

# Curriculum Vitae

Won Beom Jung  
Korea Brain Research Institute (KBRI)



## Education

Date	Degree / Diploma	University / Institute	Major
Mar. 2016 ~ Feb. 2020	Ph.D	Sungkyunkwan University (Advisor: Seong-Gi Kim)	Biomedical Engineering
Mar. 2011 ~ Feb .2013	M.S	Inje University (Advisor: Chi-Woong Mun)	Biomedical Engineering
Mar. 2005 ~ Feb. 2011	B.S	Inje University	Biomedical Engineering

## Research Experience

- Dec. 2023 ~ Present: Senior researcher (Principal Investigator)  
**Institute:** Korea Brain Research Institute (KBRI)
- Sep. 2022 ~ Nov. 2023: Senior scientist  
**Institute:** Medical Imaging AI Research Center, Canon Medical Systems Korea
- Apr. 2022 ~ Aug. 2022: Research professor  
**Institute:** Center for Neuroscience Imaging Research (CNIR), Sungkyunkwan University
- Mar. 2020 ~ Mar. 2022: Post-doctoral Research fellow  
High field mouse fMRI  
**Institute:** Center for Neuroscience Imaging Research (CNIR, Advisor: Prof. Seong-Gi Kim)
- Jun. 2013 ~ Feb. 2016: Research assistant  
Functional MRI for investigating mechanisms for recovery and plasticity in brain injured animal model  
**Institute:** Dept of Radiology, Samsung Medical Center (Advisor: Prof. Jung Hee Lee)
- Mar. 2011 ~ May. 2013: Research assistant  
Developing brain imaging technique and data processing to evaluate neurological functional and structural connectivity in Dementia  
**Institute:** Dept of Psychiatry, Pusan National University Hospital (Advisor: Prof. Young Min Lee)  
**Institute:** Dept of Psychiatry, Haeundae Paik Hospital (Advisor: Prof. Young Hoon Kim)

## **Publications (selected)**

1. Soowon Lee\*, **Won-Beom Jung\***, Heera Moon\*, Geun Ho Im, Young Woo Noh, Wangyong Shin, Yong Gyu Kim, Jee Hyun Yi, Seok-Jun Hong, Yongwhan Jung, Sunjoo Ahn, Seong-Gi Kim, Eunjoon Kim. *Anterior cingulate cortex-related functional hyperconnectivity underlies sensory hypersensitivity in Grin2b-mutant mice*. **Molecular Psychiatry**. 2024. \***Equally contributed**
2. **Won Beom Jung**, Haiyan Jiang, Soohyun Lee, Seong-Gi Kim. *Dissection of brain-wide resting-state and functional somatosensory circuits by fMRI with optogenetic silencing*. **PNAS**. 2022;119(4):e2113313119.
3. So Yoon Anh\*, Hyesoo Jie\*, **Won-Beom Jung\***, Ji-Hyun Jeong, Sukjin Ko, Geun Ho Im, Won Soon Park, Jung Hee Lee, Yun Sil Chang, Seungsoo Chung. *Stem cell restores thalamocortical plasticity to rescue cognitive deficit in neonatal intraventricular hemorrhage*. **Exp Neurol**. 2021;342:113736. \***Equally contributed**
4. **Won Beom Jung**, Geun Ho Im, Haiyan Jiang, Seong-Gi Kim. *Early fMRI responses to somatosensory and optogenetic stimulation reflect neural information flow*. **PNAS**. 2021;118(11):e2023265118.
5. Hanseul Kweon\*, **Won Beom Jung\***, Geun Ho Im, Jia Ryoo, Joon-Hyuk Lee, Hogeyeong Do, Yeonsoo Choi, You-Hyang Song, Hwajin Jung, Haram Park, Lily R Qiu, Jacob Ellegood, Hyun-Ji Shim, Esther Yang, Hyun Kim, Jason P Lerch, Seung-Hee Lee, Won-Suk Chung, Daesoo Kim, Seong-Gi Kim, Eunjoon Kim. *Excitatory neuronal CHD8 in the regulation of neocortical development and sensory-motor behaviors*. **Cell Reports**. 2021;34(8):108780. \***Equally contributed**
6. **Won Beom Jung**, Hyun-Ji Shim, Seong-Gi Kim. *Mouse BOLD fMRI at ultrahigh field detects somatosensory networks including thalamic nuclei*. **NeuroImage**. 2019;195:203-214.
7. Hyun-Ji Shim\*, **Won Beom Jung\***, Felix Schlegel, Joonsung Lee, Sangwoo Kim, Jungryun Lee, Seong-Gi Kim. *Mouse fMRI under ketamine and xylazine anesthesia: Robust contralateral somatosensory cortex activation in response to forepaw stimulation*. **NeuroImage**. 2018;177:30-44. \***Equally contributed**
8. **Won Beom Jung**, Yong Hee Han, Julius Juhyun Chung, Sun Young Chae, Lee SH, Geun Ho Im, Sung Hoon Lee, Geun Ho Im, JiHoon Cha, Jung Hee Lee. *Spatiotemporal microstructural white matter changes in diffusion tensor imaging after transient focal ischemic stroke in rats*. **NMR Biomedicine**. 2017;30(6):e3704. **Cover image**
9. **Won Beom Jung**, Geun Ho Im, Julius Juhyun Chung, So-Yoon Ahn, Tae Yeon Jeon, Yun Sil Chang, Won Soon Park, Ji Hye Kim, Ki-Soo Kim, Jung Hee Lee. *Neuroplasticity for spontaneous functional recovery after neonatal hypoxic ischemic brain injury in rats observed by functional MRI and diffusion tensor imaging*. **NeuroImage**. 2016;126:140-150.
10. **Won Beom Jung**, Young Min Lee, Young Hoon Kim, Chi-Woong Mun. *Automated Classification to Predict the Progression of Alzheimer's Disease Using Whole-Brain Volumetry and DTI*. **Psychiatry Investigation**. 2015;2(1):92-102.
11. **Won-Beom Jung**, Chi-Woong Mun, Young-Hoon Kim, Je Min Park, Byung Dae Lee, Young Min Lee, Eunsoo Moon, Hee Jeong Jeong, Young In Chung. *Cortical atrophy, reduced integrity of white matter and cognitive impairment in subcortical vascular dementia of Binswanger type*. **Psychiatry and clinical neurosciences**. 2014;68(12):821-32.

## **Publications (others)**

1. Chuluunbaatar Otgonbaatar, Jae-Kyun Ryu, **Won Beom Jung**, Seon Woong Jang, Sungjun Hwang, Taehyung Kim, Hackjoon Shim, Jung Wook Seo. *Utilization of double contrast-enhancement boost for lower-extremity CT angiography*. **J Med Imaging**. 2024;11(6):067001.
2. Chuluunbaatar Otgonbaatar, Hyunjung Kim, Pil-Hyun Jeon, Sang-Hyun Jeon, Sung-Jin Cha, Jae-Kyun Ryu, **Won Beom Jung**, Hackjoon Shim, Sung Min Ko, Jin Woo Kim. *A preliminary study of super-resolution deep learning reconstruction with cardiac option for evaluation of endovascular-treated intracranial aneurysms*. **Br J Radiol**. 2024.
3. Hyunju Hwang, Changhyeon Cho, Myounghun Kim, **Wonbeom Jung**, Hackjoon Shim, Jaehwan Kim, Kidong Eom. *Injection rate, scanning position, and values of parameters on pulmonary computed tomography perfusion in normal Beagles*. **Am J Vet Res**. 2024;85(5):ajvr.23.06.0133.
4. Yu Jung Jang, Min Gyu Choi, Byung Jae Yoo, Kyeong Jae Lee, **Won Beom Jung**, Seong-Gi Kim, Sun Ah Park. *Interaction Between a High-Fat Diet and Tau Pathology in Mice: Implications for Alzheimer's Disease*. **J Alzheimer's Dis**. 2024;97(1):485-506.
5. Hyun-Ji Shim, Geun Ho Im, **Won Beom Jung**, Hyun Seok Moon, Thi Ngoc Anh Dinh, Jeong-Yun Lee, Seong-Gi Kim. *Protocol for mouse optogenetic fMRI at ultrahigh magnetic fields*. **Star Protocol**. 2022;3(4):101846.
6. Hyun Seok Moon, Haiyan Jiang, Thanh Tan Vo, **Won Beom Jung**, Alberto L Vazquez, Seong-Gi Kim. *Contribution of excitatory and inhibitory neuronal activity to BOLD fMRI*. **Cerebral Cortex**. 2021;31(9):4053-4067.
7. Jae-Kyun Ryu, **Won Beom Jung**, Jaeyong Yu, Jeong Pyo Son, Seung-Kyun Lee, Seong-Gi Kim, Jang-Yeon Park. *An equal-TE ultrafast 3D gradient-echo imaging method with high tolerance to magnetic susceptibility artifacts: Application to BOLD functional MRI*. **Magnetic Resonance in Medicine**. 2021;85(4):1986-2000.
8. Thi Ngoc Anh Dinh, **Won Beom Jung**, Hyun-Ji Shim, Seong-Gi Kim. *Characteristics of fMRI responses to visual stimulation in anesthetized vs. awake mice*. **NeuroImage**. 2021;226:117542.
9. Soobum Kim, Han-Joong Kim, Phil Heo, Donghyuk Kim, **Won Beom Jung**, Kyoung-Nam Kim. *Offset-tuned Bilateral-side Inductively Coupled RF Coils for Preclinical MRI at 15.2 T*. **Journal of Magnetics**. 2020;25(2):277-284.
10. Sun Young Chae, Jun Ho Jang, Geun Ho Im, Ji-Hyun Jeong, **Won-Beom Jung**, Sukjin Ko, Hyesoo Jie, Ji Hye Kim, Yun Sil Chang, Seungsoo Chung, Ki-Soo Kim, Jung Hee Lee. *Physical exercise enhances adult cortical plasticity in a neonatal rat model of hypoxic-ischemic injury: Evidence from BOLD-fMRI and electrophysiological recordings*. **NeuroImage**. 2019;188:335-346.
11. Jihoon Cha, Sung Tae Kim, **Won Beom Jung**, Yong Hee Han, Geun Ho Im, Jung Hee Lee. *Altered white matter integrity and functional connectivity of hyperacute-stage cerebral ischemia in a rat model*. **Magn Reson Imaging**. 2016;34(8):1189-98.
12. Hun Nyun Kim, **Won Beom Jung**, Min Jung Kang, Geun Ho Im, Jung Hee Lee, Bo-Young Choe. *Cerebral glucose metabolism changes in rat brain upon forepaw electrical stimulation at different frequencies*. **NeuroReport**, 2015;26(4):197-205.

13. **Won Beom Jung**, Min Jae Kang, Doo Beom Son, Young Joo Kim, Young Min Lee, Young Hoon Kim, Choong Ki Eun, Chi Woong Mun. *Reproducibility Analysis of Brain Volumetry Measured from Inter MR Scanner of Multi-Institute*, **J Korean Soc Magn Reson Med**. 2012;16(3):243-252.
14. **Won Beom Jung**, Doo Beom Son, Young Ju Kim, Young Hoon Kim, Choong Ki Eun, Chi Woong Mun. *A Comparison Study on Human Brain Volume of White Matter, Gray Matter and Hippocampus Depending on Magnetic Resonance Imaging Conditions and Applied Brain Template*. **J Korean Soc Magn Reson Med**. 2011;15(3):242-250.
15. Kang-Soo Kim, Yong-Hee Han, **Won-Beom Jung**, Young-Ho Lee, Jung-Hoon Kang, Heung-Ho Choi, Chi-Woong Mun. *Technical Development of Interactive Game Interface Using Multi-Channel EMG Signal*. **Journal of Korea game society**. 2010;10(5):65-73.

### **Awards**

- May. 2024 Magna Cum Laude Merit Award, ISMRM 2024 annual meeting
- June. 2023 Summa Cum Laude Merit Award, ISMRM 2023 annual meeting
- May. 2022 Summa Cum Laude Merit Award, ISMRM 2022 annual meeting
- Dec. 2021 Young Investigator Award, 2021 IBS CNIR workshop
- May. 2021 Magna Cum Laude Merit Award, ISMRM 2021 annual meeting
- Aug. 2020 Summa Cum Laude Merit Award, ISMRM 2020 annual meeting
- Dec. 2019 Best scientific paper award, 2019 IBS CNIR workshop
- Dec. 2018 Best presentation award, 2018 IBS CNIR workshop
- Aug. 2017 Best presentation award, The 20th annual meeting of KSBNS
- Mar. 2013 Scientific paper award, KSMRM 2013 annual meeting
- May. 2012 Scientific paper award, KOSOMBE 2012 conference
- Mar. 2012 Scientific paper award, KSMRM 2012 annual meeting
- Dec. 2010 The 6th Busan future scientist award

### **Invited peer-reviewer**

- Mar. 2025 Imaging Neuroscience (for functional MRI in awake mice)
- Dec. 2021 PLOS ONE (for functional MRI in animal brain)