Choong-Wan Woo

Center for Neuroscience Imaging Research
Institute for Basic Science
Department of Biomedical Engineering
Sungkyunkwan University
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(Last updated: Oct 2025)

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Lab Instagram: @cocoanlab
Lab GitHub: https://github.com/cocoanlab

MAJOR RESEARCH GOALS

- Understanding the neural mechanisms of pain and emotions
- Developing integrated brain models of human affective experiences and clinical outcomes
- Translating basic and computational neuroscience findings into clinical applications
- Building life- and neuroscience-inspired artificial general intelligence

CURRENT POSITIONS

Associate Director Dec 2022 ~ present
Center for Neuroscience Imaging Research,
Institute for Basic Science

Associate Professor Sep 2023 ~ present
Department of Biomedical Engineering,
Sungkyunkwan University (Suwon, South Korea)

EDUCATION and PREVIOUS POSITIONS

Assistant Professor March 2017 ~ Aug 2023
Department of Biomedical Engineering,
Sungkyunkwan University (Suwon, South Korea)

Research Associate/Postdoctoral Fellow Feb 2017
Cognitive and Affective Neuroscience Lab
Institute of Cognitive Sciences,
University of Colorado at Boulder, USA
Advisor: Tor D. Wager, Ph.D.

Ph.D. (dual) Psychology*/Cognitive Science** Aug 2016
*Department of Psychology and Neuroscience,
**Institute of Cognitive Sciences,
University of Colorado at Boulder, USA
Advisor: Tor D. Wager, Ph.D.

PhD dissertation (submitted at Aug 2016)
Brain Representations and Mechanisms of Pain Experience and Regulation: A Multivariate Pattern Approach (committee: Tor D. Wager, Randall C. O'Reilly, Yuko Munakata, June Gruber, Tamara R. Sumner, Alaa Ahmed)

Clinical Training Full time 3-year Residency Training (Clinical Psychology) Feb 2010.
Department of Psychiatry, Seoul National University Hospital
Advisor: Min-Sup Shin, Ph.D.

M.A. Clinical Psychology Feb 2007.
Department of Psychology, Seoul National University, South Korea
Advisor: Seok-Man Kwon, Ph.D.

MA Thesis at Seoul National University (Feb 2007)
The Relationship between Excessive Doubts due to Error Processing Dysfunction and Obsessive Compulsive Symptoms

B.S. (cum laude) Biological Sciences Feb 2005.
Seoul National University, South Korea

RESEARCH GRANTS

Institute for Basic Science, 2017-present
Center for Neuroscience Imaging Research (IBS-R015-D1),
Associate Director (2022-present)
"Affective Neuroscience" Team leader (2017-present)

Korea Institute of Science and Technology, KRW 100M/year 2021-2022
Institutional Program, Principal Investigator
"Developing brain-based biomarkers of the aging brain based on the computational models of the network-level homeostatic regulation" (2E30410-20-085)

National Research Foundation of Korea, PI, KRW 500M/4 years 2019-2022
"Development and validation of pain biomarkers based on functional neuroimaging and machine learning in human" (2019R1C1C1004512)

Ministry of Science and ICT, Participating Investigator, KRW 100M/1 years 2020
"BabyMind: Infant-Mimic Neurocognitive Developmental Machine Learning from Interaction Experience with Real World" (2019-0-01367- BabyMind)

Ministry of Science and ICT, Participating Investigator, KRW 120M/2 years 2019-2020
"Hub Construction for Brain Science" (18-BR-03)

HONORS and AWARDS

Scitech Korea Young Neuroscientist Award (싸이텍코리아 젊은과학자상, 한국뇌신경과학회)**,**
Korean Society for Brain and Neural Sciences (Sep 2023)

Top 100 R&D achievements (국가연구개발 우수성과 100선)**,**
Title: *"Developing neuroimaging-based pain biomarkers based on experimental pain"*
Ministry of Science and ICT (Nov 2022)

Kim Chan Award (김찬 학술상, 대한통증연구회)**,**
The Korean Pain Research Society (Nov 2022)

Outstanding Achievement Award (학술상 본상, 대한뇌기능매핑학회)**,**
Korean Society for Human Brain Mapping (Nov 2021)

Teaching Award,
Sungkyunkwan University (Sep 2020)

Jae-il Kim Young Scholar Award (김재일 소장학자상, 한국심리학회)**,**
Korean Psychological Association (Aug 2019)

International Association for the Study of Pain (IASP) Travel Award ($1,450),
IASP, 16th World Congress on Pain, Yokohama, Japan (Sep 2016)

Organization for Human Brain Mapping (OHBM) Abstract Travel Award ($1,000),
OHBM 2016 Annual meeting, Geneva, Switzerland (June 2016)

Heyer Award,
Dept. of Psychology and Neuroscience, University of Colorado at Boulder (May 2015)

Carol B. Lynch Graduate Fellowship,
University of Colorado at Boulder (May 2015)

Invited scholar,
European Pain School, Siena, Italy (June 2013)

American Psychosomatic Society (APS) Travel Award for MacLean Scholars,
American Psychosomatic Society (Jan 2013)

Fulbright Graduate Study Award,
Bureau of Educational and Cultural Affairs,
United States Department of State, (2011 ~ 2013)

High Academic Achievement Award,
College of Natural Sciences, Seoul National University (2005)

Undergraduate Student Research Award,
Title: "*The Role of Contrast and Exposure Duration in Pattern Motion Perception*"
Institute of Psychological Science, Seoul National University (2004)

Scholarship for the Research Participating Program for Undergraduate Students,
Title: "*Brain Imaging Method: Focusing on Functional Magnetic Resonance Imaging*"
Center for Teaching and Learning, Seoul National University (2004)

PROFESSIONAL AFFILIATIONS

International Association for the Study of Pain (IASP); Society for Neuroscience (SfN); Organization for Human Brain Mapping (OHBM); Social and Affective Neuroscience Society (SANS); Korean Society for Human Brain Mapping (KHBM) (2019-2020 국제간사, 2021-2022

국제이사, 2023-2024 학술이사); The Korean Society for Brain and Neural Sciences (KSBNS) (2020 학술부위원장, 2022-2024 학술위원); Korean Society for Cognitive & Biological Psychology; Korean Clinical Psychology Association (2022-2023 59대 학술이사)

PROFESSIONAL ACTIVITIES

Associate Editor	*Pain*
Academic Editor	*PLOS Biology*
Consulting Editor	*Cognition & Emotion*
Ad-Hoc Reviewer	*Nature, Nature Neuroscience, Nature Human Behaviour, Trends in Cognitive Sciences, Science Translational Medicine, Nature Communications, PNAS, Pain, eLife, Clinical Psychological Science, PNAS, Scientific Data, Cognitive, Affective, and Behavioral Neuroscience, Human Brain Mapping, NeuroImage, Journal of the American Academy of Child and Adolescent Psychiatry, Brain and Language, Journal of American Neuroradiology, Magnetic Resonance in Medicine; Neuroinformatics, etc.*

LICENSURE

2010 ~ Present	Professional Clinical Psychologist (Korean Psychological Association)
2010 ~ Present	Mental Health Clinical Psychologist (Ministry of Health and Welfare, Republic of Korea)

RESEARCH

★indicates Cocoan lab trainee; ☆indicates Cocoan lab undergrad trainee

Publications (Book Chapter):

2025

★Lee, J.-J., **Woo, C.-W.** Pain in the Brain. In: Armony J, Vuilleumier P, eds. *The Cambridge Handbook of Human Affective Neuroscience*. Cambridge University Press; 2025:248-265.

Publications (Journal Articles):

2025

★Lee, S.*, Lee, J.*, ★Kim, S., ★Yoon, H., Park, S., Park, J. ☆Bae, J., Hong, S.-J.†, **Woo, C.-W.**† (accepted). EVAAA: A Virtual Environment Platform for Essential Variables in Autonomous and Adaptive Agents, *NeurIPS 2025*

*co-first authors, †co-corresponding authors

Shin, W.-G., Ahn, J., Choe, K. W., Lee, H., ★Han, J., ★Lee, E., ★Lux, B. K., **Woo, C.-W.,** Choi, I.*, Sul, S.* (in press) Happier individuals generate more spontaneous thoughts about friends and value relationships over money, *Communications Psychology*.

Kim, H., Tyler, J., Wheaton, M. G., ★Park, S., **Woo, C.-W.,** Foa, E., Simpson, H. B. (in press) A network analysis of how obsessive-compulsive symptoms change during exposure and response prevention treatment, *Psychological Medicine*.

Jang, S., Kim, N., Kim, N., Moon, J.-Y., **Woo, C.-W.,** Park, Y.-W. (2025) Journey to My Past: Exploring and Journaling Past Memories Evoked by Questions Framed as Proud Moments. *CHI '25: Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*, *No.* 983, 1-19. https://doi.org/10.1145/3706598.3713215

2024

★Gim, S., Hong, S.-J., Losin, E. A. R., **Woo, C.-W.** (2024). Spatiotemporal integration of contextual and sensory information within the cortical hierarchy in human pain experience, *PLoS Biology*, 22(11), e3002910. https://doi.org/10.1371/journal.pbio.3002910

Berman, T., Cushing, C., Manuel, S., Vachon-Presseau, E., Cortese, A., Kawato, M., **Woo, C.-W.**, Wager, T. D., Lau, H., Roy, M., Taschereau-Dumouchel, V. (2024). Modulating subjective pain perception with decoded Montreal Neurological Institute-space neurofeedback: a proof-of-concept study. *Phil. Trans. R. Soc. B*, 379, 20230082. https://doi.org/10.1098/rstb.2023.0082

★Lee, D. H., ★Lee, S., & **Woo, C.-W.** (2024). Decoding Pain: Uncovering the Factors that Affect Performance of Neuroimaging-Based Pain Models. *Pain*, https://doi.org/10.1097/j.pain.0000000000003392

★Gim, S., ★Lee, D. H., ★Lee, S. & **Woo, C.-W.*** (2024). Interindividual differences in pain can be explained by fMRI, sociodemographic, and psychological factors. *Nature Communications*, 15, 7883 (1-6). https://doi.org/10.1038/s41467-024-51910-9

★Kim, J., ★Gim, S., Yoo, S. B. M.* & **Woo, C.-W.*** (2024). A Computational Mechanism of Cue-Stimulus Integration for Pain in the Brain. *Science Advances*, **10**(37), eado8230(1-13). https://doi.org/10.1126/sciadv.ado8230

*co-corresponding author

★Lee, S. A., ★Lee, J.-J.*, Han, J., Choi, M. M., Wager, T. D., & **Woo, C.-W.*** (2024). Brain Representations of Affective Valence and Intensity in Sustained Pleasure and Pain. *Proceedings of the National Academy of Sciences*, **121**(25), e2310433121.

https://doi.org/10.1073/pnas.2310433121

*co-corresponding author

★Kim, H. J., ★Lux, B. K., ★Lee, E., Finn, E. S., & **Woo, C.-W.** (2024). Brain decoding of spontaneous thought: Predictive modeling of self-relevance and valence using personal narratives. *Proceedings of the National Academy of Sciences*, **121**(14), e2401959121, https://doi.org/10.1073/pnas.2401959121

Lim, J.-S.†, ★Lee, J.-J.†, Kim. G. H., Kim, H.-R. Shin, D. W., Lee, K.-J., Baek, M. J., Ko, E., Kim, B. J., Kim, S., Ryu, W.-S., Chung J., Kim, D.-E., Gorelick, P. B., **Woo, C.-W.***, & Bae, H.-J.* (*2024*). Subthreshold amyloid deposition, cerebral small vessel disease, and functional brain network disruption in delayed cognitive decline after stroke. *Frontiers in Aging Neuroscience*, **16**, 1430408. https://doi.org/10.3389/fnagi.2024.1430408

2023

★Kim, J., Andrews-Hanna, J. R., Eisenbarth, H. ★Lux, B. K., ★Kim, H. J., ★Lee, E., Lindquist, M. A., Losin, E. A. R., Wager, T. D., **Woo, C.-W.** (2023) A Dorsomedial Prefrontal Cortex-based Dynamic Functional Connectivity Model of Rumination, *Nature Communications*, **14**, 3540 (1-14), https://doi.org/10.1038/s41467-023-39142-9

Jang, S., Lee, K.-R., Goh, G., Kim, D., Yun, G., Kim, N., ★Lux, B. K., **Woo, C.-W.**, Kim, H., Park, Y.-W. (2023) Design and field trial of EmotionFrame: exploring self-journaling experiences in homes for archiving personal feelings about daily events, *Human-Computer Interaction*, doi: 10.1080/07370024.2023.2219259

2022

★Kohoutová, L., Atlas, L. Y., Büchel, C., Buhle, J. T., Geuter, S., Jepma, M., Koban, L., Krishnan, A., ★Lee, D. H., ★Lee, S., Roy, M., Schafer, S. M., Schmidt, L., Wager, T. D., **Woo, C.-W.** (2022) Individual Variability in Brain Representations of Pain, *Nature Neuroscience*, **25**, 749-759, doi: 10.1038/s41593-022-01081-x

★Lee, J.-J., ★Lee, S., ★Lee, D. H., **Woo, C.-W.** (2022). Functional Brain Reconfiguration During Sustained Pain. *eLife*, *11*, e74463 (1-39), doi: 10.7554/eLife.74463

★Kim, B., Andrews-Hanna, J. R., ★Han, J., ★Lee, E., & **Woo, C.-W.** (2022). When self comes to a wandering mind: Brain representations and dynamics of self-generated concepts in spontaneous thought, *Science Advances*, *8(35)*, eabn8616, doi: 10.1126/sciadv.abn8616

Andrews-Hanna, J. R.*, **Woo, C.-W.***, Wilcox, R., Eisenbarth, H., ★Kim, B., ★Han, J., Losin, E. A. R., Wager, T. D. (2022) The Conceptual Building Blocks of Everyday Thought: Tracking the Emergence and Dynamics of Ruminative and Non-Ruminative Thinking,

Journal of Experimental Psychology: General, *151(3)*, 628-642, doi:10.1037/xge0001096
*co-first author

Kim, D., **Woo, C.-W.***, Kim S.-G. (2022) Neural mechanisms of pain relief through paying attention to painful stimuli, *Pain*, 163(6), 1130-1138, doi:10.1097/j.pain.0000000000002464
*corresponding author

Čeko, M., Kragel, P. A., **Woo, C.-W.**, López-Solà, M., Wager, T. D. (2022) Common and stimulus type-specific brain representations of negative affect, *Nature Neuroscience*, doi: 10.1038/s41593-022-01082-w

Coll, M.-P., Slimani, H., **Woo, C.-W.**, Wager, T. D., Rainville, P., Vachon-Presseau, E., Roy, M. (2022). The neural signature of the decision value of future pain, *Proceedings of the National Academy of Sciences (PNAS)*, *119(23)*, e2119931119, doi: 10.1073/pnas.2119931119

Kim, K. I., Jung, W. H., **Woo, C.-W.**, Kim, H. (2022). Neural signatures of individual variability in context-dependent perception of ambiguous facial expression, *NeuroImage*, *258*, 1053-811, doi: 10.1016/j.neuroimage.2022.119355

Lee, S.-H., Chey, J. Ahn, W.-Y., **Woo, C.-W.**, Youm, Y., Kim, H., Oh, N., Park, H., ★Gim, S., ★Lee, E., Choi, I. (2022). Psychological well-being and salivary markers of inflammation: The moderating effect of age, *Applied Psychology: Health and Well-being*, doi: 10.1111/aphw.12389

Jiang, R., **Woo, C.-W.**, Qi, S., Wu, J., Sui, J. (2022). Challenges and Solutions for Interpreting Brain Biomarkers in Machine Learning-Based Predictive Neuroimaging. *IEEE SPM (Signal Processing Magazine)*, *39(4)*, 107-118, doi: 10.1109/MSP.2022.3155951

Lee, J.-Y., You, T., Lee, C.-H., Im, G. H., Seo, H., **Woo, C.-W.**, Kim, S.-G. (2022) Role of Anterior Cingulate Cortex Inputs to Periaqueductal Gray for Pain Avoidance. *Current Biology*, *32*, 1-14; doi:10.1016/j.cub.2022.04.090

Petre, B., Kragel, P., Atlas, L. Y., Geuter, S., Jepma, M., Koban, L., Krishnan, A., Lopez-Sola, M., Losin, E. A. R., Roy, M., **Woo, C.-W.**, Wager, T. D. (2022) A multistudy analysis reveals that evoked pain intensity representation is distributed across brain systems. *PLoS Biology*, 20(5), e3001620; doi:10.1371/journal.pbio.3001620

Han, X., Ashar, Y. K., Kragel, P., Petre, B., Schelkun, V., Atlas, Lauren Y., Chang, L. J., Jepma, M., Koban, L., Losin, E. A. R., Roy, M., **Woo, C.-W.**, & Wager, T. D. (2022) Effect sizes and test-retest reliability of the fMRI-based Neurologic Pain Signature. *NeuroImage*, *247*, 118844.; https://doi.org/10.1016/j.neuroimage.2021.118844

2021

★Lee, J.-J., ★Kim, H. J., Čeko, M. Park, B., ★Lee, S. A., Park, H., Roy, M., Kim, S.-G., Wager, T. D., & **Woo, C.-W.** (2021) A Neuroimaging Biomarker for Sustained Experimental and Clinical Pain, *Nature Medicine*, *27*, 174-182; https://doi.org/10.1038/s41591-020-1142-7

Lim, J.-S.*#, ★Lee, J.-J.*, **Woo, C.-W.**# (2021) Post-stroke cognitive impairment: Pathophysiological insights into brain disconnectome from advanced neuroimaging analysis techniques, *Journal of Stroke*, *23(3)*, 297-311; doi:10.5853/jos.2021.02376
*co-first author, #co-corresponding author

2020

★Kohoutová, L., Heo, J., Cha, S., ★Lee, S. Moon, T., Wager, T. D., & **Woo, C. -W.** (2020) Interpreting machine learning models in neuroimaging: Towards a unified framework, *Nature Protocols*, *15*, 1399-1435; https://doi.org/ 10.1038/s41596-019-0289-5

Losin, E. A. R., **Woo, C. -W.**, Medina, N. A., Andrews-Hanna, J., Eisenbarth, H., Wager, T. D. (2020) Neural and Sociocultural Mediators of Ethnic Differences in Pain, *Nature Human Behaviour*. https://doi.org/10.1038/s41562-020-0819-8

Lee. T. Y., Hwang, W. J., Kim, N. S., Park, I., Lho, S. K., Moon, S.-Y., Oh, S., Lee. J., Kim. M., **Woo, C.-W.**, Kwon, J. S. (2020) Prediction of psychosis: model development and internal validation of a personalized risk calculator, *Psychological Medicine*, 1-9; https://doi.org/10.1017/S0033291720004675

Shin, W.-G., **Woo, C.-W.**, Jung, W. H., Kim, H., Lee, T. Y., Decety, J., Kwon, J. S. (2020) The neurobehavioral mechanisms underlying attitudes toward people with mental or physical illness, *Frontiers in Behavioral Neuroscience*, *14*, 571225; https://doi.org/10.3389/fnbeh.2020.571225

Park, B., ★Lee, J.-J., ★Kim, H. J., **Woo, C.-W.**, Park, H. (2020) A neuroimaging marker for predicting longitudinal changes in pain intensity of subacute back pain based on large-scale brain network interactions, *Scientific Reports*, *10*, 17392; https://doi.org/10.1038/s41598-020-74217-3

Silvestrini, N., Chen, J., Piché, M., Roy, M., Vachon-Presseau, E., **Woo, C.-W.**, Wager, T. D., & Rainville, P. (2020) Distinct fMRI patterns colocalized in the cingulate cortex underlie the after-effects of cognitive control on pain, *NeuroImage*, *217*, 116898; https://doi.org/10.1016/j.neuroimage.2020.116898

Lim, J. S.*, ★Lee, J. -J.* , **Woo, C. -W.**, Song, J., Oh, M. -S., Yu, K. -H., Lee, B. -C. (2020) Individual-level lesion-network mapping to visualize stroke lesion effects on the brain network, *Journal of Clinical Neurology*, *16(1)*, 116-123

*co-first authors

Zheng, W., **Woo, C. -W**, Yao, Z., Goldstein, P., Atlas, L. Y., Roy, M., Schmidt, L., Krishnan, A., Jepma, M., Hu, B. and Wager, T. D. (2020) Pain-Evoked Reorganization in Functional Brain Networks, *Cerebral Cortex*, *30(5)*, 2804-2822

2019

Jeong, S. -J., Lee, I. Y., Jun, B. O. , Ryu, Y. -J., Sohn, J. -W., Kim, S. -P., **Woo, C. -W.**, Koo, J. W. , Cho, I. -J., Oh, U., Kim, K., and Suh, P. -G. (2019) Korea Brain Initiative: Emerging Issues and Institutionalization of Neuroethics, *Neuron*, *101 (3)*, 390-393

★Hong, Y, ☆Yoo, Y, ☆Han, J., Wager, T. D. & **Woo, C. -W.** (2019) False-positive neuroimaging: Undisclosed flexibility in testing spatial hypotheses allows presenting anything as a replicated finding, *NeuroImage*, *195*, 384-395

Matthewson, G.*, **Woo, C. -W.***, Reddan, M. C., & Wager, T. D. (2019) Cognitive self-regulation influences pain-related physiology, *PAIN (Editor's choice)*, *160*, 2338-2349

*co-first authors

2018

Kragel, P. A., Kano, M., Van Oudenhove, L., Ly, H. G., Dupont, P., Rubio, A., Delon-Martin, C., Bonaz, B. L. Manuck, S. B., Gianaros, P. J., Ceko, M., Losin, E. A. R., **Woo, C. -W.,** Nichols, T. E. & Wager, T. D. (2018) Generalizable representations of pain, cognitive control, and negative emotion in medial frontal cortex. *Nature Neuroscience*, *21*, 283-289

2017

Woo, C. -W., Chang, L. J. Lindquist, M. A., & Wager, T. D. (2017) Building better biomarkers: Brain models in translational neuroimaging. *Nature Neuroscience*, *20*, 365–377

Woo, C. -W., Schmidt, L., Krishnan, A., Jepma, M., Roy, M., Lindquist, M. A., Atlas, L. Y., & Wager, T. D. (2017) Quantifying cerebral contributions to pain beyond nociception. *Nature Communications*, *8*, 14211

Wager, T. D. & **Woo, C. -W.** (2017) Imaging biomarkers and biotypes for depression. *Nature Medicine*. *23*, 16–17. doi:10.1038/nm.4264

Koban, L., Kross, E., **Woo, C. -W.**, Luka Ruzic, L. &, Wager, T. D. (2017) Frontal-brainstem pathways mediating placebo effects on social rejection. *Journal of Neuroscience*, *37 (13)* 3621-3631

López-Solà, M., **Woo, C. -W.**, Pujol, J., Deus, J., Harrison, B. J., Monfort, J. & Wager, T. D. (2017). Towards a neurophysiological signature for fibromyalgia. *PAIN*. 158(1):34-47

Lindquist, M. A., Krishnan, A., Lopez-Sola, M., Jepma, M., **Woo, C. -W.**, Koban, L., Roy, M.

Atlas, L. Y., Chang, L. J., Losin, E. A. R., Eisenbarth, H., Ashar, Y. K., Delk, Z., & Wager, T. D. (2017). Group-regularized individual prediction: Theory and application to pain. *NeuroImage.* 145, 274-287. doi: 10.1016/j.neuroimage.2015.10.074

2016

Krishnan, A., **Woo, C. -W.**, Chang, L. J., Ruzic, L., Gu, X., López-Solà, M., Jackson, P. L., Pujol, J., Fan, J., & Wager, T. D. (2016). Somatic and vicarious pain are represented by dissociable multivariate brain patterns. *eLife. 5*:e15166. doi:10.7554/eLife.15166.001

Vachon-Presseau, E. Roy, M., **Woo, C. -W.**, Kunz, M. Martel, M., Sullivan, M. J., Jackson, P. L., Wager, T. D., & Rainville, P. (2016). Multiple faces of pain: Effects of chronic pain on the brain regulation of facial expression. *PAIN*. doi:10.1097/j.pain.0000000000000587

Wager, T. D. & **Woo, C. -W.** (2016). Issues in assessing reliability in pain neuroimaging. *PAIN. 157*, 1574–1578

Woo, C. -W., & Wager, T. D. (2016). What reliability can and cannot tell us about pain report and pain neuroimaging. *PAIN. 157*(3):511-3.

2015

Woo, C. -W., & Wager, T. D. (2015). The predictive mapping approach in neuroimaging. *Science (supplement*), *Advances in Computational Psychophysiology*, 18-21 (invited contribution)

Woo, C. -W., & Wager, T. D. (2015). Neuroimaging-based biomarker discovery and validation. *PAIN. 156*(8):1379-81.

Woo, C. -W., Roy, M., Buhle, J. T. & Wager, T. D. (2015). Distinct brain systems mediate the effects of nociceptive input and self-regulation on pain. *PLoS Biology. 13*(1): e1002036. doi:10.1371/journal.pbio.1002036

Commentary on this publication

Bray, N. (2015). Reappraising pain. *Nature Review Neuroscience.* 16, 124-125

Ploner, M., Bingel, U., & Wiech, K. (2015). Towards a taxonomy of pain modulations. *Trends in Cognitive Sciences.* 19, 180-182

Mano, H. & Seymour, B. (2015). Pain: A Distributed Brain Information Network? *PLoS Biology.* 13(1): e1002037

Wager, T. D. & **Woo, C, -W.** (2015). fMRI in analgesic drug discovery. *Science Translational Medicine.* 7, 274fs6, doi:10.1126/scitranslmed.3010342

Losin, E. A. R., **Woo, C. -W.**, Krishnan, A., Wager, T. D., Iacoboni, M. & Dapretto, M. (2015). Brain and psychological mediators of imitation: Sociocultural versus physical traits. *Culture and Brain.* doi:10.1007/s40167-015-0029-9

Yamamoto, D. J., **Woo, C. -W.,** Wager T. D., Regner, M. & Tanabe, J. (2015) Influence of

dorsolateral prefrontal cortex and ventral striatum on risk avoidance in addiction: a mediation analysis. *Drug and Alcohol Dependence*, 149, 10-17. doi: 10.1016/j.drugalcdep.2014.12.026

2014

Woo, C. -W., Koban, L., Kross, E., Lindquist, M. A., Banich, M. T., Ruzic, L., Andrews-Hanna, J. R. & Wager, T. D. (2014). Separate neural representations for physical pain and social rejection. *Nature Communications*, *5*, 5380. doi: 10.1038/ncomms6380

Commentary on this publication

Rogachov, A., Cheng, J. C., & DeSouza, D. D. (2015). Discriminating neural representations of physical and social pains: how multivariate statistics challenge the 'shared representation' theory of pain. *Journal of Neurophysiology*

Woo, C. -W., Krishnan, A., Wager, T. D. (2014) Cluster-extent based thresholding in fMRI analyses: Pitfalls and recommendations. *NeuroImage*, *91*, 412-419

2013

Wager, T. D., Atlas, L. Y., Lindquist, M. A., Roy, M., **Woo, C. -W.** & Kross, E. (2013). An fMRI-based Neurologic Signature of Physical Pain. *New England Journal of Medicine*, *368 (15)*, 1388-1397.

2010-2012

Woo, C. -W., Kwon, S. -M., Lim, Y. -J., & Shin, M. -S. (2010). The obsessive-compulsive inventory-revised (OCI-R): psychometric properties of the Korean version and the order, gender, and cultural effects. *Journal of Behavior Therapy and Experimental Psychiatry*, *41*, 220-227.

Woo, C. -W. & Shin, M. -S. (2010). Cognitive impairments in schizophrenia and psychotic bipolar disorder and their relation to psychotic symptoms. *Korean Journal of Clinical Psychology*, *29*, 471-489.

Woo, C. -W., Shin, M. -S, & Kwon, S. -M. (2010). Are obsessive beliefs specific to obsessive-compulsive symptoms? *Korean Journal of Clinical Psychology*, *29*, 35-52.