

Erik B. Bloss

Curriculum Vitae, 2019

Present Position

Assistant Professor at The Jackson Laboratory;
Visiting Scientist at Janelia Research Campus/HHMI

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Education and Training

2015-2019 Research Scientist at Janelia Research Campus with Dr. Nelson Spruston
2012-2015 Postdoctoral Fellow at Janelia Research Campus with Dr. Nelson Spruston
2007-2012 Ph.D. Student at Mt. Sinai School of Medicine with Dr. John Morrison
Dissertation: *Structural and Molecular plasticity in the Aging Prefrontal Cortex*
2005-2007 Research Technician at Rockefeller University with Dr. Bruce McEwen
2001-2005 University of Colorado-Boulder. B.A., Psychology/Biology

Grants and Fellowships

2009-2012 F31 Predoctoral Fellowship AG034794, National Institute of Aging
2010-2011 Mount Sinai School of Medicine Phillip Hausfeld Memorial Scholarship Award
2004-2005 HHMI/University of Colorado-Boulder Undergraduate Research Opportunity Program.

Recent Invited Talks

2017 European Institute for Theoretical Neuroscience: *Synaptic clustering by single axons on CA1 pyramidal cell dendrites*
2017 Society for Neuroscience Nanosymposium: *Branch- and input-specific synaptic clustering by single axons on CA1 pyramidal cell dendrites*
2017 Gordon Research Conference: *Projection-Specific Forms of Single Axon Connectivity on Tuft Dendrites of CA1 Pyramidal Cells*
2016 Society for Neuroscience Minisymposium: *Array tomography reveals spatially structured dendritic inhibition that supports branch-selective integration in CA1 pyramidal cells*
2015 George Mason University: *Spatially structured inhibition supports branch-specific forms of integration*

Peer-reviewed Journal Publications (most recent first)

1. **Bloss EB**, Hunt DL. Revealing the synaptic hodology of mammalian neural circuits with multiscale neurocartography. *Frontiers of Neuroinformatics*, 2019 (in press).
2. **Bloss EB**, Cembrowski MS, Karsh B, Colonell J, Fetter RD, Spruston N. Single excitatory axons form clustered synapses onto CA1 pyramidal cell dendrites. *Nature Neuroscience*, Mar;21(3):353-363, 2018.
3. **Bloss EB**, Cembrowski MS, Karsh B, Colonell J, Fetter R, and Spruston N. Structured dendritic inhibition supports branch-selective integration in CA1 pyramidal cells. *Neuron*, 89(5):1016-30, 2016.
4. Milstein AD, **Bloss EB**, Dilly GA, Zemelman BV, and Magee JC. Inhibitory Gating of Input Comparison in the CA1 Microcircuit. *Neuron*, 87(6):1274-89, 2015. 87(6):1274-89, 2015.

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5. Viswanathan S, Williams ME, **Bloss EB**, Stasevich TJ, Speer CM, Nern A, Pfeiffer BD, Hooks BM, Li WP, English BP, Tian T, Henry GL, Macklin JJ, Patel R, Gerfen CR, Zhuang X, Wang Y, Rubin GM, and Looger LL. High-performance probes for light and electron microscopy. *Nature Methods*, 12(6):568-76, 2015.
6. McCall T, Weil ZM, Nacher J, **Bloss EB**, El Maarouf A., Rutishauser U, McEwen BS. Depletion of polysialic acid from neural cell adhesion molecule (PSA-NCAM) increases CA3 dendritic arborization and increases vulnerability to excitotoxicity. *Exp Neurol*. 241:5-122013
7. Graves AR, Moore SJ, **Bloss EB**, Mensch B, Kath WL, and Spruston N. Hippocampal pyramidal neurons comprise two distinct cell types that are countermodulated by metabotropic receptors. *Neuron*, 76(4):776-89, 2012.
8. Ohm DT*, **Bloss EB***, Janssen WG, Dietz KC, Wadsworth S, Lou W, Gee NA, Lasley BL, Rapp PR, and Morrison JH. Clinically relevant hormone treatments fail to induce spinogenesis in prefrontal cortex of aged female rhesus monkeys. *J Neurosci* 32(34):11700-11705, 2012. (*co-first authors).
9. **Bloss EB**, Puri R, Yuk FJ, Punsoni M, Hara Y, Janssen WG, McEwen BS, and Morrison JH. Morphological and molecular changes in aging rat prelimbic prefrontal cortical synapses. *Neurobiology of Aging*, 34(1):200-210, 2012.
10. **Bloss EB**, Janssen WG, Ohm DT, Yuk FJ, Wadsworth S, Saardi KM, McEwen BS, and Morrison JH. Evidence for reduced experience-dependent dendritic spine plasticity in the aging prefrontal cortex. *J Neurosci*, 31(21):7831-9, 2011.
11. Karatsoreos IN, Bhagat SM, **Bloss EB**, Morrison JH, McEwen BS. Disruption of circadian clocks has ramifications for metabolism, brain and behavior. *Proc. Natl. Acad. Sci. USA*, 108(4):1657-62, 2011.
12. Bozdagi O, Wang XB, Nikitczuk JS, Anderson TR, **Bloss EB**, Radice GL, Zhou Q, Benson DL, Huntley GW. Persistence of coordinated long-term potentiation and dendritic spine enlargement at mature hippocampal CA1 synapses requires N-cadherin. *J Neurosci*. 28(30):9984-9, 2010.
13. **Bloss EB**, Hunter RG. Hippocampal kainate receptors. *Vitam Horm*. 82:167-84, 2010.
14. **Bloss EB**, Janssen WG, McEwen BS, and Morrison JH. Interactive effects of stress and aging on structural plasticity in the prefrontal cortex. *J Neurosci*, 30(19): 6726-6731, 2010.
15. Hains LE, Loram LC, Weiseler JL, Frank MG, **Bloss EB**, Sholar P, Taylor FR, Harrison JA, Martin TJ, Eisenach JC, Maier SF, Watkins LR. Pain intensity and duration can be enhanced by prior challenge: initial evidence suggestive of a role of microglial priming. *J Pain*. 11(10):1004-14, 2010.
16. Hunter RG, **Bloss EB**, McCarthy KJ, McEwen BS. Regulation of the nicotinic receptor alpha7 subunit by chronic stress and corticosteroids. *Brain Res*. 1325:141-6, 2010.
17. Zhang M, Poplawski M, Yen K, Cheng H, **Bloss E**, Zhu X, Patel H, Mobbs CV. Role of CBP and SATB-1 in aging, dietary restriction, and insulin-like signaling. *PLoS Biol*. 7(11):e1000245, 2009.
18. Goldwater DS, Pavlides C, Hunter RG, **Bloss EB**, Hof PR, McEwen BS, Morrison JH. Structural and functional alterations to rat medial prefrontal cortex following chronic restraint stress and recovery. *Neuroscience*.164(2):798-808, 2009.
19. Hunter RG, Bellani R, **Bloss E**, Costa A, McCarthy K, McEwen BS. Regulation of kainate receptor subunit mRNA by stress and corticosteroids in the rat hippocampus. *PLoS One*. 4(1):e4328, 2009.
20. **Bloss EB**, Hunter RG, Waters EM, Munoz C, Bernard K, McEwen BS. Behavioral and biological effects of chronic S18986, a positive AMPA receptor modulator, during aging. *Exp Neurol*. 210(1):109-17, 2008.
21. Hunter RG, Bellani R, **Bloss E**, Costa A, Romeo RD, McEwen BS. Regulation of CART mRNA by stress and corticosteroids in the hippocampus and amygdala. *Brain Res*. 1152:234-40, 2007.