

BIBLIOGRAPHY: PUBLICATIONS (PEER REVIEWED)

1. Sanes, J., P. J. Donovan and R. G. Burrig (1979) Consummatory behavior as a function of ambient temperature in septal-lesioned and control rats. *Journal of Neuroscience Research* 1: 333-341.
2. Sanes, J. N. and J. R. Ison (1979) Conditioning auditory stimuli and the cutaneous eyeblink reflex in humans: Differential effects according to oligosynaptic or polysynaptic central pathways. *Electroencephalography and Clinical Neurophysiology* 47: 546-555.
3. Sanes, J. N. and J. R. Ison (1980) A silent period in orbicularis oculi muscle of humans. *Journal of Neurology, Neurosurgery and Psychiatry* 43: 504-509.
4. Gopinathan, G., H. Teräväinen, J. M. Dambrosia, C. D. Ward, J. N. Sanes, W. K. Stuart, E. V. Evarts and D. B. Calne, (1981) Lisuride in parkinsonism. *Neurology* 31: 371-376.
5. Morgan, N. T., J. N. Sanes, W. K. Stuart and W. S. Rasband (1981) A computerized system for determination of reaction time, movement time, and movement accuracy. *Electroencephalography and Clinical Neurophysiology* 51: 563-566.
6. LeWitt, P. A., G. Gopinathan, C. D. Ward, J. N. Sanes, J. M. Dambrosia, R. Durso and D. B. Calne (1982) Lisuride versus bromocriptine in Parkinson's disease: A double blind study. *Neurology* 32: 69-72.
7. Sanes, J. N., J. A. Foss and J. R. Ison (1982) Conditions that affect the thresholds of the components of the eyeblink reflex in humans. *Journal of Neurology, Neurosurgery and Psychiatry* 45: 543-549.
8. Sanes, J. N. and E. V. Evarts (1983) Effects of perturbations on accuracy of arm movements. *Journal of Neuroscience* 3: 977-986.
9. Sanes, J. N. and J. R. Ison (1983) Habituation and sensitization of components of the human eyeblink reflex. *Behavioral Neuroscience* 97: 833-866.
10. Sanes, J. N. and V. A. Jennings (1984) Centrally programmed patterns of muscle activity in voluntary motor behaviors of humans. *Experimental Brain Research* 54: 23-32.
11. Sanes, J. N., K. -H. Mauritz, E. V. Evarts, M. C. Dalakas and A. Chu (1984) Motor deficits in patients with large-fiber sensory neuropathy. *Proceedings of the National Academy of Science* 81: 979-982.
12. Sanes, J. N. and E. V. Evarts (1984) Motor psychophysics. *Human Neurobiology* 2: 217-225.
13. Sanes, J. N. (1984) Voluntary movement and excitability of cutaneous eyeblink reflexes. *Psychophysiology* 21: 653-664.
14. Sanes, J. N. (1985) Information processing deficits in Parkinson's disease during movement. *Neuropsychologia* 23: 381-392.
15. Sanes, J. N. (1985) Absence of enhanced physiological tremor in patients without muscle or cutaneous afferents. *Journal of Neurology, Neurosurgery and Psychiatry* 48: 645-649.
16. Sanes, J. N., K. -H. Mauritz, M. C. Dalakas and E. V. Evarts (1985) Motor control in humans with large-fiber sensory neuropathy. *Human Neurobiology* 4: 101-114.
17. Sanes, J. N., T. R. Colburn and N. T. Morgan (1985) Behavioral motor evaluation for neurotoxicity screening. *Neurobehavioral Toxicology and Teratology* 4: 329-337.
18. Sanes, J. N. (1986) Kinematics and end-point control of arm movements are modified by unexpected changes in viscous loading. *Journal of Neuroscience* 6: 3120-3127.

REFEREED JOURNAL ARTICLES [CONTINUED]

19. Donoghue, J. P. and J. N. Sanes (1987) Peripheral nerve injury in developing rats reorganizes representation pattern in motor cortex. *Proceedings of the National Academy of Science* 84: 1123-1126.
20. Pullman, S. L., R. L. Watts, J. L. Juncos, T. N. Chase and J. N. Sanes (1988) Dopaminergic effects on simple and choice reaction time performance in Parkinson's Disease. *Neurology* 38: 249-254.
21. Sanes, J. N., S. Suner, J. A. Lando and J. P. Donoghue (1988) Rapid reorganization of adult rat motor cortex somatic representation patterns after motor nerve injury. *Proceedings of the National Academy of Science* 85: 2003-2007.
22. Sanes, J. N., P. L. LeWitt and K. -H. Mauritz (1988) Visual and mechanical control of cerebellar kinetic postural tremor. *Journal of Neurology, Neurosurgery and Psychiatry* 51: 934-943.
23. Donoghue, J. P. and J. N. Sanes (1988) Organization of adult motor cortex representation patterns following neonatal nerve injury in rats. *Journal of Neuroscience* 8: 3221-3232.
24. Dimitrov, B., M. Hallett and J. N. Sanes (1989) Differential influence of posture and intentional movement on human somatosensory evoked potentials evoked by different stimuli. *Brain Research* 496: 211-218.
25. Sanes, J. N., B. Dimitrov and M. Hallett (1990) Motor learning in patients with cerebellar dysfunction. *Brain* 113: 103-120.
26. Sanes, J. N., S. Suner and J. P. Donoghue (1990) Dynamic organization of primary motor cortex output to target muscles in adult rats. I. Long-term patterns of reorganization following motor or mixed peripheral nerve lesions. *Experimental Brain Research* 79: 479-491.
27. Donoghue, J. P., S. Suner and J. N. Sanes (1990) Dynamic organization of primary motor cortex output to target muscles in adult rats. II. Rapid reorganization following motor nerve lesions. *Experimental Brain Research* 79: 492-503.
28. Pullman, S. L., R. L. Watts, J. L. Juncos, and J. N. Sanes (1990) Movement amplitude choice reaction time performance in Parkinson's disease may be independent of dopaminergic status. *Journal of Neurology, Neurosurgery and Psychiatry*, 53: 279-283.
29. Ison, J. R., J. N. Sanes, J. A. Foss, L. A. Pinckney (1990) Facilitation and inhibition of the human startle blink reflexes by stimulus anticipation. *Behavioral Neuroscience*, 104: 418-429.
30. Sanes, J. N. and M. Hallett (1990) Limb positioning and magnitude of essential tremor and other pathological tremors. *Movement Disorders*, 5: 304-309.
31. Cohen L. G., J. Meer, I. Tarkka, S. Bierner, D. Lederman, R. M. Dubinsky, J. N. Sanes, B. Jabbari, B. Branscum, and M. Hallett (1991) Congenital mirror movements: abnormal organization of motor pathways in two patients. *Brain*, 114: 381-403.
32. Donoghue, J. P., S. J. Leibovic, and J. N. Sanes (1992) Organization of the forelimb area in squirrel monkey primary motor cortex: Representation of individual digit, wrist, and elbow muscles. *Experimental Brain Research*, 89: 1-19.
33. Sanes, J. N., J. Wang, J. P. Donoghue (1992) Immediate and delayed changes of rat motor cortical output representation with new forelimb configurations. *Cerebral Cortex*, 2: 141-152.

REFEREED JOURNAL ARTICLES [CONTINUED]

34. Sanes, J. N. and J. P. Donoghue (1992) Organization and adaptability of muscle representations in primary motor cortex. *Experimental Brain Research, Supplement*, 22: 103-127.
35. Agostino, R., M. Hallett and J. N. Sanes (1992) Antagonist muscle inhibition before rapid voluntary movements of the human wrist. *Electroencephalography and Clinical Neurophysiology*, 85: 190-196.
36. Sanes, J. N. and J. P. Donoghue (1993) Oscillations in local field potentials of the primate motor cortex during voluntary movement. *Proceedings of the National Academy of Sciences (USA)*, 90: 4470-4474.
37. Donoghue, J. P. and J. N. Sanes (1994) Motor areas of the cerebral cortex. *Journal of Clinical Neurophysiology*, 11: 382-396.
38. Sanes, J. N. (1994) Neurophysiology of preparation, movement, and imagery. *Behavioral and Brain Sciences*, 17: 221-223.
39. Labutta, R., R. B. Miles, J. N. Sanes, and M. Hallett (1994) Motor program memory storage in Parkinson's disease patients tested with a delayed response task. *Movement Disorders*, 9: 218-222.
40. Sanes, J. N. and R. Shadmehr (1995) Sense of muscular effort in humans with large-fiber sensory neuropathy. *Canadian Journal of Physiology and Pharmacology*, 73: 223-233.
41. Sanes, J. N., J. P. Donoghue, V. Thangaraj, R. R. Edelman and S. Warach (1995) Shared neural substrates controlling hand movements in human motor cortex. *Science*, 268: 1775-1777.
42. Friedman, J. H. M. Epstein, J. N. Sanes, P. Lieberman, K. Cullen, C. Lindquist, M. Daamen (1996) Gamma knife pallidotomy in advanced Parkinson's disease. *Annals of Neurology*, 39: 535-538.
43. Schlaug, G., J. N. Sanes, V. Thangaraj, D. G. Darby, L. Jäncke, R. R. Edelman, and S. Warach (1996) Cortical activation covaries with movement rate. *NeuroReport*, 7: 879-883.
44. Agostino, R., Sanes, J. N., and Hallett, M. (1996) Movement skill learning in Parkinson's disease. *Journal of the Neurological Sciences*, 139: 218-226.
45. Sanes, J. N. and J. P. Donoghue (1997) Dynamic motor cortical organization. *The Neuroscientist*, 3: 158-165.
46. Donoghue J. P., J. N. Sanes, N. G. Hatsopoulos, and G. Gaál (1998) Neural discharge and local field potential oscillations in primate motor cortex during voluntary movements. *Journal of Neurophysiology*, 79: 159-173.
47. Marzi, C. A., C. Miniussi, A. Maravita, L. Bertolasi, G. Zanette, J. C. Rothwell and J. N. Sanes (1998) Transcranial magnetic stimulation selectively impairs interhemispheric transfer of visuo-motor information in humans. *Experimental Brain Research*, 118: 435-438.
48. Bhat, R. B. and J. N. Sanes (1998) Cognitive channels computing action distance and direction. *Journal of Neuroscience*, 18: 7566-7580.
49. Maynard, E. M., N. G. Hatsopoulos, C. L. Ojakangas, B. D. Acuna, J. N., Sanes, R. A. Normann and J. P. Donoghue (1999) Neuronal interactions improve cortical population coding of movement direction. *Journal of Neuroscience*, 19: 8083-8093.

REFEREED JOURNAL ARTICLES. [CONTINUED]

50. Baker, J. T., J. P. Donoghue and J. N. Sanes (1999) Gaze direction modulates finger movement activation patterns in human cerebral cortex. *Journal of Neuroscience*, 19: 10044-10052.
51. Sanes, J. N. and J. P. Donoghue (2000) Plasticity and primary motor cortex. *Annual Review of Neuroscience*. 23: 393-415.
52. Sanes, J. N. (2000) Skill learning: Motor cortex rules for learning and memory. *Current Biology*, 10: R495-497.
53. Sanes J. N. (2000) The relation between human brain activity and hand movements. *NeuroImage*, 11: 370-374.
54. Sanes J. N. and M. H. Schieber (2001) Orderly somatotopy in primary motor cortex: Does it exist? *NeuroImage*, 13: 968-974.
55. Indovina I. and J. N. Sanes (2001) On somatotopic representation centers for finger movements in human primary motor cortex and supplementary motor area. *NeuroImage*, 13: 1027-1034.
56. Galati, G., G. Committeri, J. N. Sanes and L. Pizzamiglio (2001) Spatial coding of visual and somatic sensory information in body-centered coordinates. *European Journal of Neuroscience*, 14: 737-746.
57. Indovina I. and J. N. Sanes (2001) Combined visual attention and finger movement effects on human brain representations. *Experimental Brain Research*, 140: 265-279.
58. Hagberg, G. E., G. Zito, F. Patria F, and J. N. Sanes JN (2001) Improved detection of event-related functional MRI signals using probability functions. *NeuroImage*, 14:1193-1205.
59. Eliassen, J. C., T. Souza and J. N. Sanes (2001) Human brain activation accompanying explicitly directed movement sequence learning. *Experimental Brain Research*, 141: 269-280.
60. Acuna, B. D., J. N. Sanes, and J. P. Donoghue (2002) Cognitive mechanisms of transitive inference. *Experimental Brain Research* 146:1-10.
61. Hagberg, G. E., I. Indovina, J. N. Sanes, and S. Posse (2002) Real time quantification of T2* changes using multi-echo planar imaging and numerical methods. *Magnetic Resonance in Medicine*, 48:877-882.
62. Acuna, B. D., J. C. Eliassen, J. N. Sanes, and J. P. Donoghue (2002) Frontal and parietal lobe activation during transitive inference in humans. *Cerebral Cortex* 12:1312-1321.
63. Sanes, J. N. and W. Trucculo (2003) Motor “binding:” Do functional assemblies in primary motor cortex have a role? *Neuron* 38: 3-5.
64. Sanes, J. N. (2003) Neocortical mechanisms in motor learning. *Current Opinion in Neurobiology*, 13:225-231.
65. Eliassen, J. C., T. Souza and J. N. Sanes (2003) Experience-dependent activation patterns in human brain during visual-motor associative learning. *Journal of Neuroscience*, 23:10540-10547.
66. Kim J. A., J. C. Eliassen, and J. N. Sanes (2005) Movement quantity and frequency coding in human motor areas. *Journal of Neurophysiology* 94:2504-2511.

REFEREED JOURNAL ARTICLES. [CONTINUED]

67. Bédard, P., A. Thangavel, and J. N. Sanes (2008) Gaze influences finger movement-related and visual-related activation across the human brain. *Experimental Brain Research*, 188:63-75.
68. Thaut, M, M. Demartin, and J. N. Sanes (2008) Brain networks for integrative rhythm formation. *PLoS ONE*, 3: e2312.
69. Philip B. A., Y. Wu, J. P. Donoghue, J. N. Sanes (2008) Computational predictions of performance differences in visually- and internally-guided continuous manual tracking movements. *Experimental Brain Research* 190:475-491.
70. Bédard, P. and J. N. Sanes (2009) Gaze and hand position effects on finger-movement related human brain activation. *Journal of Neurophysiology*, 101: 834-842.
71. Sheinkopf S. J., B. M. Lester, J. N. Sanes, J. C. Eliassen, E. R. Hutchison, R. Seifer, L. L. LaGasse, S. Durston, and B. J. Casey (2009) Functional MRI and response inhibition in children exposed to cocaine in utero: preliminary findings. *Developmental Neuroscience* 31:159–166.
72. Bédard P. and J. N. Sanes (2009) On a basal ganglia role in learning and rehearsing visual-motor association. *NeuroImage*, 47: 1701-1710.
73. Fiecas M., H. Ombao, C. Linkletter, W. Thompson, and J. N. Sanes (2010) Functional connectivity: shrinkage estimation and randomization test. *NeuroImage* 49:3005–3014.
74. Böhm H., H. Ombao, R. von Sachs, and J. N. Sanes (2010) Classification of multivariate non-stationary signals: the SLEX-shrinkage approach. *Journal of Statistical Planning and Inference*, in press.
75. Bédard P. and J. N. Sanes (2011) Basal ganglia-dependent processes in short-term recall of visual-motor skills. *Experimental Brain Research*, 209:385-393. PMID: PMC3065111
76. Bédard P., M. Wu, and J. N. Sanes (2011) Brain activation related to combinations of gaze position, visual input and goal-directed hand movements. *Cerebral Cortex*, 21:1273-1282. NIHMS273785

BIBLIOGRAPHY: PUBLICATIONS (REVIEWS, COMMENTARIES AND BOOK CHAPTERS, NON-REFEREED)

1. Ward, C. D., J. N. Sanes, J. M. Dambrosia and D. B. Calne (1983) Methods for evaluating treatment in Parkinson's disease. In: *Advances in Neurology, Volume 37, Experimental Therapeutics of Movement Disorders*. Eds. S. Fahn, I. Shoulson and D. B. Calne. Raven Press, New York, pp. 1-7.
2. Sanes, J. N. and E. V. Evarts (1983) The regulatory role of proprioceptive input in motor control of phasic or maintained voluntary contractions in man. In: *Motor Control Mechanisms in Health and Disease*. Ed. J. E. Desmedt, Raven Press, New York, pp. 47-59
3. Sanes, J. N. and E. V. Evarts (1985) Psychomotor performance in Parkinson's disease. In: *Clinical Neurophysiology in Parkinsonism*. Eds. P. J. Delwaide and A. Agnoli, Elsevier Science Publishers B. V., Amsterdam, pp. 117-132.
4. Sanes, J. N. (1987) Neuromotor psychophysical aspects of central programming and peripheral regulation of movement in humans. In: *Advances in Applied Neurological Science, vol. 4. Clinical Aspects of Sensory Motor Integration*. Eds. A. Struppler and A. Weindl, Springer-Verlag, Berlin, 305-313.
5. Sanes, J. N. (1987) Proprioceptive afferent information and movement control. In: *Encyclopedia of Neuroscience*. Birkhäuser Boston Inc., Cambridge, Massachusetts, Volume II, 982-984.
6. Sanes, J. N. (1990) Motor representations in deafferented humans. A mechanism for disordered motor performance. In: *Attention and Performance XIII*. Ed. M. Jeannerod, Lawrence Erlbaum Associates, Hillsdale, NJ., pp. 714-735.
7. Sanes, J. N., R. Caminiti, J. P. Donoghue, G. W. Huntley, E. G. Jones, J. H. Martin, and M. H. Scheiber (1992) Representations in the primary motor cortex; Intrinsic circuitry of primate MI; Functional organization of MI arm area; Organization of muscle synergies in MI; MI and reaching; MI and skill learning. *Neuroscience Facts* 3(9) 1-4.
8. Donoghue, J. P., G. Hess and J. N. Sanes (1996) Motor cortical substrates and mechanisms for learning. *Acquisition of Motor Behavior in Vertebrates*, (ed.) J. R. Bloedel, T. J. Ebner, and S. P. Wise, MIT Press, Cambridge, pp. 363-386.
9. Sanes, J. N. and J. P. Donoghue (1997) Static and dynamic organization of motor cortex. *Advances in Neurology, vol. 73, Brain Plasticity*. H. -J. Freund, B. A. Sabel, O. W. Witte, eds. New York, Raven Press, 277-296.
10. Donoghue, J. P. and Sanes, J. N. (2000). Motor system organization. *Encyclopedia of Life Sciences*, <http://www.els.net>, London: Nature Publishing Group.
11. Sanes J. N. (2001) Primary motor cortex and primary somatic sensory cortex. In: *The Corsini Encyclopedia of Psychology and Behavioral Science, Third Edition*. Ed. W. E. Craighead and C. B. Nemeroff. John Wiley & Sons, New York, pp. 1243-1245.
12. Sanes, J. N. (2004) Primary motor cortex and primary somatic sensory cortex. In: *Concise Corsini Encyclopedia of Psychology and Behavioral Science, Third Edition*. Ed. W. E. Craighead and C. B. Nemeroff. John Wiley & Sons, New York, pp. 727-728.
13. Sanes, J. N. (2008) Cerebral Cortex: Motor Learning. In H.L. Roediger, III (Ed.), *Cognitive Psychology of Memory*. Vol. 4 of *Learning and Memory: A Comprehensive Reference*, 4 vols. (J.Byrne Editor). Oxford: Elsevier, pp. 423-440.

14. Sanes, J. N. (2008) Primary motor cortex and primary somatic sensory cortex. In: *Concise Corsini Encyclopedia of Psychology and Behavioral Science, Fourth Edition*. Ed. W. E. Craighead and I. Weiner. John Wiley & Sons, New York, in press.