to superior temporal scaling in a Morse code tapping task **2020**, 15, e0221000 | | |
| 62 | Musical expertise generalizes to superior temporal scaling in a Morse code tapping task **2020**, 15, e0221000 | | |
| 61 | Musical expertise generalizes to superior temporal scaling in a Morse code tapping task **2020**, 15, e0221000 | | |
| 60 | Author response: Encoding sensory and motor patterns as time-invariant trajectories in recurrent neural networks **2018**, | | 2 |
| 59 | Encoding Time in Feedforward Trajectories of a Recurrent Neural Network Model. *Neural Computation*, **2018**, 30, 378-396 | 2.9 | 20 |
| 58 | A model of temporal scaling correctly predicts that motor timing improves with speed. *Nature Communications*, **2018**, 9, 4732 | 17.4 | 23 |
| 57 | Short-Term Synaptic Plasticity as a Mechanism for Sensory Timing. *Trends in Neurosciences*, **2018**, 41, 701-711 | 13.3 | 17 |
| 56 | The Neural Basis of Timing: Distributed Mechanisms for Diverse Functions. *Neuron*, **2018**, 98, 687-705 | 13.9 | 135 |
| 55 | Encoding sensory and motor patterns as time-invariant trajectories in recurrent neural networks. *ELife*, **2018**, 7, | 8.9 | 42 |

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| 54 | Differential Encoding of Time by Prefrontal and Striatal Network Dynamics. *Journal of Neuroscience* , **2017**, 37, 854-870 | 6.6 | 75 |
| 53 | Differential Encoding of Time by Prefrontal and Striatal Network Dynamics. *Journal of Neuroscience* , **2017**, 37, 854-870 | 6.6 | 3 |
| 52 | Temporal Interval Learning in Cortical Cultures Is Encoded in Intrinsic Network Dynamics. *Neuron*, **2016**, 91, 320-7 | 13.9 | 22 |
| 51 | Utilizing the Cortico-Striatal Projectome to Advance the Study of Timing and Time Perception. *Timing and Time Perception*, **2016**, 4, 411-422 | 0.7 | 1 |
| 50 | Neurocomputational Models of Interval and Pattern Timing. *Current Opinion in Behavioral Sciences*, **2016**, 8, 250-257 | 4 | 34 |
| 49 | Neural coding: time contraction and dilation in the striatum. *Current Biology*, **2015**, 25, R374-6 | 6.3 | 2 |
| 48 | Time in Cortical Circuits. *Journal of Neuroscience*, **2015**, 35, 13912-6 | 6.6 | 50 |
| 47 | Delayed in vitro development of Up states but normal network plasticity in Fragile X circuits. *European Journal of Neuroscience*, **2015**, 42, 2312-21 | 3.5 | 9 |
| 46 | A model of order-selectivity based on dynamic changes in the balance of excitation and inhibition produced by short-term synaptic plasticity. *Journal of Neurophysiology*, **2015**, 113, 509-23 | 3.2 | 17 |
| 45 | Multifocal fluorescence microscope for fast optical recordings of neuronal action potentials. *Biophysical Journal*, **2015**, 108, 520-9 | 2.9 | 4 |
| 44 | Temporal Perceptual Learning. *Timing and Time Perception*, **2014**, 2, 261-289 | 0.7 | 20 |
| 43 | Timing as an intrinsic property of neural networks: evidence from in vivo and in vitro experiments. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2014**, 369, 20120460 | 5.8 | 62 |
| 42 | Neural dynamics based timing in the subsecond to seconds range. *Advances in Experimental Medicine and Biology*, **2014**, 829, 101-17 | 3.6 | 14 |
| 41 | Robust timing and motor patterns by taming chaos in recurrent neural networks. *Nature Neuroscience*, **2013**, 16, 925-33 | 25.5 | 278 |
| 40 | Chronic electrical stimulation homeostatically decreases spontaneous activity, but paradoxically increases evoked network activity. *Journal of Neurophysiology*, **2013**, 109, 1824-36 | 3.2 | 11 |
| 39 | Developmental shift of short-term synaptic plasticity in cortical organotypic slices. *Neuroscience*, **2012**, 213, 38-46 | 3.9 | 6 |
| 38 | Unsupervised formation of vocalization-sensitive neurons: a cortical model based on short-term and homeostatic plasticity. *Neural Computation*, **2012**, 24, 2579-603 | 2.9 | 14 |
| 37 | Population Clocks: Motor Timing with Neural Dynamics **2011**, 71-85 | | 4 |

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| 36 | A novel learning rule for long-term plasticity of short-term synaptic plasticity enhances temporal processing. *Frontiers in Integrative Neuroscience*, **2011**, 5, 20 | 3.2 | 23 |
| 35 | Learning of temporal motor patterns: an analysis of continuous versus reset timing. *Frontiers in Integrative Neuroscience*, **2011**, 5, 61 | 3.2 | 23 |
| 34 | Neural dynamics of in vitro cortical networks reflects experienced temporal patterns. *Nature Neuroscience*, **2010**, 13, 917-9 | 25.5 | 67 |
| 33 | Population clocks: motor timing with neural dynamics. *Trends in Cognitive Sciences*, **2010**, 14, 520-7 | 14 | 114 |
| 32 | Embedding multiple trajectories in simulated recurrent neural networks in a self-organizing manner. *Journal of Neuroscience*, **2009**, 29, 13172-81 | 6.6 | 71 |
| 31 | Influence of the interstimulus interval on temporal processing and learning: testing the state-dependent network model. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2009**, 364, 1865-73 | 5.8 | 63 |
| 30 | State-dependent computations: spatiotemporal processing in cortical networks. *Nature Reviews Neuroscience*, **2009**, 10, 113-25 | 13.5 | 605 |
| 29 | A method for chronic stimulation of cortical organotypic cultures using implanted electrodes. *Journal of Neuroscience Methods*, **2009**, 176, 136-43 | 3 | 8 |
| 28 | Differential effects of excitatory and inhibitory plasticity on synaptically driven neuronal input-output functions. *Neuron*, **2009**, 61, 774-85 | 13.9 | 72 |
| 27 | Harnessing chaos in recurrent neural networks. *Neuron*, **2009**, 63, 423-5 | 13.9 | 13 |
| 26 | Distortions of subjective time perception within and across senses. *PLoS ONE*, **2008**, 3, e1437 | 3.7 | 119 |
| 25 | The biology of time across different scales. *Nature Chemical Biology*, **2007**, 3, 594-7 | 11.7 | 82 |
| 24 | Development and plasticity of spontaneous activity and Up states in cortical organotypic slices. *Journal of Neuroscience*, **2007**, 27, 5915-25 | 6.6 | 58 |
| 23 | Timing in the absence of clocks: encoding time in neural network states. *Neuron*, **2007**, 53, 427-38 | 13.9 | 416 |
| 22 | Different forms of homeostatic plasticity are engaged with distinct temporal profiles. *European Journal of Neuroscience*, **2006**, 23, 1575-84 | 3.5 | 78 |
| 21 | Time and the brain: how subjective time relates to neural time. *Journal of Neuroscience*, **2005**, 25, 10369-71 | 6.6 | 127 |
| 20 | A technique for repeated recordings in cortical organotypic slices. *Journal of Neuroscience Methods*, **2005**, 146, 69-75 | 3 | 14 |
| 19 | A learning rule for the emergence of stable dynamics and timing in recurrent networks. *Journal of Neurophysiology*, **2005**, 94, 2275-83 | 3.2 | 63 |

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| 18 | Timing and balance of inhibition enhance the effect of long-term potentiation on cell firing. *Journal of Neuroscience*, **2004**, 24, 8873-84 | 6.6 | 46 |
| 17 | The neural basis of temporal processing. *Annual Review of Neuroscience*, **2004**, 27, 307-40 | 17 | 633 |
| 16 | Timing of neural responses in cortical organotypic slices. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 4897-902 | 11.5 | 73 |
| 15 | Differential effects of short- and long-term potentiation on cell firing in the CA1 region of the hippocampus. *Journal of Neuroscience*, **2003**, 23, 112-21 | 6.6 | 40 |
| 14 | Temporal specificity of perceptual learning in an auditory discrimination task. *Learning and Memory*, **2003**, 10, 141-7 | 2.8 | 92 |
| 13 | A model of spike-timing dependent plasticity: one or two coincidence detectors?. *Journal of Neurophysiology*, **2002**, 88, 507-13 | 3.2 | 123 |
| 12 | Mechanisms and significance of spike-timing dependent plasticity. *Biological Cybernetics*, **2002**, 87, 373-82 | 2.8 | 49 |
| 11 | How do we tell time?. *Neuroscientist*, **2002**, 8, 42-51 | 7.6 | 142 |
| 10 | Decoding temporal information: A model based on short-term synaptic plasticity. *Journal of Neuroscience*, **2000**, 20, 1129-41 | 6.6 | 246 |
| 9 | Distinct functional types of associative long-term potentiation in neocortical and hippocampal pyramidal neurons. *Journal of Neuroscience*, **1999**, 19, 6748-54 | 6.6 | 47 |
| 8 | A neural network model of temporal code generation and position-invariant pattern recognition. *Neural Computation*, **1999**, 11, 103-16 | 2.9 | 36 |
| 7 | Cortical plasticity: from synapses to maps. *Annual Review of Neuroscience*, **1998**, 21, 149-86 | 17 | 1644 |
| 6 | Net interaction between different forms of short-term synaptic plasticity and slow-IPSPs in the hippocampus and auditory cortex. *Journal of Neurophysiology*, **1998**, 80, 1765-74 | 3.2 | 69 |
| 5 | Learning and generalization of auditory temporal-interval discrimination in humans. *Journal of Neuroscience*, **1997**, 17, 3956-63 | 6.6 | 227 |
| 4 | Temporal information transformed into a spatial code by a neural network with realistic properties. *Science*, **1995**, 267, 1028-30 | 33.3 | 333 |
| 3 | Neural Network Model of the Cerebellum: Temporal Discrimination and the Timing of Motor Responses. *Neural Computation*, **1994**, 6, 38-55 | 2.9 | 269 |
| 2 | Inhibitory neuron produces heterosynaptic inhibition of the sensory-to-motor neuron synapse in Aplysia. *Brain Research*, **1992**, 577, 147-50 | 3.7 | 20 |
| 1 | Neural and molecular bases of nonassociative and associative learning in Aplysia. *Annals of the New York Academy of Sciences*, **1991**, 627, 124-49 | 6.5 | 77 |