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## POSITIONS

Mar. 2023 – Present	Seoul National University Seoul, South Korea	Assistant Professor, School of Biological Sciences
Oct. 2019 – Feb. 2023	University of California, Berkeley CA, USA	Postdoctoral Scholar, Laboratory of Hillel Adesnik.

## EDUCATION & TRAINING

Sep. 2013 – Sep. 2019	Brown University RI, USA	Ph.D. Neuroscience Thesis Advisors: Christopher I. Moore, Stephanie R. Jones
Mar. 2009 – Feb. 2013	Yonsei University Seoul, South Korea	B.S. Bioengineering & Biotechnology, Graduated with High Honors.
Jan. 2011 – Dec. 2011	University of California, Berkeley CA, USA	Non-Degree Education Abroad Program. Research Advisors: Thomas L. Griffiths, Friedrich T. Sommer

## PUBLICATIONS

- Shin H**, Ogando MB, Abdeladim L, Durand S, Belski H, Cabasco H, Loeffler H, Bawany A, Hardcastle B, Wilkes J, Nguyen K, Suarez L, Johnson T, Han W, Ouellette B, Grasso C, Swapp J, Ha V, Young A, Caldejon S, Williford A, Groblewski P, Olsen S, Kiselycznyk C, Lecoq J, Adesnik H. Recurrent pattern completion drives the neocortical representation of sensory inference. *bioRxiv*. 2023  
<https://doi.org/10.1101/2023.06.05.543698>
- Shin H**, Adesnik H. Functional roles of cortical inhibitory interneurons (chapter in book titled “The Cerebral Cortex and Thalamus” by Usrey WM and Sherman SM) *in press*
- Abdeladim L\*, **Shin H\***, Jagadisan UK\*, Ogando MB, Adesnik H. Probing inter-areal computations with a cellular resolution two-photon holographic mesoscope. *bioRxiv*. 2023  
<https://doi.org/10.1101/2023.03.02.530875>  
\*equal contributions
- Shin H**, Adesnik H. NDNF interneurons, Spartans of the cortical column: Small in number, strong in impact. *Neuron*. 2021 <https://doi.org/10.1016/j.neuron.2021.06.022>
- Law RG, Pugliese S, **Shin H**, Sliva DD, Lee S, Neymotin S, Moore C, Jones SR. Thalamocortical mechanisms regulating the relationship between transient beta events and human tactile perception. *Cerebral Cortex*. 2021 <https://doi.org/10.1093/cercor/bhab221>
- Shin H**, Moore CI. Persistent gamma spiking in SI nonsensory fast spiking cells predicts perceptual success. *Neuron*. 2019 <https://doi.org/10.1016/j.neuron.2019.06.014>  
(co-corresponding author)  
*Accompanying dataset*: <https://data.mendeley.com/datasets/r5tbz5j34p/1>  
*Accompanying software*: <https://github.com/hs13/GammaRegularNonSensoryFastSpikingNeurons>  
\*Press coverage in over 20 science news outlets, including *Scientific American*, *WIRED*, and *Discover*  
\*Top 10 Healthinnovations of 2019 <https://health-innovations.org/2020/01/05/the-top-10-healthinnovations-of-2019/>
- Shin H**, Bitzidou M, Palaguachi F, Brumberg JC. Barrels XXX meeting report: Barrels in Baltimore. *Somatosensory & Motor Research* 2018 <https://doi.org/10.1080/08990220.2018.1451834>
- Shin H**, Law R, Tsutsui S, Moore CI, Jones SR. The rate of transient beta frequency events predicts behavior across tasks and species. *eLife*. 2017;6. <https://doi.org/10.7554/eLife.29086.001>  
(co-corresponding author)  
*Accompanying dataset*: <https://datadryad.org/stash/dataset/doi:10.5061/dryad.pn931>  
*Accompanying software*: <https://github.com/hs13/BetaEvents>

**AWARDS & HONORS**

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2022 NIH BRAIN Initiative Meeting Trainee Highlight Award  
2022 Sculpted Light in the Brain, Travel Award  
2022 Allen Brain Observatory – OpenScope Project (selected through a new competition)  
2021 Life Sciences Research Foundation Finalist  
2021 eLife Early-Career Reviewer  
2020 Brown University, Joukowsky Dissertation Award  
2020 Allen Brain Observatory – OpenScope Project (selected but cancelled due to COVID-19 pandemic)  
2020 Life Sciences Research Foundation Finalist  
2020 Anne's list <https://anneslist.net/category/sensory-systems/somatosensory/page/2/>  
2019 Association of Korean Neuroscientists, Outstanding Research Award, Predoctoral Abroad Category  
2019 Biological Research Information Center (BRIC) in Korea, Hanbitsa "Notable Korean Scientists"  
[https://www.ibric.org/hanbitsa/treatise\\_index\\_for\\_author.php?idauthorid=30755](https://www.ibric.org/hanbitsa/treatise_index_for_author.php?idauthorid=30755)  
2019 Society for Neuroscience, International Brain Research Organization World Congress Travel Award  
2017 Society for Neuroscience, Trainee Professional Development Award  
2017 Society of Sigma Xi, Brown University Chapter, Associate Membership  
2016 Mind Brain Research Day, Brown University, 1<sup>st</sup> Place Poster Prize (Graduate/Medical Student)  
2013 Yonsei University, College of Life Science and Biotechnology, Graduation with High Honors  
2011 University of California Berkeley, College of Letters and Science Dean's Honors List

**GRANTS & FELLOWSHIPS**

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2022 Weill Neurohub Fellows  
2017-2018 Brown Institute for Brain Sciences, Dr. Daniel C. Cooper Graduate Award and the Edelman Fund  
2016 Brown Institute for Brain Sciences, Graduate Research Award  
2013-2015 Fulbright Graduate Study Award  
2009-2013 Korea Student Aid Foundation, National Science and Engineering Undergraduate Scholarship  
2009-2013 Korea Foundation for Advanced Studies, Undergraduate Student Scholarship Program

**ORAL PRESENTATIONS**

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1. Korean Society for Brain and Neural Sciences. September 6<sup>th</sup>, 2023
2. Seoul National University School of Biological Sciences Friday Seminar Series. June 9<sup>th</sup>, 2023
3. Seoul National University Neuroscience Seminar Series. May 25<sup>th</sup>, 2023
4. Seoul National University College of Medicine Physiology Seminar Series. May 8<sup>th</sup>, 2023
5. U19 Site Visit at Columbia University (1U19NS107613-01). December 9<sup>th</sup>, 2022
6. University of California, Berkeley Neuroscience Annual Conference. October 15<sup>th</sup>, 2022
7. Allen Brain OpenScope Seminar. October 19<sup>th</sup>, 2022
8. Brown University Neuroscience Seminar. June 29<sup>th</sup>, 2022
9. 2022 BRAIN Initiative Meeting Trainee Highlight Award Finalist Presentation. June 22<sup>nd</sup>, 2022
10. Seoul National University Neuroscience Seminar. March 31<sup>st</sup>, 2022
11. Cortex Club, University of California Berkeley. March 2<sup>nd</sup>, 2022
12. Korea Institute of Science and Technology Seminar. December 16<sup>th</sup>, 2021
13. Seoul National University School of Biological Sciences Seminar. May 20<sup>th</sup>, 2021

14. Haegens Laboratory, Columbia University, Guest Lab Meeting. May 18<sup>th</sup>, 2021
15. Gomez-Ramirez Laboratory, University of Rochester, Guest Lab Meeting. May 11<sup>th</sup>, 2021
16. Daegu Technopolis Grand Innovation Festival, Daegu Gyeongbuk Institute of Science and Technology, Daegu, South Korea. November 22<sup>nd</sup>, 2019
17. Institute for Basic Science Center for Neuroscience Imaging research, Sungkyunkwan University, Suwon, South Korea. September 18<sup>th</sup>, 2019
18. Cognitive Rhythms Collaborative Symposium, MIT, Cambridge, MA. April 24<sup>th</sup>, 2019
19. Network Interactions: Oscillations and Synchrony: EEG Studies, Nanosymposium at the Society for Neuroscience. San Diego, CA. November 3<sup>rd</sup>, 2018
20. Barrels XXXI. Riverside, CA. November 1<sup>st</sup>, 2018
21. Neural Systems and Behavior Course Guest Lecture. Marine Biological Laboratory, MA. July 20<sup>th</sup>, 2018
22. Neural Dynamics Course Guest Lecture. Brown University, RI. March 28<sup>th</sup>, 2017
23. Neuroscience Graduate Student Program Retreat. Marine Biological Laboratory, MA. September 1<sup>st</sup>, 2016
24. NIH-Brown Neuroscience Graduate Partnership Scientific Retreat. November 4<sup>th</sup>, 2015

**POSTER PRESENTATIONS**

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1. Shin H, Ogando MB, Adesnik H. Utilizing Illusory Contours to Decipher Perceptual Inference Sculpted Light in the Brain 2022. Boston, MA. June 27<sup>th</sup>, 2022  
The 8th Annual BRAIN Initiative Investigators Virtual Meeting. June 2022  
*\*Awarded Trainee Highlight Award*
2. Shin H, Adesnik H. Neocortical Basis for Perceptual Inference of Illusory Contours  
Cosyne 2022. Lisbon, Portugal. March 19<sup>th</sup>, 2022
3. Shin H, Adesnik H. Elucidating Neocortical Mechanisms of Perceptual Inference Using Illusory Contours  
The 7th Annual BRAIN Initiative Investigators Virtual Meeting. June 2021
4. Shin H, Moore CI. SI Neurons with the Highest Spontaneous Firing Rate are the Most Informative of Success in a Detection Task  
Society for Neuroscience. Chicago, IL. October 2019
5. Shin H, Moore CI. Persistent gamma spiking in non-sensory fast-spiking cells predicts perceptual success.  
International Brain Research Organization World Congress. Daegu, South Korea. September 2019  
Cosyne 2019. Lisbon, Portugal. February 28<sup>th</sup>, 2019  
Society for Neuroscience. San Diego, CA. November 6<sup>th</sup>, 2018  
83<sup>rd</sup> Symposium: Brains & Behavior: Order & Disorder in the Nervous System. Cold Spring Harbor Laboratory. June 1<sup>st</sup>, 2018
6. Law R, Shin H, Lee S, Moore CI, Jones SR. Biophysical modeling of human MEG reveals two mechanisms effected by bandlimited transients in perceiving weak stimuli.  
Computational Neuroscience conference, Seattle, WA. July 15<sup>th</sup>, 2018
7. Shin H, Botros J, Jones SR, Moore CI. Fast-spiking interneurons of barrel cortex show increased activity on detected trials in a vibrissae deflection detection task.  
Society for Neuroscience, Washington DC. November 14<sup>th</sup>, 2017  
Trainee Professional Development Awards Poster Session, Washington DC. November 11<sup>th</sup>, 2017  
Barrels XXX, Baltimore, MD. November 9<sup>th</sup>, 2017
8. Bath KG, Johnsen A, Bravo M, Shin H, Manzano Nieves G. ELS is associated with precocious amygdala development and an unexpected dip in threat-associated freezing.  
Society for Neuroscience, Washington DC. November 14<sup>th</sup>, 2017
9. Law R, Shin H, Tsutsui S, Lee S, Jones SR. Mechanisms of sensory inhibition induced by neocortical beta rhythms.  
Mind Brain Research Day, Brown University. March 28<sup>th</sup>, 2017  
Society for Neuroscience, San Diego. November 14<sup>th</sup>, 2016 (Added after abstract submission)

10. Shin H, Jones SR, Moore CI. Neural dynamics of single units and local field potentials in barrel cortex underlying detection at perceptual threshold.  
Society for Neuroscience, San Diego. November 14<sup>th</sup>, 2016  
Barrels XXIX, Los Angeles. November 10<sup>th</sup>, 2016
11. Shin H, Tsutsui S, Law R, Moore CI, Jones SR. Mechanisms of sensory inhibition induced by neocortical beta rhythms.  
Society for Neuroscience, San Diego. November 14<sup>th</sup>, 2016
12. Shin H, Jones SR, Moore CI. Inhibitory synchrony: potential mechanism for enhancement of feedforward sensory processing.  
Mind Brain Research Day, Brown University. March 30<sup>th</sup>, 2016  
*\*Awarded 1<sup>st</sup> place prize for graduate/medical student research poster*  
Cognitive Rhythms Collaboration Retreat, Boston University. March 16<sup>th</sup>, 2016
13. Shin H, Jones SR, Moore CI. Gamma oscillations and gain modulation.  
Young Scholar's Conference, Brown University. September 26<sup>th</sup>, 2015
14. Shin H, Jones SR\*, Moore CI\*. Modeling the causal role of gamma oscillations in gain modulation.  
Mind Brain Research Day, Brown University. March 25<sup>th</sup>, 2015

**OTHER EDUCATIONAL EXPERIENCE**

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1. **Neuromatch Academy: Deep Learning** interactive student (August 2021)
2. **Summer Workshop on the Dynamic Brain**, co-hosted by the Allen Institute for Brain Science and the Computational Neuroscience Program at the University of Washington, Student (August 2018)
3. **Neural Systems & Behavior Course** at Marine Biological Laboratory, Research Facilitator (July 2018)
4. Neuropracticum Course at Marine Biological Laboratory, Teaching Assistant (January 2018)
5. **Computer Modeling of the Brain Course through Summer at Brown**, Instructor (July 2017, June 2018)
6. **Imaging Structure & Function in the Nervous System Course at Cold Spring Harbor Laboratory**, Student (July-August 2016)
7. Mentorship of undergraduates and master students in Moore lab at Brown University (Alec Tulett 2017-2018; Joseph Botros 2016-2017; Helaina Regen-Tuero 2015-2016)
8. Brown Brain Bee judge, Brown University (February 20<sup>th</sup>, 2016)
9. Sheridan Center Teaching Certificate I, Brown University (Spring 2016)
10. Experimental Neurobiology, Brown University, Teaching Assistant (Spring 2015)
11. Neuropracticum Course at Marine Biological Laboratory, Student (January 2014)
12. Korean Graduate Student Association (KGSA), Brown University, Vice President (2014-2015)
13. Undergraduate Honors Thesis titled "Episodic Memory Retrieval in Forward and Backward Directions: A Computational Modeling Study" at University of California, Berkeley (2011)
14. Yonsei Dream Major Conductors (YDMC), founding member and Bioengineering & Biotechnology representative (2009-2010)
15. Mentor for middle school students in educationally alienated regions (Summer 2010)
16. Worked as tutor for middle school and high school students in mathematics, English, and science. (2009-2010)