

# Sung Eun “Samuel” Kwon

University of Michigan  
Ann Arbor, MI 48109  
(734) 764-3558  
samkwon@umich.edu

---

---

## Education

**Ph.D. in Physiology**, University of Wisconsin-Madison, 2011.

**B.Sc. (Honors) in Neuroscience**, Australian National University, 2004.

## Positions

**Assistant Professor**, 2018-present

University of Michigan-Ann Arbor, Department of Molecular, Cellular, Developmental Biology.

**Postdoctoral Fellow**, 2012-2017 (5 years).

Johns Hopkins University, Department of Neuroscience.

Advisor: Dr. Daniel H. O'Connor.

Project: long-range cortical circuits driving touch perception.

**Postdoctoral Fellow**, 2012 (9 months).

Stanford University, Howard Hughes Medical Institute.

Advisor: Dr. Kang Shen.

Project: study of functional synapse formation in *C. elegans*.

**Ph. D. Student**, 2006-2011 (5.5 years).

University of Wisconsin-Madison, Howard Hughes Medical Institute.

Advisor: Dr. Edwin R. Chapman.

Thesis title: functional analysis of synaptic vesicle proteins.

**Scientist**, GlaxoSmithKline, 2005-2006 (1 year).

Centre of Excellence for Drug Discovery, Singapore.

Supervisors: Dr. Darrel J. Pemberton and Dr. Paul F. Chapman.

Project: identifying novel drug targets for Alzheimer's disease.

**B. Sc. Research Student**, 2002-2003 (1.5 years).

John Curtin School of Medical Research, Australian National University.

Advisor: Dr. John D. Clements.

Thesis title: basic kinetic properties and stoichiometry of glycine receptors.

## Awards & Honors

Neuroscience Scholar award, University of Michigan-Ann Arbor, 2017.

Outstanding research award, Association of Korean Neuroscientists, 2017.

Albert L. Lehninger research award, Johns Hopkins University, 2017.  
SFARI Bridge to Independence award, 2016.  
Best poster prize, Department of Neuroscience retreat, Johns Hopkins University, 2015.  
Jerzy Rose award for best neuroscience thesis, University of Wisconsin-Madison, 2012.  
Epilepsy Foundation pre-doctoral fellowship, 2010.  
Joyce Fildes scholarship, Australian National University, 2003.

## Research Support

### University of Michigan Start-up Fund

Period: 2018-2024

The goal of this fund is to provide support for the initial years of lab's research program in neural circuit mechanisms of sensory processing and perceptual learning.

Role: Principal Investigator

### University of Michigan Neuroscience Scholars Award

Period: 2018-2024

The goal of this fund is to supplement the start-up fund and provide support for costs related to general supplies and animal usage over the initial years of my lab's research program.

Role: Principal Investigator

### SFARI Bridge to Independence

Period: 2018-2021

The goal of this fund is to provide support for exploring the circuit mechanisms for cognitive deficits in SynGAP mouse model.

Role: Principal Investigator

## Publications

**Kwon SE.** (2018) Interplay between cortical state and perceptual learning: a focused review, *Frontiers in Systems Neuroscience* 09 Oct: fnsys.2018.00047.

Minamisawa G, **Kwon SE**, Chevee M, Brown SP and O'Connor DH. (2018) A non-canonical feedback circuit for rapid interactions between somatosensory cortices, *Cell Reports* 23(9): 2718-2731.

\***Kwon SE**, \*Tsytarev V, Erzurumlu RS and O'Connor DH. (2018) Organization of orientation-specific whisker deflection responses in layer 2/3 of mouse somatosensory cortex, *Neuroscience* 368: 46-56.

**Kwon SE**, Yang H, Minamisawa G and O'Connor DH. (2016) Propagation of sensory and decision-related activity in a cortical feedback loop during touch perception, *Nature Neuroscience* 19(9): 1243-9.

\*Yang H, \***Kwon SE**, Severson KS and O'Connor DH. (2016) Origins of choice-related activity in mouse somatosensory cortex, *Nature Neuroscience* 19(1): 127-34.

Liu H, Bai H, Hui E, Yang L, Evans C, Wang Z, **Kwon SE**, and Chapman ER. (2014) Synaptotagmin 7 functions as a Ca<sup>2+</sup>-sensor for synaptic vesicle replenishment, *eLife* 3: e01524.

**Kwon SE** and Chapman ER. (2012) Glycosylation is dispensable for sorting of synaptotagmin 1, but is critical for targeting of synaptophysin and SV2 to recycling synaptic vesicles, *Journal of Biological Chemistry* 287(42): 35658-68.

\*Yao J, \***Kwon SE**, Gaffaney JD, Dunning FM, and Chapman ER. (2012) Uncoupling the roles of synaptotagmin I as a dual Ca<sup>2+</sup> sensor during endo- and exocytosis of synaptic vesicles, *Nature Neuroscience* 15(2): 243-9. Highlighted by F1000.

\*Yao J, \*Gaffaney JD, **Kwon SE**, and Chapman ER. (2011) Doc2 is a Ca<sup>2+</sup> sensor required for asynchronous neurotransmitter release, *Cell* 147(3): 666-77. Highlighted by F1000.

**Kwon SE** and Chapman ER. (2011) Synaptophysin regulates the kinetics of synaptic vesicle endocytosis in central neurons, *Neuron* 70 (5): 847-54. Highlighted by F1000.

\*, equal authorship.

## Presentations

### *Invited Seminars*

MCDB department retreat, University of Michigan-Ann Arbor, Oct. 2018.

Neuroscience graduate program retreat, University of Michigan-Ann Arbor, Oct. 2018.

Kresge Hearing Institute, University of Michigan-Ann Arbor, Mar. 2018.

Neural Networks Club, University of Michigan-Ann Arbor, Jan. 2018.

Association of Korean Neuroscientists Meeting, Society for Neuroscience, Nov. 2017.

Department of Pharmacology and Physiology, Georgetown University, Apr. 2017.

Department of Neuroscience, University of Pittsburgh, Mar. 2017.

Department of Neurobiology, St. Jude Children's Research Hospital, Feb. 2017.

Department of Physiology and Biophysics, University of Colorado, Jan. 2017.

Department of MCDB, University of Michigan-Ann Arbor, Jan. 2017.

Neuronal Circuits, Cold Spring Harbor Laboratory, 2016.

### *Posters*

**Kwon SE**, Yang H, Minamisawa G and O'Connor DH. Propagation of sensory and decision-related activity in a cortical feedback loop during touch perception, *Society for Neuroscience*, 2015.

Yang H, **Kwon SE**, Severson KS and O'Connor DH. Origins of choice-related activity in mouse somatosensory cortex, *Society for Neuroscience*, 2014.