

# Jones Griffith Parker

Assistant Professor of Psychiatry and Behavioral Sciences  
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## Education

- Ph.D. **University of Washington** (2011) Biochemistry
  - NIDA Training Fellowship (2009 to 2011)
- B.A. **Colorado College** (2005) ACS Certified Biochemistry
  - Full-tuition Barnes Scholarship for Chemistry (2001 to 2005)

## Experience

- Northwestern University, Psychiatry and Behavioral Sciences 1/2019 to Present  
*Assistant Professor*
- Stanford University, Biology, HHMI 9/2015 to 1/2019  
*Research Associate*  
**Mentor:** Mark Schnitzer, PhD
- Pfizer Global R&D, Neuroscience and Pain Research Unit, 9/2011 to 9/2015  
*Postdoctoral Fellow*  
**Mentor:** Michael Ehlers, MD, PhD
- Stanford University, Biology, HHMI 9/2011 to 9/2015  
*Visiting Scholar*  
**Mentor:** Mark Schnitzer, PhD
- University of Washington, Biochemistry, HHMI 9/2005 to 9/2011  
*Doctoral Candidate*  
**Mentor:** Richard Palmiter, PhD

## Research Expertise

Ca<sup>2+</sup> imaging and fast-scan cyclic voltammetry in awake behaving mice, two-photon microscopy, optogenetics, behavioral pharmacology, animal behavior and husbandry, histology and immunohistochemistry, Matlab programming and large-scale data analysis.

## Invited Talks

- Inscopix Satellite Symposium at Society for Neuroscience 2014
- Gordon Research Conference - Catecholamines 2015
- Winter Conference on Brain Research 2016
- Gordon Research Seminar – Basal Ganglia 2016
- Gordon Research Conference – Basal Ganglia 2016

Vanderbilt University – Psychiatry and Molecular Physiology and Biophysics	2016
Karolinska Institutet – Meletis Laboratory/Dept. of Neuroscience	2016
European Behavioral Pharmacology Society – Neural Ensemble Workshop	2016
Inscopix DECODE Summit	2016
Society for Neuroscience – Minisymposium	2016
Medical College of Wisconsin – Dept. of Pharmacology and Toxicology	2016
Alector	2017
OptoDBS	2017
Weill Cornell Medical College – Sackler Inst. for Developmental Psychobiology	2018
University of Chicago – Dept. of Neuroscience	2019

## Current Support

1K01 MH11313201 (Parker) \$589,040 3/15/2017 – 2/28/2021

“Optical dissection of the neural circuitry controlling sensorimotor gating”

## Awards

ACNP Travel Award 2018

## Publications

- **Parker JG\***, Marshall JD\*, Ahanonu B, Wu Y-W, Kim H, Zhang Y, Li JZ, Ding JB, Ehlers MD, Schnitzer MJ. Diametric neural ensemble deficits in parkinsonian and dyskinetic states. *Nature* 557(7704):177-182. 2018
- Grewe BF, J. Grundeman J, Kitch LJ, Lecoq JA, **Parker JG**, Marshall JD, Larkin M, Jercog P, Li JZ, Luthi A, Schnitzer MJ. Neural ensemble dynamics underlying a long-term associative memory. *Nature* 543(7647):670-675. 2017
- Hamel EJ, Grewe BF, **Parker JG**, Schnitzer MJ. Cellular level brain imaging in behaving mammals: an engineering approach. *Neuron* 86:140-159. 2015
- Guler AD, Rainwater A, **Parker JG**, Jones GL, Argili E, Arenkiel BR, Ehlerd MD, Bonci A, Zweifel LD, Palmiter RD. Transient activation of specific neurons in mice by selective expression of the capsaicin receptor. *Nat Commun.* 3:746. 2012

- **Parker JG**, Wanat MJ, Soden ME, Ahmad K, Zweifel LS, Bamford NS, Palmiter RD. Attenuating GABA(A) receptor signaling in dopamine neurons selectively enhances reward learning and alters risk preference in mice. *J Neurosci.* 31(47):17103-12. 2011
- **Parker JG\***, Beutler LR\*, Palmiter RD. The contribution of NMDA receptor signaling in the corticobasal ganglia reward network to appetitive Pavlovian conditioning. *J Neurosci.* 31(31):11362-9. 2011
- Wall VZ, **Parker JG**, Fadok JP, Darvas M, Zweifel LS, Palmiter RD. A behavioral genetics approach to understanding D1 receptor involvement in phasic dopamine signaling. *Mol Cell Neurosci.* 46(1):21-31. 2011
- **Parker JG**, Zweifel LS, Clark JJ, Evans SB, Phillips PEM, Palmiter RD. Absence of NMDARs in dopamine neurons attenuates dopamine release but not conditioned approach during Pavlovian conditioning. *PNAS.* 107(30): 13492-96. 2010
- Clark JJ, Sandberg SG, Wanat MJ, Gan JO, Horne EA, Hart AS, Akers CA, **Parker JG**, Willuhn I, Martinez V, Evans SB, Stella N, Phillips PE. Chronic microsensors for longitudinal, subsecond dopamine detection in behaving animals. *Nat Methods.* 7(2):126-9. 2010
- Zweifel LS, **Parker JG**, Lobb CJ, Rainwater A, Wall VZ, Fadok JP, Darvas M, Kim MJ, Mizumori SJY, Paladini CS, Phillips PEM, Palmiter RD. Disruption of NMDAR-dependent burst firing by dopamine neurons provides selective assessment of phasic dopamine-dependent behavior. *PNAS.* 106(18): 7281-88. 2009