

JONATHAN D. KENNY

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Solt Laboratory

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Research Interests

System neuroscience, with applications to active emergence and cognitive recovery from general anesthesia.

Education

2009 - **Case Western Reserve University**, Cleveland, OH
B.S. in Biomedical Engineering (expected spring 2016)

Research Experience

2012 - **Massachusetts Institute of Technology**, Cambridge, MA
Department of Brain and Cognitive Sciences
Research Affiliate, advised by Dr. Christa J. Van Dort.

2012 - **Massachusetts General Hospital**, Boston, MA
Department of Anesthesiology, Critical Care, and Pain Medicine
Research Assistant, advised by Prof. Ken Solt.

Original Research Publications

- [1] Chemali JJ, **Kenny JD**, Olutola O, Taylor NE, Kimchi E, Purdon PL, Brown EN, Solt K. Ageing delays emergence from general anesthesia in rats by increasing anaesthetic sensitivity in the brain. *British Journal of Anaesthesia*, 2015, In Press
- [2] Van Dort CJ, Zachs DP, **Kenny JD**, Zheng S, Goldblum RR, Gelwan NA, Ramos DM, Nolan MA, Wang K, Weng F, Lin Y, Wilson MA, Brown EN. Optogenetic activation of cholinergic neurons in the PPT or LDT induces REM sleep. *Proceedings of the National Academy of Sciences* 112(2):584-589, 2015, PMID: 25548191
- [3] **Kenny JD**, Westover MB, Ching S, Brown EN, Solt K. Propofol and sevoflurane induce distinct burst suppression patterns in rats. *Frontiers in System Neuroscience* 8:237, 2014, PMID: 25565990
- [4] Solt K, Van Dort CJ, Chemali JJ, Taylor NE, **Kenny JD**, Brown EN. Electrical stimulation of the ventral tegmental area induces reanimation from general anesthesia. *Anesthesiology* 121(2):311-319, 2014, PMID: 24398816
- [5] Ching S, Liberman MY, Chemali JJ, Westover MB, **Kenny JD**, Solt K, Purdon PL, Brown EN. Real-time closed-loop control in a rodent model of medically induced coma using burst suppression. *Anesthesiology* 119(4):848-860, 2013, PMID: 23770601

Conference Publications

- [6] Ching S, Liberman MY, Chemali JJ, Westover MN, **Kenny J**, Solt K, Purdon PL, Brown EN. Real-time measurement and closed loop control of burst suppression for management of medical coma. IEEE Engineering Medicine and Biology Society Annual International Conference, Osaka, Japan, 2013

Abstracts

- [1] Van Dort CJ, Zachs DP, Zheng S, **Kenny JD**, Goldblum RR, Gelwan N, Ramos DM, Wilson MA, Brown EN. Optogenetic activation of cholinergic neurons in the PPT induces REM sleep. Associated Professional Sleep Societies Annual Meeting, Baltimore, MD, 2013
- [2] Van Dort CJ, Toledano SJ, **Kenny JD**, Wilson MA, Brown EN. Dexmedetomidine-induced sedation is similar to natural NREM sleep in mice. Associated Professional Sleep Societies Annual Meeting, Baltimore, MD, 2013
- [3] Taylor NE, Van Dort CJ, **Kenny J**, Brown EN, Solt K. Optogenetic stimulation of dopamine neurons in the ventral tegmental area induces reanimation from general anesthesia. Association of University Anesthesiologists Annual Meeting, Miami, FL, 2013
- [4] Taylor NE, Van Dort CJ, **Kenny J**, Brown EN, Solt K. Optogenetic stimulation of dopamine neurons in the ventral tegmental area induces reanimation from general anesthesia. American Society of Anesthesiologists Annual Meeting, San Francisco, CA, 2013
- [5] **Kenny JD**, Brown EN, Solt K. Dopamine induces emergence from continuous sevoflurane general anesthesia. Annual meeting of the American Society of Anesthesiologists, San Francisco, CA, 2013
- [6] Solt K, Chemali JJ, Olutola O, **Kenny JD**, Brown EN. Aged rats exhibit prolonged emergence from general anesthesia. American Society of Anesthesiologists Annual Meeting, San Francisco, CA, 2013
- [7] Taylor NE, Van Dort CJ, **Kenny J**, Brown EN, Solt K. Reanimation from general anesthesia induced by optical control of dopamine neurons in the ventral tegmental area. Society for Neuroscience Annual Meeting, San Diego, CA, 2013
- [8] **Kenny JD**, Brown EN, Solt K. Dextroamphetamine induces reanimation from sevoflurane general anesthesia by enhancing dopaminergic neurotransmission. Society for Neuroscience Annual Meeting, San Diego, CA, 2013
- [9] Van Dort CJ, Goldblum RR, Zachs DP, **Kenny JD**, Wilson MA, Brown EN. Single neuron activity in the PPT across the sleep wake cycle in mice. Society for Neuroscience Annual Meeting, San Diego, CA, 2013
- [10] **Kenny JD**, Ching S, Westover M, Solt K, Brown EN. Burst-suppression differs between general anesthetics. International Anesthesia Research Society Annual Meeting, Montreal, Canada, 2014
- [11] Van Dort CJ, **Kenny J**, Zachs D, Goldblum R, Wilson M, Brown E. Optogenetic activation of cholinergic neurons in the LDT increases REM sleep. Society for Neuroscience Annual Meeting, Washington D.C., 2014

- [12] **Kenny JD**, Westover MB, Ching S, Brown EN, Solt K. Distinct burst-suppression patterns are induced by propofol and sevoflurane in rat. Society for Neuroscience Annual Meeting, Washington D.C., 2014
- [13] Muindi F, Van Dort CJ, **Kenny J**, Taylor N, Solt K, Wilson M, Brown EN. Electrical stimulation of the parabrachial nucleus induces reanimation from general anesthesia. Society for Neuroscience Annual Meeting, Washington D.C., 2014
- [14] **Kenny JD**, Taylor NE, Brown EN, Solt K. Low-dose isoflurane induces profound cognitive dysfunction in rats. Association of University Anesthesiologists Annual Meeting, Nashville, TN, 2015
- [15] Solt K, **Kenny JD**, Taylor NE, Brown EN. Low-dose isoflurane profoundly impairs the ability of rats to perform a visual discrimination task. American Society of Anesthesiologists Annual Meeting, San Diego, CA, 2015

Invited Talks

- 2013 International meeting, "Dextroamphetamine Induces Reanimation from General Anesthesia by Activating D1 Dopamine Receptors", American Society of Anesthesiologists Annual Meeting, San Francisco, CA

Poster Presentations

- 2015 International meeting, "Low-dose isoflurane induces profound cognitive dysfunction in rats", Association of University Anesthesiologists Annual Meeting, Nashville, TN
- 2014 International meeting, "Distinct burst-suppression patterns are induced by propofol and sevoflurane in rat", Society for Neuroscience Annual Meeting, Washington D.C.
- 2014 International meeting, "Electroencephalographic burst-suppression patterns differ between propofol and sevoflurane in rat", International Anesthesia Research Society Annual Meeting, Montreal, Canada

Awards

- 2013 Best of Basic Science Abstracts, American Society of Anesthesiologists Annual Meeting, San Francisco, CA

Formally Supervised Trainees

- 2015 Ryan Dubay
Spring Internship, Massachusetts General Hospital
From Western New England University, Springfield, MA
- 2014 Lidiana Lantigua
Summer Internship, Massachusetts General Hospital
From Brooks School, North Andover, MA
- 2013 Rachel Feingold
Summer Internship, Massachusetts General Hospital
From Brooks School, North Andover, MA