



Kristina Micheva

Sr Res Scientist-Basic Ls, Molecular and Cellular Physiology

Bio

EDUCATION AND CERTIFICATIONS

- PhD, University of Montreal, Canada , Neuroscience (1996)

SERVICE, VOLUNTEER, AND COMMUNITY WORK

- Neurobiology Course, Faculty (2006 - 2014)

PATENTS

- Kristina D. Micheva, Stephen J Smith. "United States Patent 7,767,414 Optical Imaging of molecular characteristics of biological specimen", Leland Stanford Junior University
- Kristina D. Micheva, Stephen J Smith. "United States Patent 9,008,378 Arrangement and Imaging of Biological Samples", Leland Stanford Junior University

Publications

PUBLICATIONS

- **A synapse census for the ages.** *Science (New York, N.Y.)*
Micheva, K. D., Weinberg, R. J., Smith, S. J.
2020; 369 (6501): 253–54
- **Multifaceted Changes in Synaptic Composition and Astrocytic Involvement in a Mouse Model of Fragile X Syndrome.** *Scientific reports*
Simhal, A. K., Zuo, Y., Perez, M. M., Madison, D. V., Sapiro, G., Micheva, K. D.
2019; 9 (1): 13855
- **Distinctive Structural and Molecular Features of Myelinated Inhibitory Axons in Human Neocortex.** *eNeuro*
Micheva, K. D., Chang, E. F., Nana, A. L., Seeley, W. W., Ting, J. T., Cobbs, C., Lein, E., Smith, S. J., Weinberg, R. J., Madison, D. V.
2018; 5 (5)
- **A Computational Synaptic Antibody Characterization Tool for Array Tomography** *FRONTIERS IN NEUROANATOMY*
Simhal, A. K., Gong, B., Trimmer, J. S., Weinberg, R. J., Smith, S. J., Sapiro, G., Micheva, K. D.
2018; 12
- **A Computational Synaptic Antibody Characterization Tool for Array Tomography.** *Frontiers in neuroanatomy*
Simhal, A. K., Gong, B., Trimmer, J. S., Weinberg, R. J., Smith, S. J., Sapiro, G., Micheva, K. D.
2018; 12: 51
- **Probabilistic fluorescence-based synapse detection.** *PLoS computational biology*
Simhal, A. K., Aguerrebere, C., Collman, F., Vogelstein, J. T., Micheva, K. D., Weinberg, R. J., Smith, S. J., Sapiro, G.
2017; 13 (4)
- **Array tomography of physiologically-characterized CNS synapses** *JOURNAL OF NEUROSCIENCE METHODS*
Valenzuela, R. A., Micheva, K. D., Kiraly, M., Li, D., Madison, D. V.

2016; 268: 43-52

- **Enhanced phasic GABA inhibition during the repair phase of stroke: a novel therapeutic target** *BRAIN*
Hiu, T., Farzampour, Z., Paz, J. T., Wang, E. H., Badgely, C., Olson, A., Micheva, K. D., Wang, G., Lemmens, R., Tran, K. V., Nishiyama, Y., Liang, X., Hamilton, et al
2016; 139: 468-480
- **A large fraction of neocortical myelin ensheathes axons of local inhibitory neurons.** *eLife*
Micheva, K. D., Wolman, D., Mensh, B. D., Pax, E., Buchanan, J., Smith, S. J., Bock, D. D.
2016; 5
- **A large fraction of neocortical myelin ensheathes axons of local inhibitory neurons.** *eLife*
Micheva, K. D., Wolman, D., Mensh, B. D., Pax, E., Buchanan, J., Smith, S. J., Bock, D. D.
2016; 5
- **Knowing a synapse when you see one** *FRONTIERS IN NEUROANATOMY*
Burette, A., Collman, F., Micheva, K. D., Smith, S. J., Weinberg, R. J.
2015; 9
- **Mapping synapses by conjugate light-electron array tomography.** *journal of neuroscience*
Collman, F., Buchanan, J., Phend, K. D., Micheva, K. D., Weinberg, R. J., Smith, S. J.
2015; 35 (14): 5792-5807
- **Knowing a synapse when you see one.** *Frontiers in neuroanatomy*
Burette, A., Collman, F., Micheva, K. D., Smith, S. J., Weinberg, R. J.
2015; 9: 100-?
- **Deep molecular diversity of mammalian synapses: why it matters and how to measure it** *NATURE REVIEWS NEUROSCIENCE*
O'Rourke, N. A., Weiler, N. C., Micheva, K. D., Smith, S. J.
2012; 13 (6): 365-379
- **The gain in brain: novel imaging techniques and multiplexed proteomic imaging of brain tissue ultrastructure** *CURRENT OPINION IN NEUROBIOLOGY*
Micheva, K. D., Bruchez, M. P.
2012; 22 (1): 94-100
- **Large-Scale Automated Histology in the Pursuit of Connectomes** *JOURNAL OF NEUROSCIENCE*
Kleinfeld, D., Bharioke, A., Blinder, P., Bock, D. D., Briggman, K. L., Chklovskii, D. B., Denk, W., Helmstaedter, M., Kaufhold, J. P., Lee, W. A., Meyer, H. S., Micheva, K. D., Oberlaender, et al
2011; 31 (45): 16125-16138
- **Single-Synapse Analysis of a Diverse Synapse Population: Proteomic Imaging Methods and Markers** *NEURON*
Micheva, K. D., Busse, B., Weiler, N. C., O'Rourke, N., Smith, S. J.
2010; 68 (4): 639-653
- **Visualizing the Distribution of Synapses from Individual Neurons in the Mouse Brain** *PLOS ONE*
Li, L., Tasic, B., Micheva, K. D., Ivanov, V. M., Spletter, M. L., Smith, S. J., Luo, L.
2010; 5 (7)
- **Classical MHC I Molecules Regulate Retinogeniculate Refinement and Limit Ocular Dominance Plasticity** *NEURON*
Datwani, A., McConnell, M. J., Kanold, P. O., Micheva, K. D., Busse, B., Shamloo, M., Smith, S. J., Shatz, C. J.
2009; 64 (4): 463-470
- **Oligomeric amyloid beta associates with postsynaptic densities and correlates with excitatory synapse loss near senile plaques** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Koffie, R. M., Meyer-Luehmann, M., Hashimoto, T., Adams, K. W., Mielke, M. L., Garcia-Alloza, M., Micheva, K. D., Smith, S. J., Kim, M. L., Lee, V. M., Hyman, B. T., Spires-Jones, T. L.
2009; 106 (10): 4012-4017
- **The classical complement cascade mediates CNS synapse elimination** *CELL*
Stevens, B., Allen, N. J., Vazquez, L. E., Howell, G. R., Christopherson, K. S., Nouri, N., Micheva, K. D., Mehalow, A. K., Huberman, A. D., Stafford, B., Sher, A., Litke, A. M., Lambris, et al

2007; 131 (6): 1164-1178

- **Array tomography: A new tool for imaging the molecular architecture and ultrastructure of neural circuits** *NEURON*
Micheva, K. D., Smith, S. J.
2007; 55 (1): 25-36
- **Pregabalin reduces the release of synaptic vesicles from cultured hippocampal neurons** *MOLECULAR PHARMACOLOGY*
Micheva, K. D., Taylor, C. P., Smith, S. J.
2006; 70 (2): 467-476
- **Strong effects of subphysiological temperature on the function and plasticity of mammalian presynaptic terminals** *JOURNAL OF NEUROSCIENCE*
Micheva, K. D., Smith, S. J.
2005; 25 (33): 7481-7488
- **Detection of glutamate release from neurons by genetically encoded surface-displayed FRET nanosensors** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Okumoto, S., Looger, L. L., Micheva, K. D., Reimer, R. J., Smith, S. J., Frommer, W. B.
2005; 102 (24): 8740-8745
- **Fragmentation of the Golgi apparatus induced by the overexpression of wild-type and mutant human tau forms in neurons** *AMERICAN JOURNAL OF PATHOLOGY*
Liazoghli, D., Perreault, S., Micheva, K. D., Desjardins, M., Leclerc, N.
2005; 166 (5): 1499-1514
- **Retrograde regulation of synaptic vesicle endocytosis and recycling** *NATURE NEUROSCIENCE*
Micheva, K. D., Buchanan, J., Holz, R. W., Smith, S. J.
2003; 6 (9): 925-932
- **Regulation of presynaptic phosphatidylinositol 4,5-bisphosphate by neuronal activity** *JOURNAL OF CELL BIOLOGY*
Micheva, K. D., Holz, R. W., Smith, S. J.
2001; 154 (2): 355-368
- **beta-Actin is confined to structures having high capacity of remodelling in developing and adult rat cerebellum** *EUROPEAN JOURNAL OF NEUROSCIENCE*
Micheva, K. D., Vallee, A., Beaulieu, C., Herman, I. M., Leclerc, N.
1998; 10 (12): 3785-3798
- **Increased number and size of dendritic spines in ipsilateral barrel field cortex following unilateral whisker trimming in postnatal rat** *JOURNAL OF COMPARATIVE NEUROLOGY*
Vees, A. M., Micheva, K. D., Beaulieu, C., Descarries, L.
1998; 400 (1): 110-124
- **Development and plasticity of the inhibitory neocortical circuitry with an emphasis on the rodent barrel field cortex: A review** *Symposium of the Centre-de-Recherche-en-Sciences-Neurologiques-of-the-Universite-de-Montreal on GABA Mechanisms in the Cerebral Cortex*
Micheva, K. D., Beaulieu, C.
NATL RESEARCH COUNCIL CANADA-N R C RESEARCH PRESS.1997: 470-78
- **Quantitative aspects of synaptogenesis in the rat barrel field cortex with special reference to GABA circuitry** *JOURNAL OF COMPARATIVE NEUROLOGY*
Micheva, K. D., Beaulieu, C.
1996; 373 (3): 340-354
- **AN ANATOMICAL SUBSTRATE FOR EXPERIENCE-DEPENDENT PLASTICITY OF THE RAT BARREL FIELD CORTEX** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Micheva, K. D., Beaulieu, C.
1995; 92 (25): 11834-11838
- **NEONATAL SENSORY DEPRIVATION INDUCES SELECTIVE CHANGES IN THE QUANTITATIVE DISTRIBUTION OF GABA-IMMUNOREACTIVE NEURONS IN THE RAT BARREL FIELD CORTEX** *JOURNAL OF COMPARATIVE NEUROLOGY*
Micheva, K. D., Beaulieu, C.
1995; 361 (4): 574-584

- **POSTNATAL-DEVELOPMENT OF GABA NEURONS IN THE RAT SOMATOSENSORY BARREL CORTEX - A QUANTITATIVE STUDY** *EUROPEAN JOURNAL OF NEUROSCIENCE*

Micheva, K. D., Beaulieu, C.
1995; 7 (3): 419-430