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# Byeol Kim Lux

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Psychological and Brain Sciences,  
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## **MAJOR RESEARCH INTEREST**

- Investigating the neural mechanisms of self-related experiences and emotion
- Understanding the relationship between brain functions and mental and physical health
- Translating the basic neuroscience findings to clinical or educational applications

## **EDUCATION & TRAINING**

### **Ph.D. student**

Sep 2021 - Present

Department of Psychological and Brain Sciences,  
**Dartmouth College**, Hanover, NH, USA  
Lab: Cognitive and Affective Neuroscience Laboratory ([CANLab](#))  
(PI: Dr. Tor Wager)

### **Post-Master Research Assistant**

Sep 2019 – Aug 2021

Center for Neuroscience Imaging Research (CNIR),  
**Institute of Basic Science (IBS)**, Suwon, South Korea  
Lab: Computational Cognitive Affective Neuroscience Laboratory ([COCOAN Lab](#))  
(PI: Dr. Choong-Wan Woo)

### **M.S. in Biomedical Engineering,**

Sep 2017 – Aug 2019

Department of Biomedical Engineering,  
**Sungkyunkwan University**, Suwon, South Korea (Advisor: Dr. Choong-Wan Woo)  
Thesis: [\*Understanding the brain representations of endogenous affective thoughts.\*](#)

### **B.S. in Astronomy, B.A. in Psychology,**

Mar 2012 – Aug 2017

Department of Astronomy & Department of Psychology  
**Yonsei University**, Seoul, South Korea

## **HONORS and AWARDS**

### **Fulbright graduate student program award (2021 – 2023)**

Bureau of Educational and Cultural Affairs, United States Department of State

### **Best presentation award (Dec 2018)**

Center for Neuroscience Imaging Research, Institute for Basic Science, South Korea

### **Shimsan scholarship for advanced graduate students (Fall 2018)**

Sungkyunkwan University, South Korea

**Best presentation award** (May 2018)

Korean Society for Cognitive Science, South Korea

**High academic achievement scholarship** (Fall 2015, Spring 2016, 2013)

Yonsei University, Seoul, South Korea

**Scholarship for undergraduate students** (Fall 2012)

Sinchon regional support association, Seoul, South Korea

## **PUBLICATIONS**

Published under names Byeol Kim (2021-2022) or Byeol Lux

**Kim, B.**, Andrews-Hanna, J. R., Han, J., Lee, E., & Woo, C.-W.

When self comes to a wandering mind: Brain representations and affective dynamics of spontaneous thought. *Science Advances*. DOI: [10.1126/sciadv.abn8616](https://doi.org/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. (2021) The conceptual building blocks of everyday thought: Tracking the emergence and dynamics of ruminative and non-ruminative thinking. *Journal of Experimental Psychology: General* [pdf](#)

Kim, J., Andrews-Hanna, J. R., Eisenbarth, H., **Kim, L.**, Kim, H., Lee, E., Lindquist, M., Losin, E. A. R., Wager, T. D., & Woo, C.-W.

A Dorsomedial Prefrontal Cortex-based Dynamic Functional Connectivity Model of Rumination. (Under review)

Lee, E. \*, **Kim, L. \***, Han, J., & Woo, C.-W. (in preparation, mentoring project)

Free association-based dynamic signature of trait affectivity.

Han, J. \*, **Kim, L. \***, Lee, E., Yoo, Y. S. & Woo, C.-W. (in preparation, mentoring project)

(Working title) Understanding the spontaneous mind with natural language processing and network modeling.

Kim, H. J., **Kim, L.**, & Woo, C. -W. (in preparation)

Getting personal: Brain decoding of valence and self-relevance of personal thoughts using personal stories.

\*co-first authors

## **CONFERENCE PRESENTATIONS (selected)**

**Kim, B.**, Andrews-Hanna, J. R., Han, J., Lee, E., & Woo, C.-W. (April 2021).

*When self comes to a wandering mind: Brain representations and affective dynamics of spontaneous thought.*

Poster presentation at the annual meeting of the Social & Affective Neuroscience Society, held virtually.

**Kim, B.**, Andrews-Hanna, J. R., & Woo, C.-W. (Oct 2019).

*Understanding the brain representations of endogenous affective thoughts.*

Poster presentation at the annual meeting of the Society for Neuroscience, Chicago, USA.

**Kim, B.**, Andrews-Hanna, J. R., & Woo, C.-W. (Oct 2019).

*Understanding the brain representations of endogenous affective thoughts.*

Poster presentation at the Institute of Basic Science Conference on Neuroimaging, South Korea.

**Kim, B.**, Oh, J., Andrews-Hanna, J. R., & Woo, C.-W. (Nov 2018).

*Dynamic modeling and brain decoding of internal thoughts and emotions.*

Poster presentation at the annual meeting of the Society for Neuroscience, San Diego, USA.

**Kim, B.**, Andrews-Hanna, J. R., & Woo, C.-W. (Oct 2018).

*Dynamic modeling and brain decoding of internal thoughts and emotions.*

Oral presentation at the monthly meeting of Center for Neuroscience Imaging Research, South Korea.

**Kim, B.**, Jung, M., Park, J., Andrews-Hanna, J. R., & Woo, C.-W. (May 2018).

*Dynamic modeling and brain decoding of internal thoughts and emotions.*

Poster presentation at the annual meeting of the Korean Society for Cognitive Science, South Korea.

## **PATENT APPLICATION**

Woo, C.-W., **Kim, B.**, Han, J. (2022) "Visualization and emotion-predictive modeling of the stream of thought.", South Korea patent 10-2441591-0000, filed July 09, 2020, and issued September 02, 2022.

## **OTHERS ACADEMIC EXPERIENCES**

Prospective Ph.D. & RA Event in Psychology (PPREP), Harvard University (Oct 2020)

Member of the student council of Department of Biomedical Engineering, Sungkyunkwan University (Spring 2018)

Member of the student council of Department of Astronomy, Yonsei University (Spring 2014)

## **SKILLS**

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| Programing Language | MATLAB (proficient, mainly used),<br>Python (Intermediate), Unix (Basic), HTML (Basic) |
| Neuroimaging        | SPM, CANlab Tools (Tor Wager's lab tools), FSL, fMRIprep, tedana,<br>afni              |
| Statistics          | SPSS, R  |