Woo-Young Ahn

CONTACT INFORMATION

Department of Psychology
Seoul National University
Building 16, Room M505
Seoul, Korea
Email: wahn55@snu.ac.kr / wooyoung.ahn@gmail.com
Office: +82-2-880-2538
Website: **ccs-lab.github.io / happylaboratory.org /ahnlab.org**

CURRENT RESEARCH INTERESTS

Broadly I examine the cognitive and neural mechanisms underlying decision-making and self-control. By applying a decision-making framework, I investigate the neural mechanisms underlying psychiatric disorders, especially addictive disorders. I am particularly interested in developing biomarkers of transdiagnostic traits to aid the development of individualized treatment programs. To achieve these goals, I use computational modeling, machine learning techniques, and neuroimaging methods.

ACADEMIC EMPLOYMENT

Professor **September 2024 - Present**

Associate Professor (with tenure from Sep. 2022) **September 2019 - August 2024**

Assistant Professor **September 2017 - August 2019**
Seoul National University, Department of Psychology

Assistant Professor **August 2015 -August 2017**
The Ohio State University, Department of Psychology
Affiliated Faculty, Translational Data Analytics

Postdoctoral Fellow **October 2014 - July 2015**
Virginia Commonwealth University, Department of Psychiatry
- Institute for Drug and Alcohol Studies
- Advisors: Professors Jasmin Vassileva & F. Gerard Moeller

Postdoctoral Associate **August 2012 - September 2014**
Virginia Tech Carilion Research Institute
- Human Neuroimaging Laboratory & Computational Psychiatry Unit
- Advisors: Professors P. Read Montague & Peter Dayan (University College London)

EDUCATION

Ph.D. in Clinical Science **Fall 2006 - August 2012**
Indiana University-Bloomington, Department of Psychological and Brain Sciences
- Advisors: Professors Jerome R. Busemeyer & Brian F. O'Donnell
- Areas of Study: Clinical Science (major) and Cognitive Psychology (minor)

Predoctoral Clinical Internship **July 2011 - June 2012**
University of Illinois at Chicago (UIC), Department of Psychiatry
- Adult Track (APA-Accredited Internship)

M.A. in Clinical Psychology **Feb 2006**
Seoul National University, Department of Psychology
- Advisor: Professor Seok-Man Kwon
- Area of Study: Clinical Psychology

S.M. in Applied Physics **June 2003**
Harvard University, School of Engineering and Applied Sciences
- Advisors: Professors Michael J. Aziz and Frans A. Spaepen

B.S. in Materials Science and Engineering **Feb 2002**
Seoul National University, Department of Materials Science and Engineering

Journal Articles

Haines, N., Kvam, P. D., Irving, L., Smith, C. T., Beauchaine, T. P., Pitt, M. A., **Ahn, W.-Y.**, & Turner, B. M. (in press) A Tutorial on Using Generative Models to Advance Psychological Science: Lessons from the Reliability Paradox. ***Psychological Methods***.

Lee, S. H., Song, M. S., Oh, M.-H., & **Ahn, W.-Y.** (2024) Bridging the gap between self-report and behavioral laboratory measures: A real-time driving task with inverse reinforcement learning. ***Psychological Science***, 35(4), 345-357.

Kwon, M., Choi, H., Park, H., **Ahn, W.-Y.**[#], & Choi, J.-S.[#] (2024) Neural correlates of model-based behavior in internet gaming disorder and alcohol use disorder. ***Journal of Behavioral Addictions***, 13(1), 236-249. [#]**Co-corresponding authors**

Lee, J.-Y., Song, M., Yoo, S. Y., Jang, J. H., Lee, D., Jung, Y.-C., **Ahn, W.-Y.**,[#], & Choi, J.-S.[#] (2024) Multimodal-based machine learning approach to classify features of internet gaming disorder and alcohol use disorder: A sensor-level and source-level resting-state electroencephalography activity and neuropsychological study. ***Comprehensive Psychiatry***, 130, 152460.
[#]**Co-corresponding authors**

Lee, J.-H., Kang, S., Maier, S., Lee, S. A., Goldfarb, E., & **Ahn, W.-Y.** (2024) Acute stress enhances memory and preference for smoking-related associations in smokers. ***Nicotine & Tobacco Research***. 26(3), 333-341.

Kwon, M., Lee, S., & **Ahn, W.-Y.** (2023) Adaptive design optimization as a promising tool for reliable and efficient computational fingerprinting. ***Biological Psychiatry: Cognitive Neuroscience and Neuroimaging***. 8(8), 798-804.

Park, H., Doh, H., Lee, E., Park, H, & **Ahn, W.-Y.** (2023) The neurocognitive role of working memory load when Pavlovian motivational control affects instrumental learning. ***PLOS Computational Biology***, 19(12), e1011692.

Bero, J., Li, Y., Kumar, A., Humphries, C., Nag, S., Lee, H., **Ahn, W.-Y.**, Hahn, S., Constable, R. T., Kim, H., &, Lee, D. (2023) Coordinated anatomical and functional variability in the human brain during adolescence. ***Human Brain Mapping***, 44(4), 1767-1778.

Kim, H., Hur, J. K., Kwon, M., Kim, S., Zoh, Y., & **Ahn, W.-Y.** (2023) Causal role of the dorsolateral prefrontal cortex in modulating the balance between Pavlovian and instrumental systems in the punishment domain. ***PLOS ONE***.

Kwon, M., Kim, H., Yang, J., Hur, J., Lee, T.-H., Bjork, J., & **Ahn, W.-Y.** (2024) Caffeinated soda intake in children is associated with neurobehavioral risk factors for substance misuse. ***Substance Use & Misuse***, 59(1), 79-89.

Lee, S.-H., Chey, J., **Ahn, W.-Y.**, Woo, C.-W., Yum, Y., Kim, H., Oh, N., Park, H., Gim, S., & Choi, I. (2022). Psychological well-being and salivary markers of inflammation: The moderating effect of age. ***Applied Psychology: Health and Well-Being***. 15(2), 466-478.

Kim, J., Lee, D., Lee, S., Shim, S., Choi, K.-H., Chey, J., Shin, S.-H., & **Ahn, W.-Y.** (in press) Psychological Treatments for Excessive Gaming: A Systematic Review and Meta-analysis. ***Scientific Reports***.

Kim, K., Joo, Y., Ahn, G., Wang, H.-H., Moon, S.-Y., Kim, H., **Ahn, W.-Y.**, & Cha, J. (in press) The Sexual Brain, Genes, and Cognition: A Machine-Predicted Brain Sex Score Explains Individual Differences in Cognitive Intelligence and Genetic Influence in Young Children. ***Human Brain Mapping***.

Im, J. J., Na, S., Kang, S., Jeong, H., Lee, E.-S., Lee, T.-K., **Ahn, W.-Y.**, Chung, Y.-A., & Song, I.-U. (in press) A randomized, double-blind, sham-controlled trial of transcranial direct current stimulation for the treatment of persistent postural-perceptual dizziness (PPPD). ***Frontiers in Neurology***.

Kim, H., Son, G., Roh, E.-B., **Ahn, W.-Y.**, Kim, J., Shin, S.-H., Chey, J., & Choi, K.-H. (2022) Prevalence of gaming disorder: A meta-analysis. ***Addictive Behaviors***, 126, 107183.

Yoon, S., Yang, Y., **Ahn, W.-Y.**, Kim, J., Shin, S.-H., Chey, J., & Choi, K.-H. (2022) Reliability, and Convergent and Discriminant Validity of Gaming Disorder Scales: A Meta-Analysis. ***Frontiers in Psychology***, 07.

Joo, Y., Moon, S.-Y., Wang, H.-H., Kim, H., Kim, E.-J., Jung, S.-M., **Ahn, W.-Y.**, Choi, I., Kim, J.-W., & Cha. J. (2022) Association of genome-wide polygenic scores for multiple psychiatric and common traits in preadolescent youths at risk of suicide. ***JAMA Network Open***, 5(2), e2148585.

Kim, M.*, Yang, J.*, **Ahn, W.-Y.**#, Choi, H.# (2021) Machine-learning analysis identifies digital behavioral phenotypes for engagement and health outcome efficacy of mHealth interventions for obesity: post-hoc analyses of a randomized trial. ***Journal of Medical Internet Research***, 23(6), e27218.
***Co-first authors** #**Co-corresponding authors**

Park, H. Yang, J., Vassileva, J., & **Ahn, W.-Y.** (2021) Development of a novel computational model for the Balloon Analogue Risk Task: The exponential-weight mean-variance model. ***Journal of Mathematical Psychology***, 102, 102532.

Yang, J., Pitt, M., **Ahn, W.-Y.**, & Myung, J. (2021) ADOpy: A Python Package for Adaptive Design Optimization. ***Behavior Research Methods***, 53, 874-897.

Hur, J., Yang, J., Doh, H., & **Ahn, W.-Y.** (2020) Mapping fNIRS to fMRI with Neural Data Augmentation and Machine Learning Models. ***NeurIPS 2020 BabyMind Workshop***.

Ahn, W.-Y., Gu, H., Shen, Y., Haines, N., Hahn, H., Teater, J. E., Hahn, H., Myung, J. I.& Pitt, M. A. (2020) Rapid, precise, and reliable measurement of delay discounting using Bayesian design optimization. ***Scientific Reports***, 10, 12091.

Haines, N., Beauchaine, T. P., Galdo, M., Rogers, A. H., Hahn, H., Pitt, M. A., Myung, J. I., Turner, B. M., & **Ahn, W.-Y.** (2020) Anxiety Predicts Diminished Preference for Immediate Rewards in Trait-Impulsive Individuals: A Hierarchical Bayesian Analysis. ***Clinical Psychological Science***, 8(6), 1017-1036.

Hahn, H., Seager van Dyk, I., & **Ahn, W.-Y.** (2020) Attitudes Toward Gay Men and Lesbian Women Moderate Heterosexual Adults' Subjective Stress Response to Witnessing Homonegativity. ***Frontiers in Psychology***, 10.

Romeu, R. J.*, Haines, N.*, **Ahn, W.-Y.**, Busemeyer, J. R., & Vassileva, J. (2020) A computational model of the Cambridge Gambling Task with applications to substance use disorders. ***Drug and Alcohol Dependence***. 206, 107711. ***Co-first authors**

Lee, S.-H., Choi, I., **Ahn, W.-Y.**, Shin, E., Cho, S.-I. & Oh, B. (2020). Predicting quality of life with biomarkers in an elderly Korean population: A machine-learning approach. ***Archives of Gerontology and Geriatrics***. 87, 103966.

Aylward, J., Valton, V., **Ahn, W.-Y.**, Bond, R. L., Dayan, P., Roiser, J. P., & Robinson, O. J. (2019). Altered decision-making under uncertainty in unmedicated mood and anxiety disorders. ***Nature Human Behaviour***. 3, 1116-1123.

Hahn, H., Kalnitsky, S., Haines, N., Thamotharan, S., Beauchaine, T. P. & **Ahn, W.-Y.** (2019) Delay Discounting of Condom Use: Relationship Type and Sexual Orientation Influence Sexual Risk Behavior. ***Archives of Sexual Behavior***. 48, 2089-2102.

Justice, L., **Ahn, W.-Y.**, & Logan, J. (2019) Identifying Children with Language Disorder: An Application of Machine Learning Classification. ***Journal of Learning Disabilities***. 52(5), 351-365.

Haines, N., Southward, M., Hendricks, P., Cohn, J., Cheavens, J., Beauchaine, T., & **Ahn, W.-Y.** (2019) Using Computer-vision and Machine Learning to Automate Facial Coding of Positive and Negative Affect Intensity. ***PLOS ONE***, 14(2), e0211735.

Lee, S.-H., **Ahn, W.-Y.**, Seweryn, M., & Sadee, W. (2018) Combined genetic influence of the nicotinic receptor gene cluster CHRNA5/A3/B4 on nicotine dependence. ***BMC Genomics***, 19, 826.

Haines, N., Vassileva, J., & **Ahn, W.-Y.** (2018) The Outcome-Representation Learning model: a novel reinforcement learning model of the Iowa Gambling Task. ***Cognitive science***, 42(8), 2534-2561.

Cieslak, P., **Ahn, W.-Y.**, Bogacz, R., & Parkitna, R. (2018) Selective effects of the loss of NMDA or mGluR5 receptors in the reward system on adaptive decision-making. ***eNeuro***. 0331-18.

Ahn, W.-Y., Haines, N., & Zhang, L. (2017) Revealing neuro-computational mechanisms of reinforcement learning and decision-making with the hBayesDM package. ***Computational Psychiatry***, 1:1.

Rogers, A. H., Seager, I., Haines, N., Hahn, H., Aldao, A., & **Ahn, W.-Y.** (2017) The indirect effect of emotion regulation on minority stress and problematic substance use in lesbian, gay, and bisexual individuals. ***Frontiers in Psychology***, 8, 1881.

Vilares, I., Wesley, M. J., **Ahn, W.-Y.**, Bonnie, R., Hoffman, M., Jones, O. D., Morse, S., Yaffe G., Lohrenz, T., & Montague, P. R. (2017) Predicting the knowledge-recklessness boundary in the human brain. ***Proceedings of the National Academy of Sciences (PNAS)***, 114(12), 3222-3227.

Ahn, W.-Y. & Busemeyer, J. R. (2016) Challenges and promises for translating computational tools into clinical practice. ***Current Opinion in Behavioral Sciences***, 11, 1-7.

Ahn, W.-Y.*, Ramesh*, D., Moeller, F. G., & Vassileva, J. (2016) Utility of machine learning approaches to identify behavioral markers for substance use disorders: Impulsivity dimensions as predictors of current cocaine dependence. ***Frontiers in Psychiatry***, 7. ***Co-first authors**

Ahn, W.-Y. & Vassileva, J. (2016) Machine learning identifies substance-specific behavioral markers for heroin and amphetamine dependence. ***Drug and Alcohol Dependence***, 161, 247-257.

Rass, O., **Ahn, W.-Y.**, & O'Donnell, B. F. (2016) Resting-state EEG, impulsiveness, and personality in smokers and non-smokers. ***Clinical Neurophysiology***, 127(1), 409-418.

Ahn, W.-Y., Kishida, K. T., Gu, X., Lohrenz, T., Harvey, A. H., Alford, J. R., Smith, K. B., Yaffe, G., Hibbing, J. R., Dayan, P., & Montague, P. R. (2014) Nonpolitical images evoke neural predictors of political ideology. ***Current Biology***, 24, 1-7.

Ahn, W.-Y., Vasilev, G., Lee, S., Busemeyer, J. R., Kruschke, J. K., Bechara A., & Vassileva, J. (2014) Decision-making in stimulant and opiate addicts in protracted abstinence: evidence from computational modeling with pure users. ***Frontiers in Decision Neuroscience***, 5:849.

Chan, T. W. S., **Ahn, W.-Y.**, Bates, J. E., Busemeyer, J. R., Guilaume, S., & Courtet, P. (2014) Differential impairments underlying decision making in anorexia nervosa and bulimia nervosa: A cognitive modeling analysis. ***International Journal of Eating Disorders***., 47(2), 157-167.

Konstantinidis, E., Speekenbrink, M., Stout, J. C., **Ahn, W.-Y.**, Shanks, D. R. (2014) To simulate or not? Comment on Steingroever, Wetzels, and Wagenmakers (2014). ***Decision***, 1(3), 184-191.

Vassileva, J., **Ahn, W.-Y.**, Weber, K., Busemeyer J. R., Gonzalez, R., Stout J. C., Cohen, M. (2013) Cognitive modeling analysis reveals distinct effects of HIV and drug use on decision-making processes in women. ***PLoS ONE***, 8(8), e68962.

Ahn, W.-Y., Rass, O., Shin, Y.-W., Busemeyer, J. R., Brown, J. W., & O'Donnell, B. F. (2012) Emotion-based reinforcement learning. In N. Miyake, D. Peebles, & R. P. Cooper (Eds.) ***Proceedings of the*** 34th ***Annual Conference of the Cognitive Science Society*** *(pp. 78-83). Austin, TX: Cognitive Science Society.*

Ahn, W.-Y., Rass, O., Fridberg, D. F., Bishara, A. J., Forsyth, J. K., Breier, A., Busemeyer, J. R., Hetrick, W. P., Bolbecker, A. R., & O'Donnell, B. F. (2011) Temporal discounting of rewards in patients with bipolar disorder and schizophrenia. ***Journal of Abnormal Psychology***, 120(4), 911-921.

Ahn, W.-Y., Krawitz, A., Kim, W., Busemeyer, J. R., & Brown, J. W. (2011) A model-based fMRI with hierarchical Bayesian parameter estimation. ***Journal of Neuroscience, Psychology, and Economics***, 4(2), 95-110.

Upton, D. J., Bishara, A. J., **Ahn, W.-Y.**, & Stout, J. C. (2010) Propensity for risk taking and trait impulsivity in the Iowa Gambling Task. Personality and Individual Differences. ***Personality and Individual Differences***, 50(4), 492-495.

Fridberg, D. J., Queller, S., **Ahn, W.-Y.**, Kim, W., Bishara, A. J., Busemeyer, J. R., Porrino, L., & Stout, J. C. (2010) Cognitive mechanisms underlying risky decision-making in chronic cannabis users. ***Journal of Mathematical Psychology***, 54, 28-38.

Colleen, B., Krishnan, G., Vohs, J., **Ahn, W.-Y.**, Hetrick, W. P., Morzorati, S., & O'Donnell, B. F. (2009) Steady state responses: Electrophysiological assessment of sensory function in schizophrenia. ***Schizophrenia Bulletin***, 35(6), 1065-1077.

Ahn, W.-Y., Busemeyer, J. R., Wagenmakers, E.-J., & Stout, J. C. (2008) Comparison of decision learning models using the generalization criterion method. ***Cognitive Science***, 32(8), 1376-1402.

Book Chapters

Vassileva, J., Lee, J.-H., Psederska, E., & **Ahn, W.-Y.** (2022) Utility of computational approaches for precision psychiatry: Applications to substance use disorders. 224, 53-65. In Stoyanov, D. (Eds.), ***Computational Neuroscience, Neuromethods***. Springer Nature.

Ahn, W.-Y., Dai, J., Vassileva, J., Busemeyer, J. R., & Stout, J. C. (2016) Computational modeling for addiction medicine: From cognitive models to clinical applications. 224, 53-65. In Ekhtiari, H. & Paulus, M. (Eds.), ***Progress in Brain Research: Neuroscience for Addiction Medicine: From Prevention to Rehabilitation***. Elsevier.

Ahn, W.-Y., Jessup, R. K., & Busemeyer, J. R. (2013) Building bridges between neuroscience and complex decision making behavior. In L. Yuejia & Z.-L. Lu (Eds.), ***Progress in Cognitive Science: From Cellular Mechanisms to Computational Theories***. Peking University Press.

Manuscripts under review

Ahn, W.-Y., Lee, J.-H. & Kim, H. (invited review) Toward building a decision-making paradigm for dynamic and real-world addictive behaviors. ***Current Directions in Psychological Science***.

Haines, N., Rass, O., Shin, Y.-W., Brown, J. W., & **Ahn, W.-Y.** (in revision) Negative Affect Induces Rapid Learning of Counterfactual Representations: A Model-based Facial Expression Analysis Approach. ***bioRxiv***. http://dx.doi.org/10.1101/560011.

Ahn, W.-Y., Hendricks, P. & Haines, N. (2020) Easyml: A toolkit for easily building and evaluating machine learning models. ***bioRxiv***. doi: 10.1101/137240.

Grants & fellowships

National Research Foundation of Korea **April 2024-Dec 2025**
- "Transcranial photobiomodulation and vagal nerve stimulation for alcohol use disorder based on a multi-dimensional bio-signals and digital platform"
- Role: Co-I (PI: Dongil Chung)

R01 DA058038-01 **Sep 2023 - June 2028**
- "Utility of adaptive design optimization for developing rapid and reliable behavioral paradigms for substance use disorders"
- Role: MPI (MPIs: Jasmin Vassileva & Woo-Young Ahn)

Korea Health Industry Development Institute. **April 2022-Dec 2027**
- "Development of neurocognitive phenotypes for monitoring alcohol use disorder and behavioral interventions"
- Role: Co-I (PI: Young-Chul Jung)

R01 DA021421 **June 2021-Aug 2026**
- "Varieties of impulsivity in opiate and stimulant users"
- Role: Co-Investigator (PI: Jasmin Vassileva)

Creative-Pioneering Researchers Program, Seoul National University **Sep 2019-Aug 2025**
- "Neuro-computational mechanisms of altered decision-making using neuroimaging and machine learning techniques"
- Role: PI

National Research Foundation of Korea **April 2021-Dec 2023**
- "BIG-BRAIN: Behavior/neuroImaing/Genomics - Big data based Robust and explainable AI Neural nets"
- Role: PI

Convergence Research Grant, Seoul National University **Aug 2019-July 2020**
- "Elucidating the role of value-based decision-making systems in moral decision making with neuroimaging and machine learning"
- Role: PI

National Research Foundation of Korea **Mar 2018-Feb 2023**
- Basic Science Research Program
- "Discovering highly rapid and reliable multi-modal markers for smoking cessation using machine learning"
- Role: PI

Ministry of Science and ICT of Korea **Apr 2019-Dec 2020**
- "Infant-mimic neurocognitive developmental machine learning from interaction experience with real world (BabyMind)"
- Role: Co-I (PI: Byoung-Tak Zhang)

National Research Foundation of Korea **Aug 2018-Feb 2021**

- Basic Research Laboratory (BRL) Program
- "Integrative Studies on Brain Networks for Working Memory-Decision Making Interaction"
- Role: Co-I (PI: Sang-Hun Lee)

R01 DA021421 **Sep 2015-Aug 2020**

- "Varieties of impulsivity in opiate and stimulant users"
- Role: Consultant (PI: Jasmin Vassileva)

Seoul Science High School **March 2018-Dec 2018**

- Seoul Science High School Research & Education (R&E) Program
- "Predicting choice behavior and individual differences using multi-modal neuroimaging data, computational modeling, and machine learning"
- Role: PI

J. Stewart and Dagmar K. Riley Graduate Fellowship **2010-2011**

- College of Arts and Sciences Dissertation Year Research Fellowship, Indiana University
- Fellowship awarded to the most outstanding Ph.D. candidates at Indiana University

NIAID grant for the Women's Interagency HIV Study (WIHS) **Sep 2010**

- PI: Dr. Jasmin Vassileva, University of Illinois at Chicago (UIC)
- Apply cognitive modeling approaches to neurocognitive function in drug addiction and HIV.
- Role: Co-investigator responsible for computational modeling and statistical analyses

Honors and Awards

Association for Psychological Science (APS) 2017 Rising Star **Dec 2017**

- Presented to outstanding psychological scientists in the earliest stages of their research career post-PhD whose innovative work has already advanced the field and signals great potential for their continued contributions.

Jack and Linda Gill Outstanding Thesis Award - Honorable Mention **Sep 2011**

- Gill Center for Biomolecular Science, Indiana University
- Selected among graduate students in the Life Sciences from Indiana and Purdue Universities.

GPSO Travel Award **Spring 2010**

- Graduate and Professional Student Organization (GPSO), Indiana University

Commendation on Qualifying Examination, Indiana University **Fall 2009**

William K. Estes Summer Fellowship, Indiana University **Summer 2009**

- Fellowship given to a graduate student who does outstanding and rigorous research that encompasses formal or computational approaches to theory.

Travel fellowship to attend Summer Workshop on Decision Neuroscience **Aug 21-23, 2009**

- Hosted by INSEAD and Ross School of Business, University of Michigan

Indiana University College of Arts and Sciences Travel Award **Oct 2008**

Poster Award for Excellence at the 2nd Indiana Neuroimaging Symposium **Apr 2008**

Travel award for the IPAM Graduate Summer School, UCLA **July 9-26, 2007**
- Probabilistic Models of Cognition: The Mathematics of the Mind

Indiana University Graduate Fellowship **2006-2007**

Harvard University Graduate Fellowship **2002-2003**

Full-Scholarship from Duk-Myung academic foundation **Fall 2001**
- Scholarship for distinguished undergraduates at Seoul National University

Seoul National University Scholarship for Students with Academic Excellence **1997-1999**

Student Awards

Mina Kwon (graduate)
Basic Science Research Program **Sep 2023 - Aug 2025**
National Research Foundation of Korea (NRF)

Jeung-Hyun Lee (graduate)
SNU Graduate Scholarship for Basic Science Research **Spring 2022**

Hyeon-Jin Kim (graduate)
SNU Graduate Fellowship for Overseas Training **Spring 2022**

Jeung-Hyun Lee (graduate)
Best poster award at the Brain and Cognitive Sciences (BCS) Brain Day **Dec 2021**

Eunhwi Lee (undergraduate)
The Brain-Mind-Behavior program Research award **Dec 2021**

Jaeyeong Yang (graduate)
Samil Scholarship **June 2021**

Boyoung Kim (undergraduate)
The Brain-Mind-Behavior program Research award **Dec 2020**

Sanghoon Kang (undergraduate)
SNU Undergraduate Research Grants in Social Sciences **Fall 2020**

Boyoung Kim (undergraduate)
SNU Undergraduate Research Grants in Social Sciences **Fall 2020**

Mina Kwon (graduate)
SNU Graduate Scholarship for Basic Science Research **Spring 2020**

Jaeyeong Yang (graduate)
SNU Research Grants in Social Sciences **Spring 2020**

Jihyun Hur (graduate)
SNU Research Grants in Social Sciences **Spring 2020**

Jaeyeong Yang (graduate)
Paper Award for Excellence at the Korean Cognitive Science Annual Meeting **May 2019**

Yoonseo Zoh (research assistant)
Poster Award for Excellence at the Korean Cognitive Science Annual Meeting **May 2019**

Jihyun Hur (research assistant)
Accepted into the ABCD Workshop on Brain Development and Mental Health Application, University of Oregon, Portland, OR **May 2019**

Hyeonjin Kim (graduate)
SNU Research Grants in Social Sciences **Spring 2019**

Mina Kwon (undergraduate)
SNU Undergraduate Research Grants in Social Sciences **Spring 2019**

Yunseo Jeong (undergraduate)
SNU Undergraduate Research Grants in Social Sciences **Spring 2019**

Harhim Park (graduate)
SNU Graduate Scholarship for Basic Science Research **Spring 2019**

Mina Kwon (undergraduate)
The Brain-Mind-Behavior program Research award **Dec 2018**

Harhim Park (undergraduate)
SNU Undergraduate Research Grant in Social Sciences **Spring 2018**

Harliv Kaur (undergraduate)
NIDA Summer Research Internship ($3,840) **Spring 2017**

Julia Parker (undergraduate)
Summer Undergraduate Research Award ($3,500) **Spring 2017**

Qiaolan Deng (undergraduate)
Summer Undergraduate Research Award ($3,500) **Spring 2016**

Nathaniel Haines (graduate)
Accepted into the 2017 MIND Computational Summer School at Dartmouth **Aug 2017**

Nathaniel Haines (graduate)

Selected to attend a workshop on Bayesian estimation of Evidence Accumulation Models, Boston University, Cambridge, MA — **Nov 2016**

Teaching Experience

Seoul National University — **Sep 2017 - Present**

- Instructor, Psychological Science of Addiction (undergraduate) — **Fall 2024**
- Instructor, Computational modeling (graduate) — **Spring 2024**
- Instructor, Clinical Psychology (undergraduate) — **Spring 2024**
- Instructor, Psychological Science of Addiction (undergraduate) — **Fall 2023**
- Instructor, Computational modeling (graduate) — **Spring 2023**
- Instructor, Topics in Psychological Sciences (graduate) — **Fall 2022**
- Instructor, Psychological Science of Addiction (undergraduate) — **Fall 2022**
- Instructor, Topics in Psychological Sciences (graduate) — **Fall 2021**
- Instructor, Seminar in Psychopathology (graduate) — **Fall 2021**
- Instructor, Computational modeling (graduate) — **Spring 2021**
- Instructor, Psychological Science of Addiction (undergraduate) — **Spring 2021**
- Instructor, Topics in Psychological Sciences (graduate) — **Fall 2020**
- Instructor, Seminar in Psychopathology (graduate) — **Fall 2020**
- Instructor, Computational modeling (graduate) — **Spring 2020**
- Instructor, Clinical Psychology (undergraduate) — **Spring 2020**
- Instructor, Bran-Mind-Behavior (undergraduate) — **Spring 2020**
- Instructor, Psychological Science of Addiction (undergraduate) — **Fall 2019**
- Instructor, Computational modeling (graduate) — **Spring 2019**
- Instructor, Topics in Psychological Sciences (graduate) — **Spring 2019**
- Instructor, Seminar in Psychopathology (graduate) — **Fall 2018**
- Instructor, Psychological Science of Addiction (undergraduate) — **Fall 2018**
- Guest instructor, Bran-Mind-Behavior (undergraduate) — **Spring 2018**
- Instructor, Computational modeling (graduate) — **Spring 2018**
- Instructor, Seminar in Psychopathology (graduate) — **Fall 2017**
- Guest instructor, Abnormal Psychology (undergraduate) — **Fall 2017**

The Ohio State University — **Aug 2015 - Aug 2017**

- Instructor, Psychological Science of Addiction (undergraduate) — **Spring 2017**
- Instructor, Cognitive and Affective Basis of Behavior (graduate) — **Spring 2017**
- Instructor, Cognitive and Affective Basis of Behavior (graduate) — **Spring 2016**
- Guest instructor, Intro to Bayesian Statistics for Psychological Data (graduate) — **Spring 2017**
- Guest instructor, Quantitative & Statistical Methods (undergraduate) — **Spring 2016**

Indiana University, Bloomington — **Aug 2006 - May 2012**

- Lab instructor, Neuroimaging Methods and Statistics (undergraduate) — **Spring 2010**
- Instructor, Methods of Experimental Psychology (undergraduate) — **Spring 2009**
- Lab instructor, Advanced Statistics in Psychology I (graduate) — **Fall 2008**
- Teaching Assistant, Statistical Techniques (undergraduate) — **Spring 2008**
- Teaching Assistant, Health Psychology (undergraduate) — **Spring 2008, Fall 2007**
- Teaching Assistant, Abnormal Psychology (undergraduate) — **Fall 2007**

Academic Service

Editorial Board

- Current Directions in Psychological Science, Advisory Board — **2020 - Present**
- PLOS Computational Biology, Associate Editor — **2020 - Present**

- Journal of Neuroscience, Associate Editor **2018 - 2023**
- eLife, Reviewing Editor **2019 - 2020**
- Frontiers in Psychopathology **2014 - Present**
- Frontiers in Emotion Science **2015 - Present**

Grant review:
- National Science Foundation, USA
- The Medical Research Council (MRC), UK
- The Research Foundation - Flanders (FWO), Belgium
- Trinity College Dublin, Ireland
- Wellcome Trust, UK

Manuscript Review (alphabetical order):
- American Journal of Psychiatry
- American Journal of Public Health
- Assessment
- Archives of Clinical Neuropsychology
- Behavior Research Methods
- Biological Psychiatry
- Biological Psychiatry: Cognitive Neuroscience and Neuroimaging
- Clinical Psychological Science
- Computational Psychiatry
- Cognition and Emotion
- Cognitive Psychology
- Cognitive Science
- Current Directions in Psychological Science
- Drug and Alcohol Dependence
- Decision
- eLife
- Emotion
- Frontiers in Emotion Science
- Frontiers in Human Neuroscience
- Frontiers in Decision Neuroscience
- Frontiers in Psychopathology
- Human Brain Mapping
- International Journal of Obesity
- International Conference on Intelligent Biology and Medicine (ICIBM)
- Journal of Abnormal Psychology
- Journal of Behavioral Decision Making
- Journal of Experimental Psychology: General
- Journal of Mathematical Psychology
- Journal of Neuroscience (*Frequent Reviewer* in 2015, *Outstanding Reviewer* in 2017)
- Journal of Neuroscience, Psychology, and Economics
- Journal of Psychopathology and Clinical Science
- Nature Communications
- Nature Human Behaviour
- Neural Networks
- Neuroimage

- Neuroimage: Clinical
- Neuropsychologia
- Nicotine & Tobacco Research
- Oxford Handbook of Computational and Mathematical Psychology
- PLOS Computational Biology
- PLOS ONE
- Personality Neuroscience
- Proceedings of the Cognitive Science Society
- Psychological Assessment
- Psychological Science
- Psychological Medicine
- Psychonomic Bulletin & Review
- Schizophrenia Bulletin
- Schizophrenia Research
- Scientific Reports
- Translational Psychiatry
- The British Journal of Psychiatry

Trainees (Seoul National University)

- Graduate student advisees: Jaeyeong Yang (March 2018-Present), Harhim Park (Sep 2018-Aug 2020), Dayeong Min (Sep 2018-Dec 2018), Hyeonjin Kim (Sep 2018-Feb 2024), Soyeon Kim (Sep 2018-Aug 2020), Mina Kwon (Sep 2019-Present), Jihyun Hur (Sep 2019-Aug 2021), Heesun Park (March 2020-Feb 2022), Hoyoung Doh (March 2020-Feb 2022), JeungHyun Lee (March 2020-Present), Yoseph Lee (March 2021-Feb 2023), Eunwhi Lee (March 2022-Present), Jooyeon Im (Sep 2022-Present), Jeongyeon Shin (Mar 2023-Present), Hyeonmin Lee (Mar 2023-Present), Jaewoo Pyo (Mar 2023-Present), Yerin Jung (Mar 2023-Present), Sungmin Lee (Fall 2023-Present).
- Post-doc trainees: Jooyeon Im (Feb 2021-Aug 2022), Myeong-Seop Song (Mar 2021-Present), Sang-Ho Lee (Sep 2021-Aug 2024).
- Lab managers: Yujoo Oh (Mar 2022-Present), Rose Chang (Sep 2020-Feb 2022), Jiwon Kim (Jan 2018-Aug 2018), Yoonseo Zoh (Sep 2018-May 2020), Ella Roh (May 2020-July 2021), Rose Chang (Sep 2019-Mar 2021), Yuju Oh (Aug 2021-Present).

Trainees (The Ohio State University)

- Graduate student advisees: Nathaniel Haines (Aug 2016-Aug 2017), Hunter Hahn (Aug 2016-Aug 2017), Andrew Rogers (Jan 2017-Aug 2017)
- Lab managers: Nathaniel Haines (Aug 2015-July 2016), Iris (Yitong) Shen (Aug 2016-Aug 2017), Zoey Butka (July 2017-Aug 2017)

Research Award Committee **Spring 2010**

- Graduate and Professional Student Organization (GPSO), Indiana University

Software Development

• Developed an R package called hBayesDM (**h**ierarchical **Bayes**ian modeling of **D**ecision-**M**aking tasks), which offers hierarchical Bayesian analysis of various computational models on an array of decision-making tasks with a single line of coding. Tutorials and codes are available at https://github.com/CCS-Lab/hBayesDM.

• Developed a package called easyml (easy machine learning), which is a toolkit for easily building and evaluating machine learning models, both in R and Python. Codes are available at https://github.com/CCS-Lab/easyml.

• Developed a Python package called ADOpy, which is a general-purpose method for conducting adaptive experiments on the fly. The development of ADOpy was led by my graduate student Jaeyeong Yang in collaboration with Drs. Jay Myung and Mark Pitt at Ohio State. Codes are available at `https://github.com/adopy`.

PROFESSIONAL MEMBERSHIPS

Society for Neuroscience (2008-Present), Society for Mathematical Psychology (2007, 2015-Present), Association for Psychological Science (2007, 2015-Present), Society for Neuroeconomics (2009-2012), Cognitive Neuroscience Society (2011-2012), American Psychological Association (2010), Society for Judgment and Decision Making (2007).

REFERENCES

Professor Jerome R. Busemeyer
Department of Psychological and Brain Sciences
Indiana University, Bloomington
Tel: +1-812-855-4882
Email: jbusemey@indiana.edu

Professor Brian F. O'Donnell
Department of Psychological and Brain Sciences
Indiana University, Bloomington
Tel: +1-812-856-4164
Email: bodonnel@indiana.edu

Professor P. Read Montague
Virginia Tech Carilion Research Institute & University College London
Tel: +1-540-526-2006
Email: read@vt.edu

Professor Peter Dayan
Max Planck Institute for Biological Cybernetics at Tübingen
Tel: +49-7071-601-900
Email: peter.dayan@tuebingen.mpg.de