
CURRICULUM VITAE

Daniel A. Dombeck

**Associate Professor
Department of Neurobiology
Northwestern University**

EDUCATION & TRAINING:

START MONTH /YEAR	END MONTH/YEAR	DEGREE (if applicable)	INSTITUTION AND LOCATION	TRAINING MENTOR	SCIENTIFIC DISCIPLINE
<u>07/2006</u>	<u>01/2011</u>	<u>Postdoc</u>	<u>Princeton University, Princeton NJ</u>	<u>David Tank</u>	<u>Neuroscience</u>
<u>06/2005</u>	<u>06/2006</u>	<u>Postdoc</u>	<u>Cornell University, Ithaca, NY</u>	<u>Ron Harris-Warrick, Watt Webb</u>	<u>Physics/Neuroscience</u>
<u>08/2000</u>	<u>05/2005</u>	<u>Ph.D.</u>	<u>Cornell University, Ithaca, NY</u>	<u>Watt Webb</u>	<u>Physics</u>
<u>08/1996</u>	<u>06/2000</u>	<u>B.S</u>	<u>University of Illinois, Urbana-Champaign, IL</u>	<u>N/A</u>	<u>Physics</u>

PROFESSIONAL POSITIONS:

START MONTH/ YEAR	END MONTH /YEAR	POSITION TITLE	DEPARTMENT	INSTITUTION AND LOCATION
<u>02/2011</u>	<u>09/2017</u>	<u>Assistant Professor</u>	<u>Neurobiology</u>	<u>Northwestern University, Evanston, IL</u>
<u>09/2017</u>	<u>present</u>	<u>Associate Professor</u>	<u>Neurobiology</u>	<u>Northwestern University, Evanston, IL</u>

Significant Professional Activities

Honors/Awards

2017 AT&T Research Fellow.
 2015 McKnight Scholar Award, McKnight Endowment Fund for Neuroscience.
 2011 Whitehall Research Grant Award, Whitehall Foundation.
 2011 Klingenstein Fellowship, Esther & Joseph Klingenstein Foundation.
 2010 Chicago Biomedical Consortium (CBC) Junior Investigator Award.
 2010 Searle Leadership Fund Award, Northwestern University.
 2007 Research Award for Innovation in Neuroscience, Society for Neuroscience.
 2007 Patterson Trust Postdoctoral Fellowship Program in Brain Circuitry.

Advisory Panels

2014-Present Northwestern University Interdepartmental Neuroscience Program advisory panel.
 2012-Present Chicago Biomedical Consortium Catalyst Award advisory panel.

Peer-Reviewed Publications

1. Howe MW, Ridou I, Letizia-Allegra-Mascaro A, Larios A, Azcorra M, Dombeck DA (2019) "Coordination of rapid cholinergic and dopaminergic signaling in striatum during spontaneous movement." *eLife*.
 2. Heys JG, Dombeck DA (2018) "Evidence for a subcircuit in medial entorhinal cortex representing elapsed time during immobility." *Nature Neuroscience*, 21: 1574-1582.
 3. Sheffield MEJ, Dombeck DA (2019) "Dendritic mechanisms of hippocampal place field formation." (Review) *Current Opinion in Neurobiology*, 54:1-11.
 4. Poulin J-F, Caronia G, Hofer C, Cui Q, Helm B, Ramakrishnan C, Chan CS, Dombeck DA, Deisseroth K, Awatramani R (2018) "Mapping projections of molecularly defined dopamine neuron subtypes using intersectional genetic approaches." *Nature Neuroscience*, 21:1260-1271.
 5. Patriarchi T, et al (2018) "Ultrafast neuronal imaging of dopamine dynamics with designed genetically encoded sensors." *Science*.
 6. Radvansky BA, Dombeck DA (2018) "An olfactory virtual reality system for mice." *Nature Communications*, 9:839.
 7. Sheffield, ME, Adoff MD, Dombeck DA (2017) "Increased Prevalence of Calcium Transients across the Dendritic Arbor during Place Field Formation." *Neuron* 96, 490–504.
 8. Howe MW, Dombeck DA, (2016) "Rapid signaling in distinct dopaminergic axons during locomotion and reward." *Nature*, 535, 505-510.
 9. Sheffield ME, Dombeck DA (2015) "Calcium transient prevalence across the dendritic arbour predicts place field properties." *Nature* 517, 200-204.
 10. Heys JG, Rangarajan KV, Dombeck DA (2014) "The functional micro-organization of grid cells revealed by cellular resolution imaging." *Neuron* 84, 1079-90.
 11. Dombeck DA, Reiser MB (2012) "Real neuroscience in virtual worlds." (Review) *Curr Opin Neurobiol* 22, 3-10.
 12. Ozden I, Dombeck DA, Hoogland TM, Tank DW, Wang SS (2012) "Widespread state-dependent shifts in cerebellar activity in locomoting mice" *PLOS ONE* 7(8), 1-16.
 13. Dombeck DA, Harvey CD, Tian L, Looger LL, Tank DW (2010) "Functional imaging of hippocampal place cells at cellular resolution during virtual navigation." *Nature Neuroscience* 13(11), 1433-1440.
 14. Dombeck DA, Graziano MS, Tank DW (2009) "Functional clustering of neurons in motor cortex determined by cellular resolution imaging in awake behaving mice." *J Neurosci* 29(44), 13751-13760.
 15. Harvey CD, Collman FC, Dombeck DA, Tank DW (2009) "Intracellular dynamics of hippocampal place cells during virtual navigation." *Nature* 461(7266), 941-946.
 16. Dombeck DA, Khabbaz AN, Collman F, Adelman TL, Tank DW (2007) "Imaging large-scale neural activity with cellular resolution in awake, mobile mice." *Neuron* 56, 43-57.
 17. Kwan AC, Dombeck DA, Webb WW (2008) "Polarized microtubule arrays in apical dendrites and axons." *Proc Natl Acad Sci USA* 105(32), 11370-5.
 18. Wilson JM, Dombeck DA, Diaz-Rios M, Harris-Warrick RM, Brownstone RM (2007) "Two-photon calcium imaging of network activity in XFP-expressing neurons in the mouse." *J Neurophysiol* 97(4), 3118-25.
 19. Diaz-Rios M, Dombeck DA, Webb WW, Harris-Warrick RM (2007) "Serotonin modulates dendritic calcium influx in commissural interneurons in the mouse spinal locomotor network." *J Neurophysiol* 98, 2157-67.
 20. Sacconi L, Dombeck DA, Webb WW (2006) "Overcoming photodamage in second-harmonic generation microscopy: real-time optical recording of neuronal action potentials." *Proc Natl Acad Sci USA* 103, 3124-3129.
 21. Dombeck DA, Sacconi L, Blanchard-Desce M, Webb WW (2005) "Optical recording of fast neuronal membrane potential transients in acute mammalian brain slices by second-harmonic generation microscopy." *J Neurophysiol* 94, 3628-3636.
 22. Dombeck DA, Blanchard-Desce M, Webb WW (2004) "Optical recording of action potentials with second-harmonic generation microscopy." *J Neurosci* 24, 999-1003.
 23. Levene MJ, Dombeck DA, Kasischke KA, Molloy RP, Webb WW (2004) "In vivo multiphoton microscopy of deep brain tissue." *J Neurophysiol* 91, 1908-1912.
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24. Dombeck DA, Kasischke KA, Vishwasrao HD, Ingelsson M, Hyman BT and Webb WW (2003) "Uniform polarity microtubule assemblies imaged in native brain tissue by second-harmonic generation microscopy." *Proc Natl Acad Sci USA* 100(12), 7081-7086.
25. Chernenko AV, Giannetta RW, Dombeck DA, et al. (2002) "Thermopower study in a double bend quantum structure." *Physics of Low-Dimensional Structures* 3-4, 139-151.
26. Dombeck T, Ringo R, Koetke DD, Dombeck DA, et al. (2001) "Measurement of the neutron reflectivity for Bragg reflections off a perfect silicon crystal." *Phys Rev A* 64, 053607, 1-9.

Active Grants

NIH-NIMH 2R01-MH101297, Dombeck (PI), 03/2019-02/2024, "Behavioral relevance of active dendritic mechanisms of integration and plasticity".

NSF/NCS-FO, Maclver (PI), Dombeck (co-PI), 01/2019-12/2022, "How Ecology Induces Cognition: Paleontology, Machine Learning, and Neuroscience"

NIH-NIMH R01-MH110556, Dombeck (PI), Awatramani (PI), 03/2017-01/2022, "Molecular, anatomic, and functional characterization of midbrain dopamine neuron subtypes".

McKnight Foundation, Dombeck (PI), 07/2015-6/2019, "Functional dynamics, organization and plasticity of place cell dendritic spines".

NSF/CRCNS (1516235), Dombeck (co-PI), Kath (co-PI), 08/2015-06/2019, "Functional imaging and computational models of place field integration in pyramidal cell dendrites".
