

Sung-Yon Kim, Ph.D.

Assistant Professor, Department of Chemistry
Chung-am Science Fellow, POSCO TJ Park Foundation
Institute of Molecular Biology and Genetics, Seoul National University

CONTACT INFORMATION

1 Gwanak-ro, Gwanak-gu
Seoul National University, Bldg 105 Rm 209
Seoul 08826, South Korea
sungyonkim@snu.ac.kr / <http://sungyonkimlab.org>

EDUCATION

2009 – 2013 Ph.D. in Neuroscience, Stanford University
2003 – 2009 B.S. in Chemistry and Biological Sciences (double major), *summa cum laude*,
Seoul National University
(2004 – 2005) Military service in South Korea

PROFESSIONAL EXPERIENCE

2017 – *Assistant Professor*, Department of Chemistry
Seoul National University
2016 – *Assistant Professor*, Institute of Molecular Biology and Genetics
Seoul National University
2015 – 2017 *Assistant Professor*, Department of Biophysics and Chemical Biology
Seoul National University
2013 – 2015 *Postdoctoral Fellow*, Institute for Medical Engineering and Science
Massachusetts Institute of Technology (Advisor: Dr. Kwanghun Chung)
2009 – 2013 *Graduate Student*, Neurosciences Ph.D. Program
Stanford University (Advisor: Dr. Karl Deisseroth)
2008 – 2009 *Research Assistant*, Korea Institute of Science and Technology (Dr. Hee-Sup Shin)

HONORS & AWARDS

2015 Poster Award, Molecular and Cellular Cognition Society, 14th annual meeting
2015 – Chung-am Science Fellowship (for Junior Faculty), POSCO TJ Park Foundation
2015 Travel Award, Korean Society for Molecular and Cellular Biology
2015 – SNU Invitation Program for Distinguished Scholar, Seoul National University
2014 Donald B. Lindsley Prize in Behavioral Neuroscience, Society for Neuroscience
2014 Postdoctoral Fellow Travel Award, Society for Neuroscience
2014 – 2015 Life Sciences Research Foundation Postdoctoral Fellowship
2013 – 2014 Simons Postdoctoral Fellowship
2012 Brain & Cognitive Sciences Research Award, Association of Korean Neuroscientists

2012	Best Speaker Award, Samsung Scholarship Annual Meeting
2011	Poster Award, Gordon Research Conference
2011	Travel Award, Gordon Research Conference
2009 – 2013	Samsung Scholarship
2008	Best Poster Award, 9th International Congress on Cell Biology
2008	Academic Excellence Award, Seoul National University
2003 – 2008	Presidential Science Scholarship, Korea Science and Engineering Foundation

PUBLICATIONS

1. Seo, J., Choe, M. and **Kim, S. -Y.** Clearing and labeling techniques for large-scale biological tissues. (2016). *Molecules and Cells* 39(6): 439-446.
2. Murray, M., Cho, J. H., Goodwin, D., Ku, T., Swaney, J., **Kim, S. -Y.**, Choi, H., Park, J. -Y., Hubbert, A., McCue, M., Park, Y. -G., Vassallo, S., Bakh, N., Frosch, M. P., Wedeen, V. J., Seung, H. S. and Chung, K. Simple, scalable proteomic imaging for high-dimensional profiling of intact systems. (2015). *Cell* 163:1500–1514.
3. **Kim, S. -Y.**, Cho, J. H., Murray, M., Bakh, N., Choi, H., Ohn, K., Ruelas, L., Hubbert, A., McCue, M., Vassallo, S., Keller, P. J. and Chung, K. Stochastic electrotransport selectively enhances the transport of highly electromobile molecules. (2015). *Proc. Natl. Acad. Sci. U.S.A. (PNAS Plus)*, 112: E6274-E6283.
4. Bolton, A. D., Murata, Y., Kirchner, R., **Kim, S. -Y.**, Young, A., Dang, T., Yanagawa, Y. and Constantine-Paton, M. A diencephalic dopamine source provides input to the superior colliculus, where D1 and D2 receptors segregate to distinct functional zones. (2015). *Cell Reports* 13:1003-1015.
5. Adhikari, A., Lerner, T., Finkelstein, J., Pak, S., Jennings, J., Davidson, T., Ferenczi, E., Gunaydin, L. A., Mirzabekov, J. J., Ye, L., **Kim, S. -Y.**, Lei, A., and Deisseroth, K. Basomedial amygdala mediates top-down control of anxiety and fear. (2015). *Nature* 527:179-185.
6. **Kim, S. -Y.**, Chung, K. and Deisseroth, K. Light microscopy mapping of connections in the intact brain. (2013). *Trends in Cognitive Sciences* 17:596-599.
7. Chung, K., Wallace, J., **Kim, S. -Y.**, Kalyanasundaram, S., Andalman, A. S., Davidson, T. J., Mirzabekov, J. J., Zalocusky, K. A., Mattis, J., Denisin, A. K., Pak, S., Bernstein, H., Ramakrishnan, C., Grosenick, L., Gradinaru, V. and Deisseroth, K. Structural and molecular interrogation of intact biological systems. (2013). *Nature* 497:332-7.
8. **Kim, S. -Y.**, Adhikari, A., Lee, S. -Y., Marshel, J. H., Kim, C. K., Mallosy, C. S., Lo, M., Pak, S., Mattis, J., Lim, B. K., Malenka, R. C., Warden, M. R., Neve, R., Tye, K. M. and Deisseroth, K. Diverging neural pathways assemble a behavioural state from separable features in anxiety. (2013). *Nature* 496:219-23.

9. Nieh, E.H., **Kim, S. -Y.**, Namburi, P. and Tye, K. M. Optogenetic dissection of neural circuits underlying emotional valence and motivated behaviors. (2012). *Brain Research Reviews* 1511:73-92.
 10. Tye, K. M., Mirzabekov, J. J., Warden, M. R., Ferenczi, E. A., Tsai, H. -C., Finkelstein, J., **Kim, S. -Y.**, Adhikari, A., Thompson, K. R., Andalman, A. S., Gunaydin, L. A., Witten, I. B. and Deisseroth, K. (2012). Dopamine neurons modulate the neural encoding and expression of depression-related behavior. *Nature* 493:537-41.
 11. Warden, M. R., Selimbeyoglu, A., Mirzabekov, J., Lo, M., Thompson, K. R., **Kim, S. -Y.**, Adhikari, A., Tye, K. M., Frank, L. M. and Deisseroth, K. (2012). A prefrontal cortex-brainstem neuronal projection that controls response to behavioural challenge. *Nature* 492:428-32.
 12. Tye, K. M.* , Prakash, R.* , **Kim, S. -Y***, Fenno, L. E.* , Grosenick, L., Zarabi, H., Thompson, K. R., Gradinaru, V., Ramakrishnan, C. and Deisseroth, K. (2011). Amygdala circuitry mediating reversible and bidirectional control of anxiety. *Nature* 471:358-62.
- *Equal contribution**

INTELLECTUAL PROPERTIES

1. Kim, S. -Y., Deisseroth, K., Adhikari, A. (2014). Optogenetic control of behavioral state. WO 2014144409 A1
2. Chung, K., Kim, S. -Y., Ohn, K., Murray, E., Cho, J. H. (2015). Active transport of charged molecules into, within, and/or from charged matrices. WO2015154000

INVITED TALKS

- 2017 Computational Neuroscience Winter School, Korean Society for Computational Neuroscience. Pohang, Korea.
- 2016 Annual Biophotonics Conference. KAIST, Daejeon, Korea.
 23rd East Asia Joint Symposium. NTNU, Taipei, Taiwan.
 International Conference of the Korean Society for Molecular and Cellular Biology. Korea.
 Center for Functional Connectomics, KIST. Seoul, Korea.
 19th Annual Meeting, Korean Society for Brain and Neural Science. Ilsan, Korea.
 Department of Brain and Cognitive Sciences, DGIST. Daegu, Korea.
 School of Chemical and Biological Engineering, Seoul National University. Seoul, Korea.
 College of Medicine, Yonsei University. Seoul, Korea.
 30th World Congress, The International College of Neuropsychopharmacology. Seoul, Korea.
 College of Life Sciences, GIST. Gwangju, Korea.
 Department of Psychology, Korea University. Seoul, Korea.
 Zeiss Korea Microscopy Workshop. Gumi, Korea.
 School of Medicine, Seoul National University. Seoul, Korea.
 Spring Symposium, Korean Academy of Anxiety Disorder. Jeonju, Korea.
 Department of Chemistry, UNIST. Ulsan, Korea.
 Department of Life Science, Ewha Woman's University. Seoul, Korea.

- Systems Neuroscience Symposium 2016. Suwon, Korea.
 Department of Systems Biology, Yonsei University. Seoul, Korea.
 Department of Psychiatry, Seoul National University College of Medicine. Seoul, Korea
 Winter Symposium, Winter Korean Association for Laboratory Animal Science. Pyeongchang, Korea.
 Department of Biological Sciences, KAIST. Daejeon, Korea.
- 2015 Department of Brain and Cognitive Sciences, Seoul National University, Seoul, Korea.
 Center for Nanomedicine, Institute for Basic Science. Seoul, Korea.
 International Metabolic Disease Symposium. UNIST, Ulsan, Korea.
 Center for Genome Engineering, Institute for Basic Science. Seoul, Korea.
 School of Dentistry, Seoul National University. Seoul, Korea.
 Center for Neuroscience Imaging Research, Institute for Basic Science. Suwon, Korea.
 Samsung Advanced Institute of Technology. Suwon, Korea.
 Department of Chemistry, Seoul National University, Seoul, Korea.
 Department of Brain and Cognitive Sciences, Seoul National University, Seoul, Korea.
 International Conference of the Korean Society for Molecular and Cellular Biology. Korea.
 Center for Cognition and Sociality, Institute for Basic Science. Daejeon, Korea.
 Center for Neuroscience, UC Davis. Davis, CA.
 Department of Life Science, POSTECH. Pohang, Korea.
- 2014 Department of Biological Sciences, Seoul National University. Seoul, Korea.
 Department of Biological Sciences, KAIST. Daejeon, Korea.
 Department of Brain and Cognitive Sciences, Picower Institute for Learning and Memory, McGovern Institute, MIT. Joint Annual Retreat. Falmouth, MA
- 2013 Department of Biological Sciences, KAIST. Daejeon, Korea.
 36th Annual Meeting, Japanese Neuroscience Society. Kyoto, Japan.
 RIKEN Brain Science Institute. Wako, Japan.

TEACHING

- 2017 Techniques in Neurosciences (M1430.001400), Seoul National University
 2017 Optogenetic Approaches to Neuroscience (M1430.001200), Seoul National University
 2016 Advanced Genetic Engineering 2: Bio-Imaging (322.512), Seoul National University
 2016 Understanding Modern Biology (3346.210B), Seoul National University
 2016 Special Topics in Biophysics (338.701), Seoul National University
 2016 Molecular Neurobiology (3391.503), Seoul National University
 2015 Biophysics and Chemical Biology Seminar (338.505), Seoul National University
 2015 Special Topics in Chemical Biology (338.702), Seoul National University
 2014 *Instructor*. CLARITY workshop, MIT.
 2012 *Instructor*. Optogenetics Innovation Laboratory, Stanford University.
 2012 *Teaching Assistant*. Molecular and Cellular Neurobiology, Stanford University.
 2008 *Teaching Assistant*. General Chemistry, Seoul National University.

PROFESSIONAL SOCIETY MEMBERSHIPS

2015 – present Korean Society for Brain and Neural Science

2015 – present Korean Society for Molecular and Cellular Biology

2009 – present Society for Neuroscience (U.S.)