

Stanford



Julie Kauer

Professor (Research) of Psychiatry and Behavioral Sciences

 NIH Biosketch available Online

Bio

ACADEMIC APPOINTMENTS

- Professor (Research), Psychiatry and Behavioral Sciences
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Fellow, American Association for the Advancement of Science (2012)

Teaching

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Julieta Gomez-Frittelli

Postdoctoral Faculty Sponsor

Chelsie Brewer, Claire Manning, Valentina Martinez Damonte

Publications

PUBLICATIONS

- **Synaptic plasticity at inhibitory synapses in the ventral tegmental area depends upon stimulation site.** *eNeuro*
St Laurent, R., Kauer, J.
2019
- **Properties of neurons in the superficial laminae of trigeminal nucleus caudalis.** *Physiological reports*
Pradier, B., McCormick, S. J., Tsuda, A. C., Chen, R. W., Atkinson, A. L., Westrick, M. R., Buckholtz, C. L., Kauer, J. A.
2019; 7 (12): e14112
- **Two-Pronged Control of the Dorsal Raphe by the VTA.** *Neuron*
Kauer, J. A., Polter, A. M.
2019; 101 (4): 553–55
- **NMDA receptor activation induces long-term potentiation of glycine synapses.** *PloS one*
Kloc, M. L., Pradier, B., Chirila, A. M., Kauer, J. A.
2019; 14 (9): e0222066
- **Long-Term Depression Induced by Optogenetically Driven Nociceptive Inputs to Trigeminal Nucleus Caudalis or Headache Triggers** *JOURNAL OF NEUROSCIENCE*
Pradier, B., Bin Shin, H., Kim, D., St Laurent, R., Lipscombe, D., Kauer, J. A.

2018; 38 (34): 7529–40

- **Persistent but Labile Synaptic Plasticity at Excitatory Synapses** *JOURNAL OF NEUROSCIENCE*
Pradier, B., Lanning, K., Taljan, K. T., Feuille, C. J., Nagy, M., Kauer, J. A.
2018; 38 (25): 5750–58
- **Synaptic function and plasticity in identified inhibitory inputs onto VTA dopamine neurons** *EUROPEAN JOURNAL OF NEUROSCIENCE*
Polter, A. M., Barcomb, K., Tsuda, A. C., Kauer, J. A.
2018; 47 (10): 1208–18
- **Constitutive activation of kappa opioid receptors at ventral tegmental area inhibitory synapses following acute stress** *ELIFE*
Polter, A. M., Barcomb, K., Chen, R. W., Dingess, P. M., Graziane, N. M., Brown, T. E., Kauer, J. A.
2017; 6
- **Three-Dimensional Neural Spheroid Culture: An In Vitro Model for Cortical Studies** *TISSUE ENGINEERING PART C-METHODS*
Dingle, Y. L., Boutin, M. E., Chirila, A. M., Livi, L. L., Labriola, N. R., Jakubek, L. M., Morgan, J. R., Darling, E. M., Kauer, J. A., Hoffman-Kim, D.
2015; 21 (12): 1274–83
- **Poststress Block of Kappa Opioid Receptors Rescues Long-Term Potentiation of Inhibitory Synapses and Prevents Reinstatement of Cocaine Seeking** *BIOLOGICAL PSYCHIATRY*
Polter, A. M., Bishop, R. A., Briand, L. A., Graziane, N. M., Pierce, R., Kauer, J. A.
2014; 76 (10): 785–93
- **Yin and Yang: Unsilencing Synapses to Control Cocaine Seeking** *NEURON*
Kauer, J. A., Polter, A. M.
2014; 83 (6): 1234–36
- **Different Classes of Sensory Neurons Visualized and Controlled in Spinal Dorsal Horn by Optogenetic Methods**
Dubreuil, D. M., Allen, S. E., Chirila, A. M., Denome, S., Kauer, J. A., Lipscombe, D.
ROCKEFELLER UNIV PRESS.2014: 6A–7A
- **Long-term potentiation of glycinergic synapses triggered by interleukin 1 beta** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Chirila, A. M., Brown, T. E., Bishop, R. A., Bellono, N. W., Pucci, F. G., Kauer, J. A.
2014; 111 (22): 8263–68
- **Stress and VTA synapses: implications for addiction and depression** *EUROPEAN JOURNAL OF NEUROSCIENCE*
Polter, A. M., Kauer, J. A.
2014; 39 (7): 1179–88
- **Christianson Syndrome Protein NHE6 Modulates TrkB Endosomal Signaling Required for Neuronal Circuit Development** *NEURON*
Ouyang, Q., Lizarraga, S. B., Schmidt, M., Yang, U., Gong, J., Ellisor, D., Kauer, J. A., Morrow, E. M.
2013; 80 (1): 97–112
- **Loss of interneuron LTD and attenuated pyramidal cell LTP in Trpv1 and Trpv3 KO mice** *HIPPOCAMPUS*
Brown, T. E., Chirila, A. M., Schrank, B. R., Kauer, J. A.
2013; 23 (8): 662–71
- **Kappa Opioid Receptors Regulate Stress-Induced Cocaine Seeking and Synaptic Plasticity** *NEURON*
Graziane, N. M., Polter, A. M., Briand, L. A., Pierce, R., Kauer, J. A.
2013; 77 (5): 942–54
- **A novel non-CB1/TRPV1 endocannabinoid-mediated mechanism depresses excitatory synapses on hippocampal CA1 interneurons** *HIPPOCAMPUS*
Edwards, J. G., Gibson, H. E., Jensen, T., Nugent, F., Walther, C., Blickenstaff, J., Kauer, J. A.
2012; 22 (2): 209–21
- **PDZ binding of TARP gamma-8 controls synaptic transmission but not synaptic plasticity** *NATURE NEUROSCIENCE*
Sumioka, A., Brown, T. E., Kato, A. S., Bredt, D. S., Kauer, J. A., Tomita, S.
2011; 14 (11): 1410–12
- **Drugs of abuse and stress impair LTP at inhibitory synapses in the ventral tegmental area** *EUROPEAN JOURNAL OF NEUROSCIENCE*

-
- Niehaus, J. L., Murali, M., Kauer, J. A.
2010; 32 (1): 108–17
- **Presynaptic plasticity: targeted control of inhibitory networks** *CURRENT OPINION IN NEUROBIOLOGY*
McBain, C. J., Kauer, J. A.
2009; 19 (3): 254–62
 - **PKG and PKA Signaling in LTP at GABAergic Synapses** *NEUROPSYCHOPHARMACOLOGY*
Nugent, F. S., Niehaus, J. L., Kauer, J. A.
2009; 34 (7): 1829–42
 - **Hot flash: TRPV channels in the brain** *TRENDS IN NEUROSCIENCES*
Kauer, J. A., Gibson, H. E.
2009; 32 (4): 215–24
 - **Plasticity of Addiction: A Mesolimbic Dopamine Short-Circuit?** *AMERICAN JOURNAL ON ADDICTIONS*
Niehaus, J. L., Cruz-Bermudez, N. D., Kauer, J. A.
2009; 18 (4): 259–71
 - **Myosin Vb Mobilizes Recycling Endosomes and AMPA Receptors for Postsynaptic Plasticity** *CELL*
Wang, Z., Edwards, J. G., Riley, N., Provance, D., Karcher, R., Li, X., Davison, I. G., Ikebe, M., Mercer, J. A., Kauer, J. A., Ehlers, M. D.
2008; 135 (3): 535–48
 - **TRPV1: hot new channels in the brain** *FUTURE NEUROLOGY*
Kauer, J. A.
2008; 3 (5): 507–10
 - **High-frequency afferent stimulation induces long-term potentiation of field potentials in the ventral tegmental area** *NEUROPSYCHOPHARMACOLOGY*
Nugent, F. S., Hwong, A. R., Udaka, Y., Kauer, J. A.
2008; 33 (7): 1704–12
 - **LTP of GABAergic synapses in the ventral tegmental area and beyond**
Nugent, F. S., Kauer, J. A.
BLACKWELL PUBLISHING.2008: 1487–93
 - **TRPV1 channels mediate long-term depression at synapses on hippocampal interneurons** *NEURON*
Gibson, H. E., Edwards, J. G., Page, R. S., Van Hook, M. J., Kauer, J. A.
2008; 57 (5): 746–59
 - **Synaptic plasticity and addiction** *NATURE REVIEWS NEUROSCIENCE*
Kauer, J. A., Malenka, R. C.
2007; 8 (11): 844–858
 - **Opioids block long-term potentiation of inhibitory synapses** *NATURE*
Nugent, F. S., Penick, E. C., Kauer, J. A.
2007; 446 (7139): 1086–90
 - **Amphetamine depresses excitatory synaptic transmission at prefrontal cortical layer V synapses** *NEUROPHARMACOLOGY*
Mair, R. D., Kauer, J. A.
2007; 52 (1): 193–199
 - **LTP: AMPA receptors trading places** *NATURE NEUROSCIENCE*
Kauer, J. A., Malenka, R. C.
2006; 9 (5): 593–94
 - **Long-term synaptic plasticity at excitatory and inhibitory synapses on dopamine neurons of the VTA**
Kauer, J. A., Nugent, F. S., Penick, E. C.
NATURE PUBLISHING GROUP.2005: S59
 - **Neuroscience - A home for the nicotine habit** *NATURE*
Kauer, J. A.

2005; 436 (7047): 31–32

- **Inhibitory synapses turn exciting** *NATURE NEUROSCIENCE*
Kauer, J. A.
2005; 8 (3): 257–58
- **Rapid synaptic plasticity of glutamatergic synapses on dopamine neurons in the ventral tegmental area in response to acute amphetamine injection** *NEUROPSYCHOPHARMACOLOGY*
Faleiro, L. J., Jones, S., Kauer, J. A.
2004; 29 (12): 2115–25
- **Recycling endosomes supply AMPA receptors for LTP** *SCIENCE*
Park, M., Penick, E. C., Edwards, J. G., Kauer, J. A., Ehlers, M. D.
2004; 305 (5692): 1972–1975
- **Learning mechanisms in addiction: Synaptic plasticity in the ventral tegmental area as a result of exposure to drugs of abuse** *ANNUAL REVIEW OF PHYSIOLOGY*
Kauer, J. A.
2004; 66: 447–75
- **Repeated exposure to amphetamine disrupts dopaminergic modulation of excitatory synaptic plasticity and neurotransmission in nucleus accumbens** *SYNAPSE*
Li, Y., Kauer, J. A.
2004; 51 (1): 1–10
- **Addictive drugs and stress trigger a common change at VTA Synapses** *NEURON*
Kauer, J. A.
2003; 37 (4): 549–50
- **Novel protein kinase A-dependent long-term depression of excitatory synapses** *NEURON*
Gutlerner, J. L., Penick, E. C., Snyder, E. M., Kauer, J. A.
2002; 36 (5): 921–31
- **Long-term potentiation in mice lacking the neural cell adhesion molecule L1** *CURRENT BIOLOGY*
Bliss, T., Errington, M., Fransén, E., Godfraind, J. M., Kauer, J. A., Kooy, R. F., Maness, P. F., Furley, A. J.
2000; 10 (24): 1607–10
- **Amphetamine blocks long-term synaptic depression in the ventral tegmental area** *JOURNAL OF NEUROSCIENCE*
Jones, S., Kornblum, J. L., Kauer, J. A.
2000; 20 (15): 5575–80
- **Amphetamine depresses excitatory synaptic transmission via serotonin receptors in the ventral tegmental area** *JOURNAL OF NEUROSCIENCE*
Jones, S., Kauer, J. A.
1999; 19 (22): 9780–87
- **Blockade of hippocampal long-term potentiation by sustained tetanic stimulation near the recording site** *JOURNAL OF NEUROPHYSIOLOGY*
Kauer, J. A.
1999; 81 (2): 940–44
- **Perturbed dentate gyrus function in serotonin 5-HT_{2C} receptor mutant mice** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Tecott, L. H., Logue, S. F., Wehner, J. M., Kauer, J. A.
1998; 95 (25): 15026–31
- **Functionally distinct groups of interneurons identified during rhythmic carbachol oscillations in hippocampus in vitro** *JOURNAL OF NEUROSCIENCE*
McMahon, L. L., Williams, J. H., Kauer, J. A.
1998; 18 (15): 5640–51
- **Focal photolysis of caged glutamate produces long-term depression of hippocampal glutamate receptors** *NATURE NEUROSCIENCE*
Kandler, K., Katz, L. C., Kauer, J. A.
1998; 1 (2): 119–23

- **Properties of carbachol-induced oscillatory activity in rat hippocampus** *JOURNAL OF NEUROPHYSIOLOGY*
Williams, J. H., Kauer, J. A.
1997; 78 (5): 2631–40
- **Hippocampal interneurons are excited via serotonin-gated ion channels** *JOURNAL OF NEUROPHYSIOLOGY*
McMahon, L. L., Kauer, J. A.
1997; 78 (5): 2493–2502
- **Hippocampal interneurons express a novel form of synaptic plasticity** *NEURON*
McMahon, L. L., Kauer, J. A.
1997; 18 (2): 295–305
- **Whole-cell patch-clamp recording reveals subthreshold sound-evoked postsynaptic currents in the inferior colliculus of awake bats** *JOURNAL OF NEUROSCIENCE*
Covey, E., Kauer, J. A., Casseday, J. H.
1996; 16 (9): 3009–18
- **METABOTROPIC GLUTAMATE RECEPTOR-INDUCED DISINHIBITION IS MEDIATED BY REDUCED TRANSMISSION AT EXCITATORY SYNAPSES ONTO INTERNEURONS AND INHIBITORY SYNAPSES ONTO PYRAMIDAL CELLS** *NEUROSCIENCE LETTERS*
DESAI, M. A., MCBAIN, C. J., KAUER, J. A., CONN, P. J.
1994; 181 (1-2): 78–82
- **ACTIVATION OF METABOTROPIC GLUTAMATE RECEPTORS DIFFERENTIALLY AFFECTS 2 CLASSES OF HIPPOCAMPAL INTERNEURONS AND POTENTIATES EXCITATORY SYNAPTIC TRANSMISSION** *JOURNAL OF NEUROSCIENCE*
MCBAIN, C. J., DICHIARA, T. J., KAUER, J. A.
1994; 14 (7): 4433–45