

# Vikaas S Sohal

## List of Publications by Year in descending order

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92  
papers

9,619  
citations

94433

37  
h-index

66911

78  
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103  
all docs

103  
docs citations

103  
times ranked

12334  
citing authors

#	ARTICLE	IF	CITATIONS
1	Parvalbumin neurons and gamma rhythms enhance cortical circuit performance. <i>Nature</i> , 2009, 459, 698-702.	27.8	2,258
2	Neocortical excitation/inhibition balance in information processing and social dysfunction. <i>Nature</i> , 2011, 477, 171-178.	27.8	2,036
3	Ultrafast optogenetic control. <i>Nature Neuroscience</i> , 2010, 13, 387-392.	14.8	660
4	Excitation-inhibition balance as a framework for investigating mechanisms in neuropsychiatric disorders. <i>Molecular Psychiatry</i> , 2019, 24, 1248-1257.	7.9	531
5	Gamma Rhythms Link Prefrontal Interneuron Dysfunction with Cognitive Inflexibility in <i>Dlx5/6+/-</i> Mice. <i>Neuron</i> , 2015, 85, 1332-1343.	8.1	292
6	Synaptic Activity Unmasks Dopamine D2 Receptor Modulation of a Specific Class of Layer V Pyramidal Neurons in Prefrontal Cortex. <i>Journal of Neuroscience</i> , 2012, 32, 4959-4971.	3.6	194
7	Pyramidal Neurons in Prefrontal Cortex Receive Subtype-Specific Forms of Excitation and Inhibition. <i>Neuron</i> , 2014, 81, 61-68.	8.1	177
8	<i>Dlx5</i> and <i>Dlx6</i> Regulate the Development of Parvalbumin-Expressing Cortical Interneurons. <i>Journal of Neuroscience</i> , 2010, 30, 5334-5345.	3.6	162
9	A Class of GABAergic Neurons in the Prefrontal Cortex Sends Long-Range Projections to the Nucleus Accumbens and Elicits Acute Avoidance Behavior. <i>Journal of Neuroscience</i> , 2014, 34, 11519-11525.	3.6	152
10	Dynamic, Cell-Type-Specific Roles for GABAergic Interneurons in a Mouse Model of Optogenetically Inducible Seizures. <i>Neuron</i> , 2017, 93, 291-298.	8.1	128
11	Energy-Looping Nanoparticles: Harnessing Excited-State Absorption for Deep-Tissue Imaging. <i>ACS Nano</i> , 2016, 10, 8423-8433.	14.6	122
12	A Shared Vision for Machine Learning in Neuroscience. <i>Journal of Neuroscience</i> , 2018, 38, 1601-1607.	3.6	121
13	An Amygdala-Hippocampus Subnetwork that Encodes Variation in Human Mood. <i>Cell</i> , 2018, 175, 1688-1700.e14.	28.9	119
14	Neural Oscillations and Synchrony in Brain Dysfunction and Neuropsychiatric Disorders. <i>JAMA Psychiatry</i> , 2015, 72, 840.	11.0	115
15	The Parvalbumin/Somatostatin Ratio Is Increased in Pten Mutant Mice and by Human PTEN ASD Alleles. <i>Cell Reports</i> , 2015, 11, 944-956.	6.4	111
16	The CaMKII/NMDA receptor complex controls hippocampal synaptic transmission by kinase-dependent and independent mechanisms. <i>Nature Communications</i> , 2018, 9, 2069.	12.8	110
17	The Psychiatric Cell Map Initiative: A Convergent Systems Biological Approach to Illuminating Key Molecular Pathways in Neuropsychiatric Disorders. <i>Cell</i> , 2018, 174, 505-520.	28.9	108
18	Microcircuit Mechanisms through which Mediodorsal Thalamic Input to Anterior Cingulate Cortex Exacerbates Pain-Related Aversion. <i>Neuron</i> , 2019, 102, 944-959.e3.	8.1	106

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19	Insights into Cortical Oscillations Arising from Optogenetic Studies. <i>Biological Psychiatry</i> , 2012, 71, 1039-1045.	1.3	99
20	Reciprocal Inhibitory Connections Regulate the Spatiotemporal Properties of Intrathalamic Oscillations. <i>Journal of Neuroscience</i> , 2000, 20, 1735-1745.	3.6	90
21	Dynamic GABA <sub>A</sub> Receptor Subtype-Specific Modulation of the Synchrony and Duration of Thalamic Oscillations. <i>Journal of Neuroscience</i> , 2003, 23, 3649-3657.	3.6	86
22	Tonic or Phasic Stimulation of Dopaminergic Projections to Prefrontal Cortex Causes Mice to Maintain or Deviate from Previously Learned Behavioral Strategies. <i>Journal of Neuroscience</i> , 2017, 37, 8315-8329.	3.6	84
23	Neonatal Tbr1 Dosage Controls Cortical Layer 6 Connectivity. <i>Neuron</i> , 2018, 100, 831-845.e7.	8.1	83
24	How Close Are We to Understanding What (if Anything) $\beta^3$ Oscillations Do in Cortical Circuits?. <i>Journal of Neuroscience</i> , 2016, 36, 10489-10495.	3.6	81
25	D3 Receptors Regulate Excitability in a Unique Class of Prefrontal Pyramidal Cells. <i>Journal of Neuroscience</i> , 2017, 37, 5846-5860.	3.6	77
26	Inhibitory Interconnections Control Burst Pattern and Emergent Network Synchrony in Reticular Thalamus. <i>Journal of Neuroscience</i> , 2003, 23, 8978-8988.	3.6	75
27	Changes in GABAB Modulation During a Theta Cycle May Be Analogous to the Fall of Temperature During Annealing. <i>Neural Computation</i> , 1998, 10, 869-882.	2.2	72
28	Roles of Prefrontal Cortex and Mediodorsal Thalamus in Task Engagement and Behavioral Flexibility. <i>Journal of Neuroscience</i> , 2018, 38, 2569-2578.	3.6	71
29	Mouse <i>Cntnap2</i> and Human <i>CNTNAP2</i> ASD Alleles Cell Autonomously Regulate PV+ Cortical Interneurons. <i>Cerebral Cortex</i> , 2018, 28, 3868-3879.	2.9	71
30	VIP Interneurons Contribute to Avoidance Behavior by Regulating Information Flow across Hippocampal-Prefrontal Networks. <i>Neuron</i> , 2019, 102, 1223-1234.e4.	8.1	70
31	Responsive Neurostimulation Suppresses Synchronized Cortical Rhythms in Patients with Epilepsy. <i>Neurosurgery Clinics of North America</i> , 2011, 22, 481-488.	1.7	63
32	Immediate Mood Scaler: Tracking Symptoms of Depression and Anxiety Using a Novel Mobile Mood Scale. <i>JMIR MHealth and UHealth</i> , 2017, 5, e44.	3.7	63
33	Cross-hemispheric gamma synchrony between prefrontal parvalbumin interneurons supports behavioral adaptation during rule shift learning. <i>Nature Neuroscience</i> , 2020, 23, 892-902.	14.8	50
34	GABAergic cell transplants in the anterior cingulate cortex reduce neuropathic pain aversiveness. <i>Brain</i> , 2019, 142, 2655-2669.	7.6	49
35	Top-down control of hippocampal signal-to-noise by prefrontal long-range inhibition. <i>Cell</i> , 2022, 185, 1602-1617.e17.	28.9	48
36	Intrinsic and Synaptic Dynamics Interact to Generate Emergent Patterns of Rhythmic Bursting in Thalamocortical Neurons. <i>Journal of Neuroscience</i> , 2006, 26, 4247-4255.	3.6	47

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37	A model for experience-dependent changes in the responses of inferotemporal neurons. <i>Network: Computation in Neural Systems</i> , 2000, 11, 169-190.	3.6	45
38	Inhibitory coupling specifically generates emergent gamma oscillations in diverse cell types. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 18638-18643.	7.1	41
39	Serotonin 1B Receptors Regulate Prefrontal Function by Gating Callosal and Hippocampal Inputs. <i>Cell Reports</i> , 2016, 17, 2882-2890.	6.4	41
40	GABAB modulation improves sequence disambiguation in computational models of hippocampal region CA3. <i>Hippocampus</i> , 1998, 8, 171-193.	1.9	40
41	Serotonin enhances excitability and gamma frequency temporal integration in mouse prefrontal fast-spiking interneurons. <i>ELife</i> , 2017, 6, .	6.0	39
42	Tsc1 represses parvalbumin expression and fast-spiking properties in somatostatin lineage cortical interneurons. <i>Nature Communications</i> , 2019, 10, 4994.	12.8	39
43	Ultrasonic sculpting of virtual optical waveguides in tissue. <i>Nature Communications</i> , 2019, 10, 92.	12.8	39
44	Coordinated neuronal ensembles in primary auditory cortical columns. <i>ELife</i> , 2018, 7, .	6.0	38
45	Repeated Mild Head Injury Leads to Wide-Ranging Deficits in Higher-Order Cognitive Functions Associated with the Prefrontal Cortex. <i>Journal of Neurotrauma</i> , 2018, 35, 2425-2434.	3.4	37
46	Enhancing WNT Signaling Restores Cortical Neuronal Spine Maturation and Synaptogenesis in Tbr1 Mutants. <i>Cell Reports</i> , 2020, 31, 107495.	6.4	32
47	Chronic reduction in inhibition reduces receptive field size in mouse auditory cortex. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 13829-13834.	7.1	30
48	Integrated Stress Response Inhibitor Reverses Sex-Dependent Behavioral and Cell-Specific Deficits after Mild Repetitive Head Trauma. <i>Journal of Neurotrauma</i> , 2020, 37, 1370-1380.	3.4	29
49	Dopamine D2 Receptors Modulate Pyramidal Neurons in Mouse Medial Prefrontal Cortex through a Stimulatory G-Protein Pathway. <i>Journal of Neuroscience</i> , 2017, 37, 10063-10073.	3.6	26
50	GluN2D-mediated excitatory drive onto medial prefrontal cortical PV+ fast-spiking inhibitory interneurons. <i>PLoS ONE</i> , 2020, 15, e0233895.	2.5	25
51	Fate mapping of neural stem cell niches reveals distinct origins of human cortical astrocytes. <i>Science</i> , 2022, 376, 1441-1446.	12.6	25
52	The Cytokine CXCL12 Promotes Basket Interneuron Inhibitory Synapses in the Medial Prefrontal Cortex. <i>Cerebral Cortex</i> , 2017, 27, 4303-4313.	2.9	24
53	Putative Microcircuit-Level Substrates for Attention Are Disrupted in Mouse Models of Autism. <i>Biological Psychiatry</i> , 2016, 79, 667-675.	1.3	23
54	Altered hippocampal-prefrontal communication during anxiety-related avoidance in mice deficient for the autism-associated gene <i>Pogz</i> . <i>ELife</i> , 2020, 9, .	6.0	22

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55	Of Mice, Men, and Microbial Opsins: How Optogenetics Can Help Hone Mouse Models of Mental Illness. <i>Biological Psychiatry</i> , 2016, 79, 47-52.	1.3	20
56	Dynamic patterns of correlated activity in the prefrontal cortex encode information about social behavior. <i>PLoS Biology</i> , 2021, 19, e3001235.	5.6	19
57	A model for experience-dependent changes in the responses of inferotemporal neurons. <i>Network: Computation in Neural Systems</i> , 2000, 11, 169-190.	3.6	19
58	Interneuron Transplantation Rescues Social Behavior Deficits without Restoring Wild-Type Physiology in a Mouse Model of Autism with Excessive Synaptic Inhibition. <i>Journal of Neuroscience</i> , 2020, 40, 2215-2227.	3.6	17
59	Optogenetic approaches for investigating neural pathways implicated in schizophrenia and related disorders. <i>Human Molecular Genetics</i> , 2014, 23, R64-R68.	2.9	16
60	Upconverting nanoparticle micro-lightbulbs designed for deep tissue optical stimulation and imaging. <i>Biomedical Optics Express</i> , 2018, 9, 4359.	2.9	16
61	Transforming Discoveries About Cortical Microcircuits and Gamma Oscillations Into New Treatments for Cognitive Deficits in Schizophrenia. <i>American Journal of Psychiatry</i> , 2022, 179, 267-276.	7.2	16
62	Long-Range Connections Synchronize Rather Than Spread Intrathalamic Oscillations: Computational Modeling and In Vitro Electrophysiology. <i>Journal of Neurophysiology</i> , 1998, 80, 1736-1751.	1.8	15
63	Regulatory Elements Inserted into AAVs Confer Preferential Activity in Cortical Interneurons. <i>ENeuro</i> , 2020, 7, ENEURO.0211-20.2020.	1.9	12
64	It Takes T to Tango. <i>Neuron</i> , 2001, 31, 3-4.	8.1	10
65	Reciprocal inhibition controls the oscillatory state in thalamic networks. <i>Neurocomputing</i> , 2002, 44-46, 653-659.	5.9	9
66	Correlations between prefrontal neurons form a small-world network that optimizes the generation of multineuron sequences of activity. <i>Journal of Neurophysiology</i> , 2016, 115, 2359-2375.	1.8	9
67	Localization of CCK Receptors in Thalamic Reticular Neurons: A Modeling Study. <i>Journal of Neurophysiology</i> , 1998, 79, 2820-2824.	1.8	8
68	Convergence of Clinically Relevant Manipulations on Dopamine-Regulated Prefrontal Activity Underlying Stress Coping Responses. <i>Biological Psychiatry</i> , 2022, 91, 810-820.	1.3	6
69	The sodium channel activator Lu AE98134 normalizes the altered firing properties of fast spiking interneurons in <i>Dlx5/6+/-</i> mice. <i>Neuroscience Letters</i> , 2018, 662, 29-35.	2.1	5
70	Regulatory Elements Inserted into AAVs Confer Preferential Activity in Cortical Interneurons. <i>ENeuro</i> , 2020, 7, .	1.9	4
71	Reciprocal inhibitory connections produce desynchronizing phase lags during intrathalamic oscillations. <i>Neurocomputing</i> , 2000, 32-33, 509-516.	5.9	3
72	Serotonin Gives Oxytocin a Helping Hand. <i>Science Translational Medicine</i> , 2013, 5, .	12.4	3

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73	Identifying Pathways Leading to Prefrontal GABA-ergic Interneuron Dysfunction in Schizophrenia. American Journal of Psychiatry, 2014, 171, 906-909.	7.2	2
74	Information diversity in individual auditory cortical neurons is associated with functionally distinct coordinated neuronal ensembles. Scientific Reports, 2021, 11, 4064.	3.3	2
75	Selective Inhibitory Circuit Dysfunction after Chronic Frontal Lobe Contusion. Journal of Neuroscience, 2022, 42, 5361-5372.	3.6	2
76	Deep tissue targeted near-infrared optogenetic stimulation using fully implantable upconverting light bulbs. , 2015, 2015, 821-4.		1
77	Too Much of a Good Thing?. Science Translational Medicine, 2013, 5, .	12.4	1
78	A Model of Changes in Inferotemporal Activity during a Delayed Match-To-Sample Task. , 1997, , 845-850.		1
79	GABAB modulation improves sequence disambiguation in computational models of hippocampal region CA3. Hippocampus, 1998, 8, 171-193.	1.9	1
80	Long-range connections synchronize rather than spread intrathalamic oscillatory activity: Computational modeling and in vitro electrophysiology. Neurocomputing, 1999, 26-27, 525-531.	5.9	0
81	Clonazepam suppresses oscillations in rat thalamic slices. Neurocomputing, 2001, 38-40, 907-913.	5.9	0
82	Tether-less Implantable Upconverting Microscale Light Bulbs for Deep Brain Neural Stimulation and Imaging. , 2015, , .		0
83	Making the Right Connections. Biological Psychiatry, 2016, 80, 502-503.	1.3	0
84	Stressing out the Social Network. Neuron, 2016, 91, 210-213.	8.1	0
85	Neurons Themselves May Shy Away from Normal Interactions in Autism. Science Translational Medicine, 2013, 5, .	12.4	0
86	Stimulating the Prefrontal Cortex to Undo Stimulant Addiction. Science Translational Medicine, 2013, 5, .	12.4	0
87	Autism in the Balance. Science Translational Medicine, 2013, 5, .	12.4	0
88	Transplanting Interneuron Precursors for Epilepsy Control. Science Translational Medicine, 2013, 5, .	12.4	0
89	Seeing the Big Picture in Fragile X Syndrome. Science Translational Medicine, 2013, 5, .	12.4	0
90	Releasing the Brake Drives Fear Behavior. Science Translational Medicine, 2014, 6, .	12.4	0

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91	You Have Your Father's Nose. Science Translational Medicine, 2014, 6, .	12.4	0
92	A Mathematical Description for Gabaergic Modulation of Sequence Disambiguation in Hippocampal Region CA3. , 1998, , 525-530.		0