

## Barry W. Connors

L. Herbert Ballou University Professor of Neuroscience  
 Professor of Medical Science  
 Department of Neuroscience  
 Box GL-N, Division of Biology & Medicine  
 Brown University  
 Providence, RI 02912

office: 401-863-2982  
 lab: 401-863-7597  
 fax: 401-863-1074  
 email: BC@Brown.edu

### EDUCATION:

University of Dayton	B.S.	Biology	1971-74
Duke University	Ph.D.	Physiology & Pharmacology (mentor: George G. Somjen)	1975-79
Stanford University	Postdoctoral fellow	Neuroscience (mentors: David A. Prince, Stephen G. Waxman)	1979-82

### ACADEMIC APPOINTMENTS:

1982-87	Assistant Professor	Dept of Neurology & Neurological Sciences	Stanford University
1987-89	Assistant Professor	Section of Neurobiology	Brown University
1989-94	Associate Professor	Dept. of Neuroscience	Brown University
1994-present	Professor	Dept. of Neuroscience	Brown University
2000-present	L. Herbert Ballou University Professor	Dept. of Neuroscience	Brown University
2006-16	Department Chair	Dept. of Neuroscience	Brown University

### FELLOWSHIPS AND HONORS:

1975-79	NIH predoctoral fellowship
1979-81	NIH postdoctoral fellowship
1981-82	Lennox Postdoctoral Fellowship, American Epilepsy Society
1985-88	Klingenstein Fellowship in the Neurosciences
1985-91	Research Career Development Award, NIH
1989	Master of Arts, <i>ad eundem</i> , Brown University
1992	Grass Foundation Traveling Scientist
1997	Dozor Visiting Professor, Ben-Gurion University, Israel
1997-04	Javits Neuroscience Investigator Award, NIH, NINDS
2001	Keynote speaker, "Neuroscience at Storrs", University of Connecticut
2004	Special Lecturer, Society for Neuroscience Annual Meeting
2000-present	L. Herbert Ballou University Professor of Neuroscience
2000-07	Associate, Neurosciences Research Program (NRP), La Jolla, CA
2004-08	Dean's Teaching Excellence Award, Alpert Medical School, Brown
2009	Plenary Lecturer, Japan Neuroscience Society, Nagoya
2009	Keynote Speaker, International Gap Junction Conference, Sedona AZ
2009-14,19	Certificate for Exemplary Teaching, Alpert Medical School, Brown
2011	Herbert Jasper Lecturer, Montreal Neurological Institute, McGill University

- 2012                    Neurosciences Institute Distinguished Lecturer, University of Texas, San Antonio
- 2012                    Fellow of the American Association for the Advancement of Science (AAAS)
- 2017                    Dominick Purpura Distinguished Neuroscientist Lecture, Einstein College of Medicine

**EDITORIAL BOARDS:**

- 1996-2000    *Journal of Neuroscience*, Associate Editor
- 2000-03      *Journal of Neuroscience*, Reviewing Editor
- 2003-06      *Journal of Neuroscience*, Senior Editor
- 2001-08      *Thalamus and Related Systems*, Editorial Board
- 2008-12      *Frontiers in Cellular Neuroscience*, Associate Editor
- 2009-14      *Epilepsy Currents*, Contributing Editor
- 1999-2014    *Journal of Neurophysiology*, Editorial Board
- 1996-present *Cerebral Cortex*, Associate Editor
- 2006-present *Brain Structure and Function*, Editorial Board

**SERVICE COMMITTEES (recent):**

- 1998-2002    NIH study section, IFCN-8, regular member
- 2008-11      NIH study section, NST-2; K99/R00 Pathway to Independence Awards, regular member
- 2010          Blueprint Undergraduate Research Diversity (R25) Applications, NIMH, ad hoc reviewer
- 2010          External reviewer, Neuroscience Graduate Program, Harvard University
- 2011          External advisory board, Center for Neural Basis of Cognition, Carnegie-Mellon & U Pitt
- 2012          NIH special emphasis panel, ZRG1 IFCN-Q, ad hoc reviewer
- 2013          NIH study section, ZMH1 ERB-S, ad hoc reviewer
- 2013          NIH special emphasis panel, ZRG1 IFCN-T, ad hoc reviewer
- 2010-13      Committee on Neuroscience Depts and Programs (Soc for Neuroscience), member
- 2014          NIH study section, ZMH1 ERB-S, 04, ad hoc reviewer
- 2014          NIMH Board Scientific Counselors, ad hoc reviewer
- 2015          NIH study section (ZMH1 ERB-S), ad hoc reviewer
- 2015          NIH study section (ZRG1 IFCN-T-02), ad hoc reviewer
- 2016          NINDS Special Emphasis Panel (ZNS1 SRB-E 07), R35 reviewing, ad hoc reviewer
- 2016          NIMH Special Emphasis Panel (ZMH1 ERB-X 01), R25 reviewing, ad hoc reviewer
- 2017          NIH Neurotransmitters, Receptors, Calcium study section, ad hoc reviewer
- 2017          NIH Director's Early Independence Award (DP5) ad hoc reviewer
- 2017          Co-organizer (with A Pereda, M Feller, N Spruston), *Electrical Synapses* conference, Janelia Research Campus, HHMI
- 2019          External reviewer, Department of Neuroscience, University of Pittsburgh
- 2018-20      NIH, Sensorimotor Integration (SMI) Study Section, regular member

**PRIMARY JOURNAL ARTICLES:** (links: <https://scholar.google.com/citations?user=whbW9AQAAAAJ>)

- Connors B, Dray A, Fox P, Hilmy M, Somjen G. LSD's effect on neuron populations in visual cortex gauged by transient responses of extracellular potassium evoked by optical stimuli. *Neurosci Lett*, 13: 147-150, 1979.
- Kinnes CG, Connors BW, Somjen GG. The effects of convulsant doses of penicillin on primary afferents, dorsal root ganglion cells and on "presynaptic" inhibition in the spinal cord. *Brain Res*, 192: 495-512, 1980.
- Connors BW. A comparison of the effects of pentobarbital and diphenylhydantoin on the GABA sensitivity and excitability of adult sensory ganglion cells. *Brain Res*, 207: 357-369, 1981.

Gutnick MJ, Connors BW, Ransom BR. Dye-coupling between glial cells in the guinea pig neocortical slice. *Brain Res*, 213: 486-492, 1981.

Kocsis JD, Malenka RC, Connors BW, Waxman SG, Cummins KL. Population response characteristics of fiber tracts in central white matter. *Prog Clin Biol Res*. 52: 17-32, 1981.

Foster RE, Connors BW, Waxman SG. Rat optic nerve: Electrophysiological, pharmacological and anatomical studies during development. *Develop Brain Res*, 3: 371-386, 1982.

Connors BW, Prince DA. Effects of the local anesthetic QX-314 on the membrane properties of hippocampal pyramidal neurons. *J Pharmacol Exp Therap*, 220: 476-481, 1982.

Connors BW, Ransom BR, Kunis D, Gutnick MJ. Activity-dependent K<sup>+</sup> accumulation in the developing rat optic nerve. *Science*, 216: 1341-1343, 1982.

Connors BW, Gutnick MJ, Prince DA. Electrophysiological properties of neocortical neurons *in vitro*. *J Neurophysiol*, 48: 1302-1320, 1982.

Gutnick MJ, Connors BW, Prince DA. Mechanisms of neocortical epileptogenesis *in vitro*. *J Neurophysiol*, 48: 1321-1335, 1982.

Connors BW, Benardo LS, Prince DA. Coupling between neurons of the developing rat neocortex. *J Neurosci*, 3: 773-782, 1983.

Connors BW, Benardo LS, Prince DA. Carbon dioxide sensitivity of dye-coupling among glia and neurons of the neocortex. *J Neurosci*, 4: 1324-1330, 1984.

Connors BW. Initiation of synchronized neuronal bursting in neocortex. *Nature*, 310: 685-687, 1984.

Connors BW, Ransom BR. Chloride conductance and extracellular potassium concentration interact to modify the excitability of rat optic nerve fibres. *J Physiol (Lond)*, 355: 619-633, 1984.

Ransom BR, Yamate CL, Connors BW. Activity-dependent shrinkage of extracellular space: A developmental study. *J Neurosci*, 5: 532-535, 1985.

McCormick DA, Connors BW, Lighthall JW, Prince DA. Comparative electrophysiology of pyramidal and sparsely spiny neurons of the neocortex. *J Neurophysiol*, 54: 782-806, 1985. (*Journal of Neurophysiology* Classic Article)

Connors BW, Kriegstein AR. Cellular physiology of the turtle visual cortex: Distinctive properties of pyramidal and stellate neurons. *J Neurosci*, 6: 164-177, 1986.

Kriegstein AR, Connors BW. Cellular physiology of the turtle visual cortex: Synaptic properties and intrinsic circuitry. *J Neurosci*, 6: 178-191, 1986.

Connors BW, Ransom BR. Electrophysiological properties of ependymal cells (radial glia) in dorsal cortex of the turtle, *Pseudmys scripta*. *J Physiol (Lond)* 385: 287-306, 1987.

Chervin RD, Pierce PA, Connors BW. Periodicity and directionality in the propagation of epileptiform discharges across neocortex. *J Neurophysiol*, 60: 1695-1713, 1988.

Connors BW, Malenka RC, Silva LR. Two inhibitory postsynaptic potentials, and GABA<sub>A</sub> and GABA<sub>B</sub> receptor-mediated responses in neocortex of rat and cat. *J Physiol (Lond)*, 406: 443-468, 1988.

Chagnac-Amitai Y, Connors BW. Horizontal spread of synchronized activity in neocortex, and its control by GABA-mediated inhibition. *J Neurophysiol*, 61: 747-757, 1989.

Agmon, A., Connors BW. Repetitive burst-firing neurons in the deep layers of mouse somatosensory cortex. *Neurosci Lett*, 99: 137-141, 1989.

Chagnac-Amitai Y, Connors BW. Synchronized excitation and inhibition driven by intrinsically bursting neurons in neocortex. *J Neurophysiol*, 62: 1149-1162, 1989.

Silva LR, Amitai Y, Connors BW. Intrinsic oscillations of neocortex generated by layer 5 pyramidal neurons. *Science*, 251: 432-435, 1991.

Agmon A, Connors BW. Thalamocortical responses of mouse somatosensory (barrel) cortex *in vitro*. *Neuroscience*, 41: 365-380, 1991.

Silva LR, Gutnick MJ, Connors BW. Laminar distribution of neuronal membrane properties in neocortex of normal and reeler mouse. *J Neurophysiol*, 66: 2034-2040, 1991.

Agmon A, Connors BW. Correlation between intrinsic firing patterns and thalamocortical responses of mouse barrel cortex neurons. *J Neurosci*, 12: 319-330, 1992.

Bear MF, Press WA, Connors BW. Long-term potentiation in slices of kitten visual cortex and the effects of NMDA receptor blockade. *J Neurophysiol*, 67: 841-851, 1992.

Amitai Y, Friedman A, Connors BW, Gutnick MJ. Regenerative activity in the apical dendrites of pyramidal cells in neocortex. *Cerebral Cortex*, 3: 26-38, 1993.

Kim HG, Connors BW. Apical dendrites of the neocortex: correlation between sodium- and calcium-dependent spiking and pyramidal cell morphology. *J Neurosci*, 13: 5301-5311, 1993.

Cauler LJ, Connors BW. Synaptic physiology of horizontal afferents to layer I of primary somatosensory cortex in rats. *J Neurosci*, 14: 751-762, 1994.

Kim HG, Fox K, Connors BW. Properties of excitatory synaptic events in neurons of the primary somatosensory cortex of neonatal rats. *Cerebral Cortex*, 2:148-157, 1995.

Castro-Alamancos MA, Donoghue JP, Connors BW. Different forms of synaptic plasticity in somatosensory and motor areas of the neocortex. *J Neurosci*, 15: 5324-5333, 1995.

Kim HG, Beierlein M, Connors BW. Inhibitory control of excitable dendrites in neocortex, *J Neurophysiol*, 74: 1810-1814, 1995.

Castro-Alamancos MA, Connors BW. Short-term synaptic enhancement and long-term potentiation in neocortex. *Proc Natl Acad Sci USA*, 93: 1335-1339, 1996a.

Castro-Alamancos MA, Connors BW. Short-term plasticity of a thalamocortical pathway dynamically modulated by behavioral state. *Science*, 272: 274-277, 1996b.

Flint AC, Connors BW. Two types of network oscillations in neocortex mediated by distinct glutamate receptor subtypes and neuronal populations. *J Neurophysiol*, 75: 951-956, 1996.

Castro-Alamancos MA, Connors BW. Spatiotemporal properties of short-term plasticity in sensorimotor thalamocortical pathways of the rat. *J Neurosci*, 16: 2767-2779, 1996c.

Nicoll A, Kim HG, Connors BW. Laminar origins of inhibitory synaptic inputs of pyramidal neurons in rat neocortex. *J Physiol (London)*, 497: 109-117, 1996.

Castro-Alamancos MA, Connors BW. Cellular mechanisms of the augmenting response: short-term plasticity in a thalamocortical pathway. *J Neurosci*, 16: 7742-7756, 1996d.

Castro-Alamancos MA, Connors BW. Distinct forms of synaptic plasticity in pathways of hippocampus and neocortex. *Proc Natl Acad Sci USA*, 94: 4161-4166, 1997.

Gil Z, Connors BW, Amitai Y. Differential regulation of neocortical synapses by activity and neuromodulators. *Neuron*, 19: 679-686, 1997.

Cauler LJ, Clancy B, Connors BW. Backward cortical projections to primary somatosensory cortex in rats extend long horizontal axons in layer I. *J Comp Neurol*, 390: 297-310, 1998.

Telfeian AE, Connors BW. Layer-specific pathways for the horizontal propagation of epileptiform discharges in neocortex. *Epilepsia*, 39: 700-708, 1998.

Zhu JJ, Connors BW. Intrinsic firing patterns and whisker-evoked synaptic responses of neurons in the rat barrel cortex. *J Neurophysiol*, 81: 1171-1183, 1999.

Gil Z, Connors BW, Amitai Y. Efficacy of thalamocortical and intracortical synaptic connections: quanta, innervation, and reliability. *Neuron*, 23: 385-397, 1999.

Finnerty GT, Roberts LS, Connors BW. Sensory experience modifies short-term dynamics of neocortical synapses. *Nature*, 400: 367-371, 1999.

Telfeian AE, Connors BW. Epileptiform propagation patterns mediated by NMDA and nonNMDA receptors in neocortex. *Epilepsia*, 40: 1580-1586, 1999.

Gibson JR, Beierlein M, Connors BW. Two networks of electrically coupled inhibitory neurons in neocortex. *Nature*, 402: 75-79, 1999.

Beierlein M, Gibson JR, Connors BW. An electrically coupled network of interneurons drives synchronized inhibition in neocortex. *Nature Neurosci*, 3: 904-910, 2000.

Finnerty GT, Connors BW. Modest alterations of short-term synaptic dynamics follow sensory deprivation without competition. *Proc Natl Acad Sci USA*, 97: 12864-12868, 2000.

Deans MR, Gibson JR, Sellitto C, Connors BW, Paul DL. Synchronous activity of inhibitory networks in neocortex requires electrical synapses containing connexin36. *Neuron*, 31: 477-485, 2001.

Landisman CE, Long MA, Beierlein M, Deans MR, Paul DL, Connors BW. Electrical synapses in the thalamic reticular nucleus. *J Neurosci*, 22: 1002-1009, 2002.

Amitai Y, Gibson JR, Beierlein M, Patrick SL, Ho AM, Connors BW, Golomb D. The spatial dimensions of electrically coupled networks of interneurons in neocortex. *J Neurosci*, 22: 4142-4152, 2002.

Beierlein M, Connors BW. Efficacy and dynamics of excitatory synapses to layer 6 neurons in neocortex depend on input source. *J Neurophysiol*, 88: 1924-1932, 2002.

Long MA, Deans MR, Paul DL, Connors BW. Rhythmicity without synchrony in the electrically uncoupled inferior olive. *J Neurosci*, 22: 10898-10905, 2002.

Telfeian AE, Connors BW. Widely integrative properties of layer 5 pyramidal cells support a role for processing of extralaminar synaptic inputs in rat neocortex. *Neurosci Lett*, 343: 121-124, 2003.

Beierlein M, Gibson JR, Connors BW. Two dynamically distinct inhibitory networks in layer 4 of the neocortex. *J Neurophysiol*, 90: 2987-3000, 2003.

Long MA, Landisman CE, Connors BW. Small clusters of electrically coupled neurons generate synchronous rhythms in the thalamic reticular nucleus. *J Neurosci*, 24: 341-349, 2004.

Cruikshank SJ, Hopperstad M, Younger M, Connors BW, Spray DC, Srinivas M. Potent block of Cx36 and Cx50 gap junction channels by mefloquine. *Proc Natl Acad Sci USA*, 101: 12364-12369, 2004.

Patterson WR, Song Y-K, Bull CW, Ozden I, Deangelis A, McKay JL, Nurmikko AV, Donoghue JD, Connors BW. A microelectrode/microelectronic hybrid device for brain implantable neuroprosthesis applications. *IEEE Trans Biomed Engin*, 10: 1845-1853, 2004.

Ozden I, Venkataramani S, Long MA, Connors BW, Nurmikko AV. Strong coupling of nonlinear electronic and biological oscillators: Reaching the "amplitude death" regime. *Physical Rev Lett*, 93: 158102-1-4, 2004.

Gibson JR, Beierlein M, Connors BW. Functional properties of electrical synapses between inhibitory interneurons of neocortical layer 4. *J Neurophysiol*, 93: 467-480, 2005.

Song YK, Patterson WR, Bull CW, Beals J, Hwang NJ, Deangelis AP, Lay C, McKay JL, Nurmikko AV, Fellows MR, Simeral J, Donoghue JP, Connors BW. Development of a chipscale integrated microelectrode / microelectronic device for brain implantable neuroengineering applications. *IEEE Trans Neural Systems Rehab Engin*, 13: 220-226, 2005.

Long MA, Cruikshank SJ, Jutras MJ, Connors BW. Abrupt maturation of a spike-synchronizing mechanism in neocortex. *J Neurosci*, 25: 7309-7316, 2005.

Long MA, Jutras MJ, Connors BW, Burwell RD. Electrical synapses coordinate activity in the suprachiasmatic nucleus. *Nature Neurosci*, 8: 61-66, 2005.

Pinto DJ, Patrick SL, Huang WC, Connors BW. Initiation, propagation, and termination of epileptiform activity in neocortex in vitro involve distinct mechanisms. *J Neurosci*, 25: 8131-8140, 2005.

Venkataramani S, Davitt KM, Zhang J, Xu H, Song YK, Connors BW, Nurmikko AV. Compact semiconductor light-emitting diodes for dynamical imaging of neuronal circuitry. *IEEE J Select Topics Quantum Electron*, 11: 785-790, 2005.

Landisman CE, Connors BW. Modulation of electrical synapses in the mammalian thalamus. *Science*, 310:1809-1813, 2005.

Patrick SL, Connors BW, Landisman CE. Developmental changes in somatostatin-positive interneurons in a freeze-lesion model of epilepsy. *Epilepsy Res*, 70: 161-171, 2006.

Venkataramani S, Davitt KM, Zhang J, Xu H, Song YK, Connors BW, Nurmikko AV. Semiconductor ultra-violet light emitting diodes for flash photolysis. *J Neurosci Meth*, 160:5-9, 2007.

Mancilla JG, Lewis TJ, Pinto DJ, Rinzel J, Connors BW. Synchronization of electrically coupled pairs of inhibitory interneurons in neocortex. *J Neurosci*, 27:2058-2073, 2007.

Cruikshank SJ, Lewis TJ, Connors BW. Synaptic basis for intense thalamocortical activation of feedforward inhibitory cells in neocortex. *Nature Neurosci*, 10: 462-468, 2007.

Landisman CE, Connors BW. VPM and PoM nuclei of the rat somatosensory thalamus: intrinsic neuronal properties and corticothalamic feedback. *Cerebral Cortex*, 17:2853-2865, 2007.

Fanselow EE, Richardson KA, Connors BW. Selective, state-dependent activation of somatostatin-expressing inhibitory interneurons in mouse neocortex. *J Neurophysiol*, 100: 2640-2652, 2008.

Zhang J, Laiwalla F, Kim JA, Urabe H, Wagenen Van R, Song Y-K, Connors BW, Zhang F, Deisseroth K, Nurmikko AV. Integrated device for optical stimulation and spatiotemporal electrical recording of neural activity in light sensitized brain tissue. *J Neural Engin*, 6: 55007, 2009.

Parker PRL, Cruikshank SJ, and Connors BW. Stability of electrical coupling despite massive developmental changes of intrinsic neuronal physiology. *J Neurosci*, 29: 9761–9770, 2009.

Zhang J, Laiwalla F, Kim JA, Urabe H, Van Wagenen R, Song YK, Connors BW, Nurmikko AV. A microelectrode array incorporating an optical waveguide device for stimulation and spatiotemporal electrical recording of neural activity. *Conf Proc IEEE Eng Med Biol Soc*. 1: 2046-2049, 2009.

Cruikshank SJ, Urabe H, Nurmikko AV, Connors BW. Pathway-specific feedforward circuits between thalamus and neocortex revealed by selective optical stimulation of axons. *Neuron*, 65: 230–245, 2010.

Lee S-C, Cruikshank SJ, Connors BW. Electrical and chemical synapses between relay neurons in developing thalamus. *J Physiol (London)*. 588: 2403–2415, 2010.

Fanselow EE, Connors BW. The role of somatostatin-expressing (GIN) and fast-spiking interneurons in UP-DOWN states of mouse neocortex. *J Neurophysiol*. 104: 596–606, 2010.

Hayut I, Fanselow EE, Connors BW, Golomb D. LTS and FS inhibitory interneurons, short-term synaptic plasticity, and cortical circuit dynamics. *PLoS Comput Biol*. 7(10): e1002248, 2011.

Sills JB, Connors BW, Burwell RD. Electrophysiological and morphological properties of neurons in layer 5 of the rat postrhinal cortex. *Hippocampus*, 22: 1912-1922, 2012.

Kim JA, Connors BW. High temperatures alter physiological properties of pyramidal cells and inhibitory interneurons in hippocampus. *Frontiers Cell Neurosci*, 6: 27, 2012.

Cruikshank SJ, Ahmed OJ, Stevens TR, Patrick SL, Gonzalez AN, Elmaleh M, Connors BW. Thalamic control of layer 1 circuits in prefrontal cortex. *J Neurosci*, 32: 17813-17823, 2012.

Normand ER, Crandall SR, Thorne CA, Murphy EM, Voelcker B, Browning C, Machan JT, Moore CI, Connors BW, Zervas M. Temporal and mosaic Tsc1 deletion in the developing thalamus disrupts thalamocortical circuitry, neural function, and behavior. *Neuron*, 78: 895–909, 2013.

Lee S-C, Patrick SL, Richardson KA, Connors BW. Two functionally distinct networks of gap junction-coupled inhibitory neurons in the thalamic reticular nucleus. *J Neurosci*, 34:13170-13182, 2014.

Neske GT, Patrick SL, Connors BW. Contributions of diverse excitatory and inhibitory neurons to recurrent network activity in cerebral cortex. *J Neurosci*, 35:1089-1105, 2015.

Crandall SR, Cruikshank SJ, Connors, BW. A corticothalamic switch: controlling the thalamus with dynamic synapses. *Neuron*, 86:768–782, 2015.

Ho JW, Poeta DL, Jacobson TK, Zolnik TA, Neske GT, Connors BW, Burwell RD. Bidirectional Modulation of Recognition Memory. *J Neurosci*, 35:13323-13335, 2015.

Zolnik TA, Connors BW. Electrical synapses and the development of inhibitory circuits in the thalamus. *J Physiol (London)*, 594:2579-2592, 2016.

Neske GT, Connors BW. Distinct roles of SOM and VIP interneurons during cortical Up states. *Frontiers Neural Circuits*, 10:52. DOI: 10.3389/fncir.2016.00052, 2016.

Neske GT, Connors BW. Synchronized gamma-frequency inhibition in neocortex depends on excitatory-inhibitory interactions but not electrical synapses. *J Neurophysiol*, 116:351-368, 2016.

- Blaeser AS, Connors BW, Nurmikko AV. Spontaneous dynamics of neural networks in deep layers of prefrontal cortex. *J Neurophysiol*, 117:1581-1594, 2017.
- Crandall SR, Patrick SL, Cruikshank SJ, Connors BW. Infrabarrels are layer 6 circuit modules in the barrel cortex that link long-range inputs and outputs, *Cell Reports*, 21:3065–3078, 2017.
- Goodwill HL, Manzano-Nieves G, LaChance P, Teramoto S, Lin S, Lopez C, Stevenson RJ, Theyel BB, Moore CI, Connors BW, and Bath KG. Early life stress drives sex selective impairments in reversal learning through effects on parvalbumin interneurons in the orbitofrontal cortex of mice. *Cell Reports*, 25:2299-2307, 2018.
- Cao X-J, Lin L, Sugden AU, Connors BW, and Oertel D. Nitric Oxide-Mediated Plasticity of Interconnections between T Stellate Cells of the Ventral Cochlear Nucleus Generate Positive Feedback and Constitute a Central Gain Control in the Auditory System. *J Neurosci*, 39: 6095-6107, 2019.
- Martinez-Garcia RI, Voelcker B, Zaltsman JB, Patrick SL, Stevens TR, Connors BW, Cruikshank SJ. Two dynamically distinct circuits driving inhibition in sensory thalamus. *Nature*, 583: 813-818, 2020.

#### REVIEWS, ESSAYS, AND BOOK CHAPTERS:

- Somjen G, Dingledine R, Connors B, Allen B. Extracellular potassium and calcium activities in the mammalian spinal cord and the effect of changing ion levels on mammalian neural tissues. In: *Ion Selective Microelectrodes and Their Use in Excitable Tissues*. E Sykova et al. (eds.), Plenum Press, pp. 159-180, 1981.
- Somjen G, Connors B, Kinnes C. Calcium activity and seizure mechanisms in the spinal cord of cats. In: *Physiology and Pharmacology of Epileptogenic Phenomena*. M Klee et al. (eds.), Raven Press, New York, pp. 309-318, 1982.
- Prince DA, Connors BW, Benardo LS. Mechanisms underlying interictal-ictal transitions. *Advances in Neurology, Vol. 34: Status Epilepticus*. AV Delgado-Escueta et al. (eds.), Raven Press, New York, pp. 179-189, 1982.
- Connors BW, Gutnick MJ. Neocortex: Cellular properties and intrinsic circuits. In: *Brain Slices*. R Dingledine (ed.), Plenum Press, New York, pp. 313-339, 1984.
- Prince DA, Connors BW. Mechanisms of epileptogenesis in cortical structures. *Ann. Neurol.* 16:S59-S64, 1984.
- Connors BW, Gutnick MJ. Cellular mechanisms of neocortical epileptogenesis in an acute experimental model. In: *Electrophysiology of Epilepsy*, P Schwartzkroin, H Wheal (eds.), Academic Press, pp. 79-105, 1984.
- Ransom BR, Yamate CL, Connors BW. Developmental studies on brain extracellular space: Activity-dependent K<sup>+</sup> accumulation and shrinkage. In: *Ion Measurements in Physiology and Medicine*, M Kessler et al. (eds.), Springer-Verlag, Berlin, pp. 206-213, 1985.
- Prince DA, Connors BW. Mechanisms of interictal epileptogenesis. In: *Basic Mechanisms of the Epilepsies (Advances in Neurology, Vol. 44)* AV Delgado-Escueta et al. (eds.), Raven Press, New York, pp. 275-300, 1986.
- Ransom BR, Carlini WG, Connors BW. Brain extracellular space: Developmental studies in rat optic nerve. *Ann. New York Acad. Sci.*, 481: 87-105, 1986.
- Ransom BR, Connors BW. Electrophysiology of ependymal cells in the turtle cortex. In: *Functions of Neuroglia*, A Roitbak (ed.), Metsniereba, Teblisi, pp. 81-90, 1987.
- Connors BW, Gutnick MJ. Intrinsic firing patterns of diverse neocortical neurons. *Trends in Neurosciences*, 13: 99-104, 1990. (also reply to a letter to the editor; Connors, Gutnick, *Trends Neurosci.* 13: 365-366, 1990)

- Connors BW, Chagnac-Amitai Y. Synaptic inhibition, intrinsically bursting neurons, and synchronization in neocortex. *Exp. Brain Res. Ser. 20*, 11-15, 1991.
- Connors BW. GABA<sub>A</sub>- and GABA<sub>B</sub>-mediated processes in visual cortex. In: *Mechanisms of GABA in the Visual System*, RR Mize, R Marc, A Sillito (eds.), *Progress in Brain Res.*, pp. 335-348, 1992.
- Cauler LJ, Connors BW. Functions of very distal dendrites: Experimental and Computational studies of layer I inputs to layer V pyramidal neurons in neocortex. In: *Single Neuron Computation*, T McKenna, J Davis, SF Zornetzer (eds.), Academic Press, pp. 199-230, 1992.
- Silva LR, Connors BW. Synchronized oscillations intrinsic to the neocortex. In: *Epilepsy and Inhibition*, EJ Speckmann, MJ Gutnick (eds.), Urban & Schwarzenberg, Munich, pp. 215-227, 1992.
- Connors BW, Amitai Y. Generation of epileptiform discharge by local circuits of neocortex. In: *Epilepsy: Models, Mechanisms and Concepts*, PA Schwartzkroin (ed.), Cambridge University Press, pp. 388-423, 1993.
- Connors BW, Cauler LJ, Kim HG, Bühlhoff, I. Layer I and the excitable apical dendrite: Substrates for intracortical communication. In: *Structural and Functional Organization of the Neocortex*, B Albowitz et al. (eds.), Springer-Verlag, Berlin, pp. 173-180, 1994.
- Connors BW. Intrinsic neuronal physiology and the functions, dysfunctions and development of neocortex. *Progress Brain Res.*, 102: 195-203, 1994
- Amitai Y, Connors BW. Intrinsic physiology and morphology of single neurons in neocortex. In: *Cerebral Cortex, Vol. 11, The Barrel Cortex of Rodents*, E.G. Jones, I Diamond (eds.), Plenum Press, pp.299-331, 1995
- Connors BW, Amitai Y. Functions of local circuits in neocortex: synchrony and laminae. In: *The Cortical Neuron*, I Mody, MJ Gutnick (eds.), Cambridge Press, pp. 123-141, 1995.
- Connors BW, Castro-Alamancos MA, Beierlein M. Diverse neuronal functions of the cerebral cortex. In: *Excitatory Amino Acids and the Cerebral Cortex*, F Conti, TP Hicks (eds.), MIT Press, pp. 21-32, 1996.
- Connors BW, Regehr WG. Neuronal firing: Does function follow form? *Current Biology*, 6: 1560-1562, 1996.
- Connors BW, Amitai Y. Making waves in the neocortex. *Neuron*, 18: 347-349, 1997.
- Castro-Alamancos MA, Connors BW. Thalamocortical synapses. *Prog Neurobiol.* 51: 581-606, 1997.
- Connors BW. Anatomy and physiology of neocortex. In: *Epilepsy: A Comprehensive Textbook*, J Engel, TA Pedley (eds.), Lippincott-Raven Press, pp. 307-322, 1997.
- Connors BW, Landisman CE, Reid RC. Book review of *Thalamus. Volume I and II.* (M Steriade, EG Jones, DA McCormick; Elsevier, 1997), *Trends Neurosci*, 21: 539-540, 1998.
- Connors BW. Dendritic and synaptic variety in the neocortex. *Develop Neuropsychol*, 16: 311-313, 1999.
- Connors BW, Gil Z, Landisman CE, Gibson JR, Amitai Y. Pathway-specific regulation of synapses in the thalamocortical system. In: *Advances in Synaptic Plasticity*, Baudry M, Davis JL, Thompson RF (eds), MIT Press, pp. 198-219, 2000.
- Connors BW, Telfeian AE. Dynamic properties of cells, synapses, circuits and seizures in neocortex. In: *Neocortical Epilepsies*, Williamson PD et al. (eds), *Advances in Neurology*, 84:141-152, 2000.
- Connors BW, Pinto DJ, Telfeian AE. Local pathways of seizure propagation in neocortex. *Intl Rev Neurobiol*, 45: 527-546, 2001.
- Connors BW. Single neuron mnemonics. *Nature*, 420: 133-134, 2002.
- Gibson JR, Connors BW. Chemical and electrical synapses in neocortex. In: *Handbook of Brain Theory and Neural Networks*, 2<sup>nd</sup> ed., Arbib MA (ed.), MIT Press, pp. 725-729, 2003.
- Connors BW, Long MA. Electrical synapses in the mammalian brain. *Ann Rev Neurosci*, 27: 393-418, 2004.
- Fanselow EE, Connors BW. Navigating a sensorimotor loop. *Neuron*, 45:329-330, 2005.
- Cruikshank SJ, Landisman CE, Mancilla JG, Connors BW. Connexon connexions in the thalamocortical system. *Progress Brain Research*, 149: 41-57, 2005.



- Connors BW, Cruikshank SJ. Bypassing interneurons: inhibition in neocortex. *Nature Neurosci.* 10: 808-810, 2007.
- Richardson KA, Fanselow EE, Connors BW. Neocortical anatomy and physiology. In: *Epilepsy: A Comprehensive Textbook, 2<sup>nd</sup> Ed.*, Engel J, Pedley TA (eds), Lippincott-Williams & Wilkins, pp. 323-336, 2008.
- Cruikshank SJ, Connors BW. Neuroscience: State-sanctioned synchrony. *Nature.* 454: 839-840, 2008.
- Zhang J, Laiwalla F, Kim JA, Urabe H, Van Wagenen R, Song YK, Connors BW, Nurmikko AV. A microelectrode array incorporating an optical waveguide device for stimulation and spatiotemporal electrical recording of neural activity. *Conf Proc IEEE Eng Med Biol Soc.* 1: 2046-2049, 2009.
- Connors BW. Electrical signaling with neuronal gap junctions. In: *Connexins: A Guide*, Harris A, Locke D (eds), Humana Press, pp. 143-164, 2009.
- Wang J, Borton D, Zhang J, Van Wagenen R, Burwell R, Connors B, Nurmikko A. Integrated optoelectronics for neural stimulation and recording in freely moving animals. *Conference on Lasers and Electro-Optics 2010*, OSA Technical Digest (CD), 2010.
- Connors BW, Zolnik TA, Lee S-C. Enhanced functions of electrical junctions. *Neuron* 67: 354-357, 2010.
- Connors BW. The ins and outs of interneurons in epileptic neocortex. *Epilepsy Currents*, 11: 198-199, 2011.
- Connors BW, Ahmed OJ. Integration and autonomy in axons. *Nature Neurosci.* 14:128-130, 2011.
- Connors BW. Tales of a dirty drug: Carbenoxolone, gap junctions, and seizures. *Epilepsy Currents*, 12: 66-68, 2012.
- Amitai Y, Connors BW. Neuregulation: NRG1 tames interneurons and epilepsy. *Epilepsy Currents*, 12: 155-156, 2012.
- Amitai Y, Connors BW. Too much of a good thing may not be wonderful: GluR1 phosphorylation and the consequences of early-life seizures. *Epilepsy Currents*, 13:124-126, 2013.
- Barth A, Burkhalter A, Callaway EM, Connors BW, Cauli B, DeFelipe J, Feldmeyer D, Freund T, Kawaguchi Y, Kisvarday Z, Kubota Y, McBain C, Oberlaender M, Rossier J, Rudy B, Staiger JF, Somogyi P, Tamas G, Yuste R. Comment on "Principles of connectivity among morphologically defined cell types in adult neocortex". *Science*, 353: 1108, 2016.
- Crandall SR, Connors BW. Diverse ensembles of inhibitory interneurons. *Neuron*, 90: 4-6, 2016.
- Connors BW. Synchrony and so much more: Diverse roles for electrical synapses in neural circuits. *Develop Neurobiol*, 77: 610-624, 2017.
- Sahin M, Jones SR, Sweeney JA, Berry-Kravis E, Connors BW, Ewen JB, Hartman AL, Levin AR, Potter WZ, Mamounas LA. Discovering translational biomarkers in neurodevelopmental disorders. *Nature Reviews Drug Discovery*, 18: 235-236, 2019.

#### TEXTBOOKS:

- Bear MF, Connors BW, Paradiso MA. *Neuroscience: Exploring the Brain*, Williams and Wilkins, Baltimore, 1996.
- Bear MF, Connors BW, Paradiso MA. *Neuroscience: Exploring the Brain, 2<sup>nd</sup> Ed.*, Lippincott Williams & Wilkins, Baltimore, 2001.
- Bear MF, Connors BW, Paradiso MA. *Neuroscience: Exploring the Brain, 3<sup>rd</sup> Ed.*, Lippincott Williams & Wilkins, Baltimore, 2007. (translations: Chinese, French, German, Italian, Japanese, Portuguese, Spanish)
- Bear MF, Connors BW, Paradiso MA. *Neuroscience: Exploring the Brain, 4<sup>th</sup> Ed.*, Jones & Bartlett Learning, 2015. (British Medical Association, Medical Book Awards 2016, "Highly Commended" among Basic Science Books)

Connors BW. Chapters 11 (Physiology of neurons), 12 (Synaptic transmission in the nervous system), 13 (Sensory transduction), 14 (Circuits of the central nervous system), In: *Medical Physiology: A Cellular and Molecular Approach*, W.F. Boron, E.L. Boulpaep (eds.), W.B. Saunders, Philadelphia, pp. 280-377, 2003; updated edition 2005.

Connors BW. Chapters 12 (Physiology of neurons), 13 (Synaptic transmission in the nervous system), 15 (Sensory transduction), 16 (Circuits of the central nervous system), In: *Medical Physiology: A Cellular and Molecular Approach, 2<sup>nd</sup> Ed.*, W.F. Boron, E.L. Boulpaep (eds.), Saunders-Elsevier, Philadelphia, pp. 310-350, 371-426, 2009.

Connors BW. Chapters 12 (Physiology of neurons), 13 (Synaptic transmission in the nervous system), 15 (Sensory transduction), 16 (Circuits of the central nervous system), In: *Medical Physiology: A Cellular and Molecular Approach, 3<sup>rd</sup> Ed.*, W.F. Boron, E.L. Boulpaep (eds.), Elsevier, Philadelphia, pp. 295-333, 353-407, 2016.

## **RESEARCH GRANTS:**

### **Current:**

NIH (NINDS), "Neocortical control of the thalamus". R01 NS-100016-01, 7/17-5/22, Multi-PIs: Connors and Cruikshank

NIH (NIMH), "Mechanisms driving sex differences in cognitive outcomes following early life stress". R01 MH115049, 8/18-4/23, PI: Kevin Bath, co-I: Connors

NSF EPSCoR, RII Track-2 FEC; "Neural Basis of Attention", 9/16 – 8/21, Tse (PI), Connors (Co-I)

### **Recent mentored grants to lab trainees:**

NIH (NINDS), K08 Mentored Clinical Scientist Research Career Development Award, NS118114, 2020-25, Brian Theyel (Connors, mentor)

NIH (NINDS), predoctoral NRSA, "Control of thalamic circuits by a higher-order cortical area", F31 NS118960, 2020-23, PI: Julia Zaltsman (Connors & Burwell), mentors

NIH (NINDS), predoctoral NRSA, "A unique inhibitory interneuron that regulates sensory coding in neocortex", F31 NS120720. 2020-23, PI: F. Scott Susi (Connors & Moore), mentors

Fox Postdoctoral Fellowship, 2020-21, Rosa Martinez-Garcia Robin (Connors, mentor)

NIH (NINDS), K99 Pathway to Independence award, "Dynamic properties of corticothalamic circuits", NS096108, 4/16-3/18, PI: Shane Crandall (Connors, mentor)

NSF Graduate Research Fellowship, 2014-17, PI: Rosa Martinez-Garcia (Connors, mentor)

NSF Graduate Research Fellowship, 2014-17, PI: Elizabeth McDonnell (Connors, mentor)

NIH (NINDS), postdoctoral NRSA, "Functions of naturally diverse inhibitory networks in neocortex", F32 NS084763, 2013-16, PI: Shane Crandall (Connors, mentor)

NIH (NINDS), predoctoral NRSA, "Functions of conditional Cx36-dependent electrical synapses in the neocortex", F31 NS083247, 2013-16, PI: Arthur Sugden (Connors, mentor)

Chemers Neustein Graduate Fellowship in Brain Science, 2014-15, PI: Garrett Neske (Connors, mentor)

### **Completed grants (recent):**

NIH (NINDS), "Functions of electrical synapses in inhibitory networks". R01 NS-050434-08, 2/14-1/19, PI: Connors

Simons Foundation Autism Research Initiative (SFARI), "Disruptions of Cortical Function Due to Mutations of TSC1 and NHE6", 9/16-8/18, PI: Connors, co-PI: Theyel

NIH (NINDS), "Electrical synapses in the mammalian brain". R01 NS-050434-05, 1/05-12/10, PI: Connors

NIH (NINDS), "Cellular physiology of neuronal circuits in neocortex", RO1 NS-025983-20, 4/06-4/11, PI: Connors

Brown University (OVPR Seed Grant), "The role of electrical coupling between mitral cells in olfactory coding"; co-PIs: Gilad Barnea, Barry Connors

NIMH, "Postdoctoral Training Program in Systems and Behavioral Neuroscience", T32 MH019118-19, 7/09-6/14, PI: Connors

NSF, "Integration of Dynamic Sensing and Actuating of Neural Microcircuits", EFRI-0937848, 2010-14; PI: Arto Nurmikko (Connors, co-PI)

NIH (NIMH), "Neurocircuitry Underlying DBS Effects in OCD: A Window into Mechanisms of Action", P50 MH086400-01, 9/09-8/14, PI: Haber (Connors, co-PI)

DARPA-BAA-09-27, "Brain Reorganization and Plasticity to Accelerate Injury Recovery (REPAIR): Multi-scale and Multi-modal Models Enabled by Next Generation Neurotechnology", 2010-15; PIs: Krishna Shenoy and Arto Nurmikko (Connors, co-PI)

New Frontiers Award, "Disruptions of Cortical Function Due to Thalamic Mutations in a Mouse Model of Autism", Brown Institute for Brain Science & Norman Prince Neuroscience Institute, 7/15-6/16. Co-PIs: Connors & Theyel

**PhD dissertations supervised (graduate fellowships; subsequent positions):**

1983-88      Aric A. Agmon, PhD, Stanford Neurosciences Graduate Program. Dissertation title: "Intrinsic properties and synaptic connectivity of mouse barrel cortex neurons: Correlation between firing patterns and thalamocortical inputs"; Professor, Dept. of Physiology, West Virginia Univ

1985-91      Lauren R. Silva, PhD, Stanford Neurosciences Graduate Program. Dissertation title: "Pyramidal neurons of neocortical layer 5: Intrinsic firing properties, mechanisms of inhibition, and role in synchronized cortical activity"; Project Director, Boston Univ. School of Public Health and VA Medical Center

1989-93      Albert E. Telfeian, MD, PhD, Brown Physiology Graduate Program. Dissertation title: "Mechanisms and pathways for the horizontal propagation of synchronized discharges in neocortex"; Professor of Neurosurgery, Alpert Medical School, Brown University

1994-00      Michael Beierlein, PhD, Brown Neuroscience Graduate Program. Dissertation title: "Dynamic properties of chemical and electrical synapses in neocortex"; Associate Professor, Univ of Texas Medical School at Houston

1998-02      Michael A. Long, PhD, Brown Neuroscience Graduate Program. Dissertation title: "Electrical synapses in the mammalian brain"; Associate Professor, New York Univ

2004-10      Seung-Chan Lee, PhD, Brown Neuroscience Graduate Program. Dissertation title: "Development, organization, and function of electrical synapses in the thalamus"; Staff Research Fellow, NIDA, NIH

2006-10      Jennifer A. Kim, MD, PhD, Brown Neuroscience Graduate and MD/PhD Programs (predoctoral NRSA from NIH). Dissertation title: "Febrile seizures, hyperthermia, and hippocampal neuron physiology"; Assistant Professor of Neurology, Yale Medical School

2006-11      Timothy A. Zolnik, PhD, Brown Neuroscience Graduate Program (predoctoral NRSA from NIH). Dissertation title: "Development and function of synapses in the thalamus"; Research Associate, Berlin University

2011-15      Arthur U. Sugden, PhD, Brown Graduate Program in Molecular Biology, Cell Biology, Biochemistry (predoctoral NRSA from NIH). Dissertation title: "Diverse subtypes of fast-spiking inhibitory neurons in neocortex"; Research Associate, Harvard Med School

- 2011-15 Garrett T. Neske, PhD, Brown Neuroscience Graduate Program (Robin Chemers Neustein Graduate Fellowship). Dissertation title: "Roles of diverse inhibitory interneurons and mechanisms of synchronized inhibition in active cortical networks"; postdoc fellow, Yale Univ
- 2013-19 Rosa I. Martinez-Garcia, PhD, Brown Graduate Program in Molecular Biology, Cell Biology, Biochemistry (NSF Graduate Research Fellowship). Dissertation title: "Functions and genetically induced dysfunctions of neural circuit in the thalamus"; Reserch Assoc, Brown Univ
- 2017-present Rachel Stevenson, Brown Neuroscience Graduate Program
- 2018-present Julia B. Zaltsman, Brown Neuroscience Graduate Program
- 2018-present F. Scott Susi, Brown Neuroscience Graduate Program

**Postdoctoral Fellows and Research Associates supervised (fellowships; subsequent positions):**

- 1986-87 Yael Amitai, MD (Katherine McCormick Fellowship); Professor, Dept. of Physiology & Cell Biology, Ben-Gurion Univ, Israel
- 1988-91 Lawrence J. Cauller, PhD (postdoctoral NRSA from NIH); Associate Professor, Univ of Texas at Dallas (deceased)
- 1990-93 Isabelle Bühlhoff, PhD; group leader, Max-Planck Institute, Tübingen, Germany
- 1990-93 Han G. Kim, PhD (postdoctoral NRSA from NIH); self-employed
- 1992-93 Andrew Nicoll, DPhil; teacher, Bristol, U.K.
- 1993-94 Lauren R. Silva, PhD (postdoctoral NRSA from NIH); Project Director, Boston Univ School of Public Health and VA Medical Center
- 1994-95 Ayako Ajima, PhD (Human Frontiers Science Program Postdoctoral Fellow); Research Scientist, RIKEN, Wako, Japan
- 1994-97 Manuel A. Castro-Alamancos, PhD (postdoc fellow, Ministry Science & Education of Spain; American Epilepsy Soc. Research Fellow; postdoc NRSA from NIH); Professor, Dept Neuroscience, Univ Connecticut School of Medicine.
- 1996-98 Gerald T. Finnerty, MD, PhD (Wellcome Trust Advanced Training Fellowship); Wellcome Senior Clinical Lecturer, Dept. Clinical Neurosciences, Institute of Psychiatry, Kings College London.
- 1997-01 Jay R. Gibson, PhD (postdoctoral NRSA from NIH); Associate Professor, Center for Basic Neuroscience, Univ of Texas Southwestern Medical Center, Dallas
- 1996-04 Carole E. Landisman, PhD (Helen Hay Whitney Postdoctoral Fellowship); Assistant Professor, Center for Brain Science/Children's Hospital, Harvard University
- 1997-04 David J. Pinto, PhD (Burroughs-Wellcome postdoctoral fellowship); Assistant Professor, Biomedical Engineering, University of Rochester
- 1999-04 Jaime G. Mancilla, PhD (postdoctoral NRSA from NIH; American Epilepsy Soc. Research Fellow); Assistant Professor of Biology, Hamilton College
- 2000-04 Cynthia D. Rittenhouse, PhD (postdoctoral NRSA from NIH); Research Assistant Professor, University of Rochester
- 2001-06 Scott J. Cruikshank, PhD; Assistant Professor, Dept of Neurobiology, Univ of Alabama at Birmingham, School of Medicine
- 2001-07 Erika E. Fanselow, PhD (postdoctoral NRSA from NIH; American Epilepsy Soc. Research Fellow); Lecturer, Dept. of Neuroscience, University of Pittsburgh
- 2002-03 Michael A. Long, PhD (Fox Postdoctoral Fellowship); Associate Professor, Depts of Physiology & Neuroscience, Otolaryngology, New York University
- 2004-09 Kristen A. Richardson, PhD (postdoctoral NRSA from NIH); Senior Research Scientist, Galenea Corp., Cambridge MA

2010-11 Seung-Chan Lee, PhD; Staff Research Fellow, NIDA, NIH  
2010-11 Omar J. Ahmed, PhD; Assistant Professor, Depts of Psychology, Neuroscience,  
Biomedical Engineering, University of Michigan  
2010-12 Elizabeth Hur, PhD; Postdoc Fellow, NIH  
2011-12 Timothy A. Zolnik, PhD; Research Associate, Berlin University  
2011-12 Teghpal Singh, PhD (postdoctoral NRSA from NIMH); ORISE Fellow, FDA; Senior  
Manager, Blueprint Medicines  
2012-17 Shane R. Crandall, PhD (postdoctoral NRSA from NIH; K99/R00 Pathway to  
Independence Award from NINDS); Assistant Professor, Dept of Physiology, Michigan  
State University  
2016-17 Francesco G. Pucci, MD; Neurosurgery Fellow, Cleveland Clinic  
2015-19 Brian B. Theyel, MD, PhD; (K08 Clinical Investigator Award from NINDS), Assistant  
Professor of Psychiatry and Neuroscience, Brown Univ  
2007-present Tanya R. Stevens, PhD; Investigator, Brown Univ  
2018-present Frederic Pouille, PhD; Senior Research Associate, Brown Univ  
2019-present Rosa I. Martinez-Garcia, PhD (Fox Postdoctoral Fellowship); Postdoctoral Research  
Associate, Brown Univ