

# Research fields & Major accomplishments

## Cellular & Molecular Biomedical Sciences

### Prof. Changwon Kang

1. H. Won, W. Mah, E. Kim, J.-W. Kim, E.-K. Hahm, M.-H. Kim, S. Cho, J.-J. Kim, H. Jang, S.-C. Cho, B.-N. Kim, M.-S. Shin, J. Seo, J. Jeong, S.-Y. Choi, D. Kim, C. Kang\*, E. Kim\* "GIT1 is associated with ADHD in humans and ADHD-like behaviors in mice", *Nature Medicine* 17, 566-572 (2011)
2. Y. Sohn, C. Kang\* "Sequential multiple functions of the conserved sequence in sequence-specific termination by T7 RNA polymerase", *Proc. Natl. Acad. Sci. USA* 102, 75-80 (2005)
3. I. Shin, J. Kim, C. R. Cantor, C. Kang\* "Effects of saturation mutagenesis of the phage SP6 promoter on transcription activity, presented by activity logos", *Proc. Nat. Acad. Sci. USA* 97, 3890-3895 (2000)
4. 2012 디아이학술상(DI Award), 생화학분자생물학회(KSBMB)
5. 2011 한빛대상(Hanbit Award) 대전 MBC 및 한화그룹

### Prof. Seyun Kim

1. Kim, E., Tyagi, R., Lee, J.Y., Park, J., Kim, Y.R., Beon, J., Chen, P.Y., Cha, J.Y., Snyder, S.H. & Kim, S. " Inositol polyphosphate multikinase is a co-activator for serum response factor-dependent induction of immediate early genes", *Proc. Natl. Acad. Sci. USA*. 110, 19938-19943 (2013)
2. Lee, J.Y., Kim, Y.R., Park, J.A. & Kim, S. "Inositol polyphosphate multikinase signaling in the regulation of metabolism", *Annals of New York Academy of Sciences* 1271, 68-74 (2012)
3. Kim, S., et al. "Amino acid signaling to mTOR mediated by inositol polyphosphate multikinase", *Cell Metabolism* 13, 215-221 (2011)
4. POSCO TJ Park Science Fellowship for Junior Faculty (2013)
5. Harold Weintraub Award (2007)

### Prof. Jaehoon Kim

1. Kim, J., Kim, J.-A., McGinty, R.K., Nguyen, U.T., Muir T.W., Allis, C.D., and Roeder, R.G. "The n-SET domain of Set1 regulates H2B ubiquitylation-dependent H3K4 methylation", *Mol. Cell* 49(6), 1121-1133 (2013)
2. Kim, J., Guermah, M., and Roeder, R.G. "The human PAF1 complex acts in chromatin transcription elongation both independently and cooperatively with SII/TFIIS", *Cell* 140(4), 491-503 (2010)
3. Kim, J., Guermah, M., McGinty, R.K., Lee, J.S., Tang, Z., Milne, T.A., Shilatifard, A., Muir, T.M., and Roeder, R.G. "RAD6-mediated transcription-coupled H2B ubiquitylation directly stimulates H3K4 methylation in human cells", *Cell* 137(3), 459-471 (2009)

4. Kim, J., Hake, S.B., and Roeder R.G. "The human homolog of yeast BRE1 functions as a transcriptional coactivator through direct activator interactions", *Mol. Cell* 20(5), 759-770 (2005)
5. 2011 TJ Park Junior Faculty Fellowship

### **Prof. Chankyu Park**

1. Choi D, Ryu KS, Park C, "Structural alteration of Escherichia coli Hsp31 by thermal unfolding increases chaperone activity", *Biochim Biophys Acta.* 30 1570-9639(12)263-264.(2012)
2. Lee JY, Song J, Kwon K, Jang S, Kim C, Baek K, Kim J, Park C, "Human DJ-1 and its homologs are novel glyoxalases", *Hum Mol Genet* 21, 3215-3225 (2012)
3. Kwon M, Lee J, Lee C, Park C, "Genomic rearrangements overexpressing an aldo-keto reductase YafB of Escherichia coli confers resistance to glyoxal", *J Bacteriol* 194, 1979-1988 (2012)
4. P Subedi, D Choi, I Kim, B Min, Park C, "Hsp31 of Escherichia coli K-12 is glyoxalase III", *Mol Microbiol.* 81, 926-936 (2011)
5. Park D, Choi D, Lee J, Lim DS, Park C, "Malelike sexual behavior of female mouse lacking fucose mutarotase", *BMC Genet.* 11:62 (2010)

### **Prof. Yeonsoo Seo**

1. Bae, S. H., Kim, J. A., Bae, K. H., and Seo, Y. S., "RPA governs endonuclease switching during processing of Okazaki fragments in eukaryotes", *Nature* 412, 456-461 (2001)
2. Lee, M., Lee, C. H., Demin, A. A., Munashingha, P. R., Amangyeld, T., Kwon, B., Formosa, T., and Seo, Y. S., "Rad52/Rad59-dependent recombination as a means to rectify faulty Okazaki fragment processing", *J. Biol. Chem.* 289, 15064-15079 (2014)
3. Thu, H. P., Nguyen, T. A., Munashingha, P. R., Kwon, B., Dao Van Q., and Seo, Y. S., "A physiological significance of the functional interaction between Mus81 and Rad27 in homologous recombination repair", *Nucleic Acids Res.* 43, 1684-1699 (2015)
4. 올해의 생명공학자상(과학기술부장관, 2001)
5. 생명과학자상(분자세포생물학회, 2003)

### **Prof. Ji-Joon Song**

1. Kim, E., Lu, S.-C., Zoghbi, H.Y., Song, J.J., "Structural basis of protein complex formation and reconfiguration by polyglutamine disease protein ATAXN-1 and Capicua", *Genes & Dev.* (2013)
2. Park, J., Lammers, F., Herr, W. and Song, J.J., "HCF-1 self-association via an interdigitated Fn3 structure facilitates transcriptional regulatory complex formation", *Proc. Natl. Acad. Sci. U.S.A.* (2012)
3. Song, J. J., Smith, S. K., Hannon, G. J., Joshua-Tor, L., "Crystal structure of Argonaute and its implications for RISC Slicer activity", *Science* (2004)
4. Selected as a Young Talented Crystallographer of the World, UNESCO, UN
5. Jane Coffin Childs Memorial Fund for Medical Research Fellowship

## **Prof. Byung-Ha Oh**

1. M.-S. Kim, M. Byun, B.-H. Oh, "Crystal structure of peptidoglycan recognition protein LB of *Drosophila melanogaster*", *Nat. Immunol.* 4, 878-893 (2003)
2. Y.-G. Kim, S. Raunser, C. Munger, J. Wagner, Y.-L. Song, M. Cygler, T. Walz, B.-H. Oh\* and M. Sacher\*, "The architecture of the multisubunit TRAPP I complex suggests a novel model for vesicle tethering", *Cell* 127, 817-830 (2006) [\*co-corresponding authors]
3. J.-S. Woo, J.-H. Lim, M.-K. Suh, H.-C. Shin, K.-H. Lee, K. Joo, H. Robinson, J. Lee, S.-Y. Park, N.-C. Ha, B.-H. Oh, "Structural studies of a bacterial condensing complex reveal ATP-dependent disruption of intersubunit interactions", *Cell* 136, 85-96 (2009)
4. Y.-M. Soh#, F. Bürmann#, H.-C. Shin, T. Oda, K. S. Jin, C. P. Toseland, C. Kim, H. Lee, S. J. Kim, M.-S. Kong, M.-L. Durand-Diebold, Y.-G. Kim, H. M. Kim, N. K. Lee, M. Sato, B.-H. Oh\*, S. Gruber\*, "Molecular basis for SMC rod formation and its dissolution upon DNA binding", *Mol. Cell* 57, 290-303 (2015) [#co-first, \*corresponding authors]
5. The 11th Korea Science Award, 2008. 2. (from the Ministry of Education, Science and Technology)

## **Prof. Daeyoup Lee**

1. Lee, D., H. Sohn, G. Kalpana, and J. Choe, "Interaction of E1 protein with hSNF5 stimulates replications of human papillomavirus DNA", *Nature* 399, 487-491 (1999)
2. Lee, D., E. Ezhokova, B. Li, S. G. Pattenden, W. P. Tansey, and J. L. Workman, "The proteasome regulatory particle alters the SAGA coactivator to enhance its interactions with transcription activators", *Cell* 123, 423-436 (2005)
3. Young Sam Shim#, Yoonjung Choi#, Keunsoo Kang, Kun Cho, Seunghee Oh, Junwoo Lee, Shiv I. S. Grewal, and Daeyoup Lee\*, "Hrp3 controls nucleosome positioning to suppress non-coding transcription in eu- and heterochromatin", *EMBO J.* 31(23), 4375-4387 (2012)
4. Sungsu Lim#, Jaechan Kwak, Minhoo Kim, and Daeyoup Lee\*, "Separation of a functional deubiquitylating module from the SAGA complex by the proteasome regulatory particle", *Nat. Commun.* 4, 2641 (2013)
5. Seung-Kyoon Kim#, Hosuk Lee#, Kyumin Han, Sang Cheol Kim, Yoonjung Choi, Sang-Wook Park1, Geunu Bak, Younghoon Lee, Jung Kyoon Choi, Tae-Kyung Kim, Yong-Mahn Han\*, and Daeyoup Lee\*, "SET7/9 methylation of the pluripotency factor LIN28A is a nucleolar localization mechanism that blocks let-7 biogenesis in human ESCs", *Cell Stem Cell* 15, 735-749 (2014)

## **Prof. Won Do Heo**

1. Ki-Young Chang\*, Doyeon Woo\*, Hyunjin Jung, Taeyoon Kyung, Sangkyu Lee, Hyerim Park, Nury Kim, Hee Won Yang and Won Do Heo, "Light-inducible receptor tyrosine kinases that regulate neurotrophin signalling", *Nature Communications* 5(4057) (2014)
2. Sangkyu Lee\*, Hyerim Park\*, Taeyoon Kyung, Na Yeon Kim, Sungsoo Kim, Jihoon Kim and Won Do Heo, "Reversible protein inactivation by optogenetic trapping in cells", *Nature Methods* 11(6):633-636 (2014)
3. Hee Won Yang, Min-Gyoung Shin, Sangkyu Lee, Wei Sun Park, Jeong-Rae Kim,

Kwang-Hyun Cho, Tobias Meyer\*, and Won Do Heo\*, “Cooperative Activation of PI3K by Ras and Rho Small GTPases”, *Molecular Cell* 47(2): 281-290 (2012)

4. Won Do Heo, Takanari Inoue, Wei Sun Park, Man-Lyang Kim, Byung Ouk Park, and Tobias Meyer, “PI(3,4,5)P-3 and PI(4,5)P-2 lipids target proteins with polybasic clusters to the plasma membrane”, *Science* 314(5804): 1458-1461 (2006)

5. Won Do Heo and Tobias Meyer, “Switch-of-Function Mutants Based on Morphology Classification of Ras Superfamily Small GTPases”, *Cell (Cover Article)* 113(3), 315-328 (2003)

## Differentiation & Developmental Sciences

### Prof. Suk-Jo Kang

1. Kang, S. J., “The bloodline of CD8 $\alpha$ + dendritic cells”, *Mol Cells* 34, 219-29 (2012)

2. Yuan, W., Kang, S. J., Evans J. E., and Cresswell, P., “Natural lipid ligands associated with human CD1d targeted to different subcellular compartments”, *J Immunol* 182, 4784-91 (2009)

3. Kang, S. J., Liang, H. E., Reizis, B., and Locksley, R. M., “Regulation of hierarchical clustering and activation of innate immune cells by dendritic cells”, *Immunity* 29 819-33 (2008)

4. Reinhardt, R. L., Hong, S., Kang, S. J., Wang, Z. E., and Locksley, R. M., “Visualization of IL-12/23p40 In Vivo Reveals Immunostimulatory Dendritic Cell Migrants that Promote Th1 Differentiation”, *J Immunol* 177, 1618-27 (2006)

5. Kang, S. J. and Cresswell, P., “Saposins Facilitate CD1d-Restricted Presentation of an Exogenous Lipid Antigen to T Cells”, *Nat Immunol* 5, 175-81 (2004)

### Prof. Mi Young Kim

1. Mi Young Kim, Steven Mauro, Nicolas Gevry, John T. Lis and W. Lee Kraus “NAD<sup>+</sup>-dependent modulation of chromatin structure and transcription by nucleosome binding properties of PARP-1”, *Cell* 119, 803-814 (2004)

2. Mi Young Kim, Zhang, T. and Kraus, W.L., “Poly (ADP-ribosylation by PARP-1: “PAR-laying” NAD<sup>+</sup> into a nuclear Signal”, *Genes & Dev* 19, 1951-1967 (2005)

3. Mi Young Kim, Daria Homenko, Eileen Woo, and W. Lee Kraus, “Analysis of the mechanisms and consequences of p300-mediated acetylation of estrogen receptor  $\alpha$ ”, *Molecular Endocrinology* 20, 1479-1493 (2005)

4. Mi Young Kim, Thordur Oskarsson, Don X. Nguyen, Swarnali Acharyya, Larry Norton, and Joan Massague. Tumor self-seeding by circulating cancer cells”, *Cell* 139, 1315-1326 (2009)

5. 2010 Posco TJ Park Science Fellowship for new faculty

### Prof. Dae-Sik Lim

1. Kim M, Kim T, Johnson R and Lim D.-S., “Transcriptional co-repressor function of the Hippo pathway transducers YAP and TAZ”, *Cell Reports* 11.2, 270-282 (2015)

2. Kim M, Kim Minchul, Lee MS, Kim CH and Lim D.-S., “MST-SAV1 complex of the Hippo pathway promotes ciliogenesis”, *Nat. Commun.* 5:5370 doi (2014)

3. Kim MC, Kim MJ and Lim DS., "cAMP/PKA signaling reinforces the LATS-YAP pathway to fully suppress YAP in response to actin cytoskeletal changes", *EMBO J.* 32, 1543 - 1555 (2013)
4. Lee KP, Lee JH, Kim TS, Kim TH, Park HD, Byun JS, Kim MC, Jeong WI, Calvisi D, Kim JM, and Lim DS., "The Hippo-Salvador pathway restrains hepatic oval cell proliferation, liver size, and liver tumorigenesis", *Proc Natl Acad Sci USA.* 107(18), 8248-8253 (2010)
5. Song MS, Song SJ, Ayad NG, Chang JS, Lee JH, Hong HK, Lee H, Choi N, Kim J, Kim H, Kim JW, Choi EJ, Kirschner MW, Lim D.-S., "The tumour suppressor RASSF1A regulates mitosis by inhibiting the APC-Cdc20 complex", *Nat Cell Biol.* 6(2), 129-137 (2004)

### **Prof. Giltsu Choi**

1. Lee, N., Park, J., Kim, K., and Choi, G., "The transcriptional co-regulator LEUNIG\_HOMOLOG inhibits light-dependent seed germination", *Plant Cell*, in press (2015)
2. Sakuraba, Y., Jeong, J., Kang, M-Y., Kim, K., Paek, N-C\*, and Choi, G\*., "Phytochrome-interacting factors PIF4 and PIF5 induce leaf senescence in Arabidopsis", *Nature Communications* 5, doi, 10.1038/ncomms5636 (2014)
3. Kim, K., Shin, J. Lee, S.-H., Kweon, H.-S., Maloof, J.N., and Choi, G., "Phytochromes inhibit hypocotyl negative gravitropism by regulating the development of endodermal amyloplasts through PIFs", *PNAS* 108, 1729-1734 (2011)
4. Shin, J., Kim, K. Kang, H., Zulfugarov, I., Bae, G., Lee, C.H., Lee, D., and Choi, G. "Phytochromes promote seedling light responses by inhibiting four negatively acting phytochrome-interacting factors". *PNAS* 106, 7660-7665 (2009)
5. Oh, E. Kang, H., Yamaguchi, S. Park, J., Lee, D. Kamiya, Y., and Choi, G. "Genome-wide analysis of PIL5 direct target genes in phytochrome-mediated seed germination", *Plant Cell* 21, 403-419 (2009)

### **Prof. Yong-Mahn Han**

1. Kang YK, Koo DB, Park JS, Choi YH, Chung AS, Lee KK, Han YM, "Aberrant methylation of donor genome in cloned bovine embryos", *Nature Genetics* 28(2), 173-177 (2001)
2. Sang-Wook Park, Young Jun Koh, Jongwook Jeon, Yun-Hee Cho, Mi-Jin Jang, Yujung Kang, Min-Jeong Kim, Chulhee Choi, Yee Sook Cho, Hyung-Min Chung, Gou Young Koh, and Yong-Mahn Han, "Efficient differentiation of human pluripotent stem cells into functional CD34+ progenitor cells by combined modulation of the MEK ERK and BMP4 signaling pathways", *Blood* 116(25), 5762-5772 (2010)
3. Seung-Kyoon Kim, Hosuk Lee, Kyumin Han, Sang Cheol Kim, Yoonjung Choi, Sang-Wook Park, Geunu Bak, Younghoon Lee, Jung Kyoon Choi, Tae-Kyung Kim, Yong-Mahn Han and Daeyoup Lee (Co-corresponding), "SET7/9 Methylation of the Pluripotency Factor LIN28A Is a Nucleolar Localization Mechanism that Blocks let-7 Biogenesis in Human ESCs", *Cell Stem Cell* 15(6), 735-749 (2014)
4. Excellent Research Award, Korea Research Council of Fundamental Science & Technology (KRCF)(2001)
5. The President Award, Republic of Korea(2002)

### **Prof. Helfman, David**

1. Helfman, D.M. Niclosamide, "An established antihelminthic drug as a potential therapy against S100A4-mediated metastatic colon tumors", *J. Natl. Cancer Inst* 103, 991-992 (2011) (Invited Editorial).
2. Choi, C., Kim, D., Kim, S., Jeong, S., Song, E., Helfman, D.M. "From skeletal muscle to cancer: insights learned elucidating the function of tropomyosin", *J Struct Biol.* 177, 63-69, (2012)
3. Choi, C., and Helfman, D.M. "The Ras-ERK pathway modulates cytoskeleton organization, cell motility and lung metastasis signature genes in MDA-MB-231 LM2", *Oncogene* 33, 3668-3676 (2014)
4. Suh, J.H., Kim, H., Helfman, D.M., Choi, J.H., Lerr, B.H., Yoo, H.W., Han, Y.M., "Modeling of Menkes disease via human induced pluripotent stem cells", *Biochem Biophys Res Commun.* 444, 311-318 (2014)
5. President Fellowship Visiting Research Professor, EPFL, Lausanne, Switzerland March 2014-February 2015

## **Integrative Bio Engineering & Technology**

### **Prof. Sunchang Kim**

1. KJ Lim, BH Sung, JR Shin, YW Lee, DJ Kim, KS Yang, and SC Kim, "A cancer specific cell-penetrating peptide, BR2, for the efficient delivery of an scFv into cancer cells", *PLoS One* 8(6): e66084. (2013)
2. H Park, G Bak, SC Kim, Y Lee., "Exploring sRNA-mediated gene silencing mechanisms using artificial small RNAs derived from a natural RNA scaffold in *Escherichia coli*", *Nucleic Acids Res* 41(6): 3787-3804. (2013)
3. JR Shin, KJ Lim, DJ Kim, JH Cho, SC Kim, "Display of multimeric antimicrobial peptides on the *Escherichia coli* cell surface and its application as whole-cell antibiotics", *PLoS One* 8(3): e58997 (2013)
4. JH Lee, SC Jung, LM Bui, KH Kang, JJ Song, SC Kim., "Improved Production of L-Threonine in *Escherichia coli* by Use of a DNA Scaffold System", *Appl. Environ. Microbiol.*, 79(3): 774-782 (2013)
5. 2008 The Outstanding Research Award, KAIST

### **Prof. Jung Hoe Kim**

1. W. Y. Jeon, B. H. Yoon, B. S. Ko, W. Y. Shim and J. H. Kim, "Xylitol production is increased by expression of codon-optimized *Neurospora crassa* xylose reductase gene in *Candida tropicalis*", *Bioprocess Biosyst. Eng.* online published (2011)
2. S. Y. Park, S. H. Lee, N. Kawasaki, S. Itoh, K. S. Kang, S. H. Ryu, N. Hashii, J. M. Kim, J. Y. Kim and J. H. Kim, " $\alpha$ 1-3/4 fucosylation at Asn 241 of  $\beta$ -haptoglobin is a novel marker for colon cancer: A combinatorial approach for development of glycan biomarkers", *Int. J. Cancer* 130(10), 2366-2376 (2012)

3. Y. D. Son, Y. T. Jeong, S. Y. Park, J. H. Kim, Enhanced sialylation of recombinant human EPO in Chinese hamster ovary cells by combinatorial engineering of selected genes, *Glycobiology*, 21(8), 1019-28 (2011)
4. B. S. Ko, J. Kim, J. H. Kim, Production of xylitol from D-xylose by a xylitol dehydrogenase gene-disrupted mutant of *Candida tropicalis*, *Appl. Environ. Microbiol.*, 72(6), 4207-4213 (2006)
5. Award for Outstanding Technical Development, The Deajeon City (2008)

### **Prof. Chan Hyuk Kim**

1. Ma JS, Kim JY, Kazane SA, Choi SH, Yun HY, Kim MS, Rodgers DT, Pugh HM, Singer O, Sun SB, Fonslow BR, Kochenderfer JN, Wright TM, Schultz PG, Young TS, Kim CH, Cao Y, Versatile strategy for controlling the specificity and activity of engineered T cells, *Proc Natl Acad Sci U S A*. 113(4):E450-8, 2016
2. Kim MS, Ma JS, Yun H, Cao Y, Kim JY, Chi V, Wang D, Woods A, Sherwood L, Caballero D, Gonzalez J, Schultz PG, Young TS, Kim CH, Redirection of genetically engineered CAR-T cells using bifunctional small molecules, *J. Am. Chem. Soc.*137(8):2832-5, 2015
3. Kim CH, Axup JY, Lawson BR, Yun H, Tardif V, Choi SH, Zhou Q, Dubrovskaya A, Biroc SL, Marsden R, Pinstaff J, Smider VV, Schultz PG, Bispecific small molecule-antibody conjugate targeting prostate cancer, *Proc. Natl. Acad. Sci. U S A*. 110(44):17796-801, 2013
4. Idea Development Award, US Department of Defense (DoD), 2015
5. Translation Fund Award, Wellcome-Trust Foundation, 2013

### **Prof. Hak-Sung Kim**

1. Park et al., "Design and evolution of new catalytic activity with an existing protein scaffold", *Science* 311, 535-538 (2006)
2. Lee et al., "Design of a binding scaffold based on variable lymphocyte receptors of jawless vertebrates by module engineering", *PNAS* 108, 3299- 3304 (2012)
3. Kim et al., "A single-molecule dissection of ligand binding to a protein with intrinsic dynamics", *Nature Chemical Biology* 9, 313-318 (2013)
4. Lee et al., "Size-controlled construction of magnetic nanoparticle clusters using DNA-binding zinc finger protein", *Angewandte Chemie* 54, 923-926 (2015)
5. 2013 Korea Bio Research Achievement with high scientific value Top5, BRIC

### **Prof. Gyun Min Lee**

1. Lee, J. S. and Lee, G. M. "Rapamycin treatment inhibits CHO cell death in a serum-free suspension culture by autophagy induction", *Biotechnol. Bioeng* 109(12), 3093-102 (2012)
2. Lee, J. S. Ha, T. K. Park, J. H. and Lee, G. M. "Anti-Cell Death Engineering of CHO Cells: Co-Overexpression of Bcl-2 for Apoptosis Inhibition and Beclin-1 for Autophagy Induction", *Biotechnol. Bioeng* 110(8), 2195-207 (2013)
3. M. Sathyamurthy. Kim, C. L. Bang, Y. L. Kim, Y. S. Jang, J. W. and Lee, G. M. "Characterization and Expression of Proprotein Convertases in CHO Cells: Efficient Proteolytic Maturation of Human Bone Morphogenetic Protein-7", *Biotechnol. Bioeng* 112(3), 560-568 (2014)
4. Ha, T. K. Kim, Y. G. and Lee, G. M. "Understanding of Altered N-glycosylation-Related Gene

Expression in Recombinant Chinese Hamster Ovary Cells Subjected to Elevated Ammonium Concentration by Digital mRNA Counting”, *Biotechnol. Bioeng.* 112(8), 1583-1593 (2015)

5. 이전기술명 : 동물세포배양을 위한 무혈청배지 개발기술 (2013)

### **Prof. Sangyong Jon**

1. Kim D, Lee IH, Kim S, Choi M, Kim H, Ahn S, Saw PE, Jeon H, Lee Y, **Jon S.**, “specific STAT3-binding peptide exerts anti-proliferative effects and antitumor activity by inhibiting STAT3 phosphorylation and signaling”, *Cancer Research* 74, 2144-2151 (2014)

2. Lee IH, Kwon HK, An S, Kim D, Kim S, Yu MK, Lee JH, Lee TS, Im SH, **Jon S.**, “Imageable Antigen-Presenting Gold Nanoparticle Vaccines for Effective Cancer Immunotherapy In Vivo”, *Angew. Chem. Int. Ed.* 51, 8800-8805 (2012)

3. Kim S, Kim D, Jung HH, Lee IH, Kim JI, Suh JY, **Jon S.**, “Bio-inspired Design and Potential Biomedical Applications of a Novel Class of High Affinity Peptide”, *Angew. Chem. Int. Ed.* 51 (2012)

4. 2015 College of Fellow, American Institute of Medical and Biological Engineering

5. 2015 The Most Cited Paper Award, ‘Theranostics’ Journal (IVY Spring International Publisher)

### **Prof. Byung-Kwan Cho**

1. Cho, B.-K., Zengler, K., Qiu, Y., Knight, E.M., Park, Y.S., Barrett, C.L., Gao, Y., and Palsson, B.O., “The transcription unit architecture of the *Escherichia coli* K-12 MG1655 genome”, *Nature Biotechnol.* 27(11), 1043-1049 (2009) (Featured on the cover article)

2. Cho, B.-K., Federowicz, S., Park, Y.S., Zengler, K., and Palsson, B.O., “Deciphering the transcriptional regulatory logic of metabolism”, *Nature Chem. Biol.* 8(1), 65-71 (2012)

3. Cho, S., Cho, Y.B., Kang, T.J., Kim, S.C., Palsson, B.O., and Cho, B.-K., “The architecture of ArgR-DNA complexes at the genome-scale in *Escherichia coli*”, *Nucleic Acids Res.* 43(6), 3079-3088 (2015)

4. 2013 Honor from the Ministry of Science, ICT and Future Planning

5. 2012 Young Scientist, DAVOS forum

## **Neuroscience**

### **Prof. Daesoo Kim**

1. Jo, S., Yarishkin, O., Hwang, Y. J., Chun, Y. E., Park, M., Woo, D. H., Bae, J. Y., Kim, T., Lee, J., Chun, H., Park, H. J., Lee, D. Y., Hong, J., Kim, H. Y., Oh, S. J., Park, S. J., Lee, H., Yoon, B. E., Kim, Y., Jeong, Y., Shim, I., Bae, Y. C., Cho, J., Kowall, N. W., Ryu, H., Hwang, E., Kim, D., Lee, C. J. “GABA from reactive astrocytes impairs memory in mouse models of Alzheimer’s disease”. *Nature Medicine* 20:886-96 (2014)

2. Kim, J., Woo, J., Park, YG., Chae, S., Jo, S., Choi, JW., Jun, HY., Yeom, YI., Park, SH., Kim, KH., Shin, HS., Kim, D. “Thalamic T-Type Ca<sup>2+</sup> Channels Mediate Frontal Lobe Dysfunctions Caused by a Hypoxia-Like Damage in the Prefrontal Cortex”, *Journal of Neuroscience* 31:4063-4073 (2011)



3. Park, YG., Park, HY., Lee, CJ., Choi, S., Jo, S., Choi, H., Kim, YH., Shin, HS., Llinas, RR., Kim, D. "CaV3.1 is a tremor rhythm pacemaker in the inferior olive", *Proc Natl Acad Sci USA*, 107:10731-6 (2010)
4. Kim, D., Park, D., Choi, S., Lee, S., Sun, M., Kim, C., Shin, H. S. "Thalamic control of visceral nociception mediated by T-type Ca<sup>2+</sup> channels." *Science* 302(5642): 117-119 (2003)
5. Kim, D., Song, I., Keum, S., Lee, T., Jeong, M. J., Kim, S. S., McEnery, M. W., Shin, H. S. "Lack of the burst firing of thalamocortical relay neurons and resistance to absence seizures in mice lacking alpha(1G) T-type Ca<sup>2+</sup> channels" *Neuron* 31(1): 35-45 (2001)

### **Prof. Eunjoon Kim**

1. Chung W, Choi SY, Lee E, Park H, Kang J, Park H, Choi Y, Lee D, Park SG, Kim R, Cho YS, Choi J, Kim MH, Lee JW, Lee S, Rhim I, Jung MH, Kim D, Bae YC, and Kim E\*, "Social deficits in IRSp53 mutant mice improved by NMDAR and mGluR5 suppression", *Nature Neuroscience* 18, 435-443 (2015)
2. Won H, Lee HR, Gee HY, Mah W, Kim JI, Lee J, Ha S, Chung C, Jung ES, Cho YS, Park SG, Lee JS, Lee K, Kim D, Bae YC, Kaang BK\*, Lee MG\*, and Kim E\*, "Autistic-like social behavior in Shank2-mutant mice improved by restoring NMDA receptor function", *Nature* 486, 261-265 (2012)
3. Won H, Mah W, Kim E, Kim JW, Hahm EK, Kim MH, Cho S, Kim JJ, Jang H, Cho SC, Kim BN, Shin MS, Seo J, Jeong J, Choi SY, Kim D, Kang C\*, and Kim E\*, "GIT1 is associated with attention deficit/hyperactivity disorder (ADHD) and ADHD-like behaviors in mice", *Nature Medicine* 17, 566-572 (2011)
4. 2013. POSCO TJ Park Prize, POSCO
5. 2012. Incheon Award, Dong-A Ilbo

### **Prof. Jin Woo Kim**

1. Kim NS, Min KW, Kang KH, Lee EJ, Kim HT, Moon K, Choi J, Le D, Lee SH, Kim JW., "Regulation of retinal axon growth by secreted Vax1 homeodomain protein", *Elife* 3: e02671 (2014)
2. Bernard C, Kim HT, Torero Ibad R, Lee EJ, Simonutti M, Picaud S, Acampora D, Simeone A, Di Nardo AA, Prochiantz A, Moya KL, Kim JW., "Graded Otx2 activities demonstrate dosesensitive eye and retina phenotypes", *Hum Mol Genet* 23: 1742 - 1753 (2014)
3. Jo HS, Kang KH, Joe CO, Kim JW. "Pten coordinates retinal neurogenesis by regulating Notch signalling", *EMBO J.* 31: 817 - 828 (2012)
4. Kim JW\*, Kang KH, Burrola P, Mak TW, Lemke G\* "Retinal degeneration triggered by inactivation of PTEN in the retinal pigment epithelium", *Genes Dev* 22: 3147 - 3157 (2008) (\*, co-corresponding authors)
5. Kim JW, Lemke G. "Hedgehog-regulated localization of Vax2 controls eye development", *Genes Dev* 20: 2833 - 2847 (2006)

### **Prof. Jong-Woo Sohn**

1. Kim HH, Lee KH, Lee D, Lee SH, Sohn JW\*, Ho WK\*, "Costimulation of AMPA and

- metabotropic glutamate receptors underlies PLC activation by glutamate in hippocampus”, *Journal of Neuroscience* 35(16): 6401-6412 (2015)
2. Sohn JW, Elmquist JK, Williams KW, “Neuronal circuits that regulate feeding behavior and metabolism”, *Trends in Neurosciences* 36(9), 504-512 (2013) (Review)
  3. Sohn JW, Harris LE, Berglund ED, Liu T, Vong L, Lowell BB, Balthasar N, Williams KW, Elmquist JK, “Melanocortin 4 receptors reciprocally regulate sympathetic and parasympathetic preganglionic neurons”, *Cell* 152(3): 612-619 (2013)
  4. Sohn JW, Xu Y, Jones JE, Wickman K, Williams KW, Elmquist JK, “Serotonin 2C receptor activates a distinct population of arcuate pro-opiomelanocortin neurons via TRPC channels”, *Neuron* 71(3): 488-497 (2011)
  5. 2015 POSCO TJ Park Science Fellowship for Junior Faculty

### **Prof. Seung-Hee Lee**

1. Lee, S.-H., Kwan, A.C., Dan, Y., “Interneuron subtypes and orientation tuning”, *Nature* 508, E1-2. (2014)
2. Lee, S.-H., Dan, Y., “Neuromodulation of brainstates”, *Neuron* 76, 209-222 (2012)
3. Lee, S.-H., Kwan, A.C., Zhang, S., Phoumthippavong, V., Flannery, J.G., Masmanidis, S.C., Taniguchi, H., Huang, Z.J., Boyden, E.S., Deisseroth, K., and Dan, Y., “Activation of specific interneurons improves V1 feature selectivity and visual perception”, *Nature* 488, 379-383 (2012)
4. 2014 JNS Travel Award for Young Scientists, Korean Society for Brain and Neural Science & Japan Neuroscience Society, Japan (2014)
5. NARSAD Young Investigator Award, Brain & Behavior Research Foundation, USA (2013)

### **Prof. Min Whan Jung**

1. Lee D, Seo H, Jung MW, “Neural basis of reinforcement learning and decision making”, *Ann. Rev. Neurosci.* 21:35:287-308 (2012)
2. Sul JH, Jo S, Lee D, Jung MW, “Role of rodent secondary motor cortex in value-based action selection”, *Nature Neurosci.* 14:14(9):1202-1208 (2011)
3. Sul JH, Kim H, Huh N, Lee D, Jung MW, “Distinct roles of rodent orbitofrontal and medial prefrontal cortex in decision making”, *Neuron.* 13:66(3):449-460 (2010)
4. Baeg EH, Kim YB, Huh K, Mook-Jung I, Kim HT, Jung MW, “Dynamics of population code for working memory in the prefrontal cortex” *Neuron* 40(1):177-188 (2003)
5. 2013 KSBNS The 1st Joseph Jang Research Award

### **Prof. Kyung Ok Cho**

1. Lee, O.-K., Frese, K.K., James, J.S., Chadda, D., Chen, Z.-H., Javier, R., and Cho, K.-O. “Discs-large and Strabismus are functionally linked to plasma membrane formation”, *Nature Cell Biol.* 5, 987-993 (2003)
2. Cho, K.-O., “Wolbachia bacteria, the cause for false vesicular staining pattern in *Drosophila melanogaster*”, *Gene Exp. patt.* 5, 167-170 (2004).
3. Cho, K.-O., Kim, G.-W., and Lee, O.-K, “Wolbachia bacteria reside in host Golgi-related

vesicles whose position is regulated by polarity proteins”, Plos One. 6(7): e22703 (2011)

### **Prof. Kwang-Wook Choi**

1. Cho, K.-O. and Choi, K.-W., “Fringe is essential for mirror symmetry and morphogenesis in the Drosophila eye”, Nature 396, 272-276 (1998)
2. Izaddoost, S., Nam, S-C, Bhat, MA, Bellen, HJ, Choi, K-W., “Drosophila Crumbs is a positional cue in photoreceptor adherens junctions and rhabdomeres”, Nature 416, 178-183 (2002)
3. Hsu, Y-C, Chern, J, Cai, Y, Liu, M and Choi, K-W., “Drosophila TCTP is essential for growth and proliferation through regulation of dRheb GTPase”, Nature 445, 785-788 (2007)
4. Hong, S.-T. and Choi, K.-W. “TCTP directly regulates ATM activity to control genome stability and organ development in Drosophila melanogaster”, Nature Comms. DOI:10.1038/ncomms3986, 1-14 (2013)
5. Yeom, E., Hong, S.T., and Choi, K.-W. “Crumbs interacts with Xpd for nuclear division control in Drosophila”, Oncogene 34, 2777-2789 (2015)

### **Prof. Joonho Choe**

1. Lee D, Sohn H, Kalpana GV, **Choe J.**, “Interaction of E1 protein with hSNF5 stimulates replication of human papillomavirus DNA”, Nature 399, 487-491 (1999)
2. Lim C, Chung BY, Pitman JL, McGill JJ, Pradhan S, Lee J, Keegan KP, **Choe J.**, Allada R. “clockwork orange encodes a transcriptional repressor important for circadian-clock amplitude in Drosophila”, Current Biol. 17, 1082-1089 (2007)
3. Lim C, Lee J, Choi C, Kilman VL, Kim J, Park SM, Jang SK, Allada R, **Choe J.**, “The novel gene twenty-four defines a critical translation step in the Drosophila clock”. Nature 470, 399-403 (2011)
4. 2011 ““Scientist of the Month” from the National Research Foundation, Korea.
5. 2012 ““National Academy of Sciences Award”” from the National Academy of Sciences, Korea.

### **Prof. Jin-Hee Han**

1. Kwon J-T, Nakajima R, Kim H-S, Jeong Y, Augustine GJ, Han J-H., “Optogenetic activation of presynaptic inputs in lateral amygdala forms associative fear memory”, Learn. Mem. 21, 627-633 (cover article) (2014)
2. Kim J\*, Kwon J-T\*, Kim H-S, Josselyn SA, and Han J-H., “Memory recall and modifications by activating neurons with elevated CREB”, Nat. Neurosci. 17(1), 65-72 (2014)
3. Han J-H, Kushner SA, Hsiang HL, Yiu AP, Buch T, Waisman A, Bontempi B, Neve RL, Frankland PW, Josselyn SA., “Selective erasure of a fear memory”, Science 323, 1492-1496. ‘exceptional by Faculty of 1000’ (2009)
4. Han J-H, Kushner SA, Yiu AP, Cole CA, Matynia A, Brown RA, Neve R, Guzowski JF, Silva AJ, Josselyn SA. “Neuronal competition and selection during memory formation”, Science 316, 457-460. ‘must read by Faculty of 1000’ (2007)
5. Bessemer Science Fellowship from POSCO TJ Park Foundation (2009)

## **Prof. Jones, Walton**

1. Suh YS et al., "Genome-wide microRNA screening reveals that the evolutionary conserved miR-9a regulates body growth by targeting sNPF1/NPYR", *Nat Comms* 6(7693) (2015)
2. Jones, W.D., Volkan, P.C., Kadow, I.G., and Vosshall, L.B., "Two chemosensory receptors together mediate carbon dioxide detection in *Drosophila*", *Nature* 445(7123), 86-90 (2007)
3. Jones, W.D., Nguyen, T.-A. T., Kloss, B., Lee, K.J., and Vosshall, L.B.. "Functional conservation of an insect odorant receptor gene across 250 million years of evolution", *Curr Biol* 15(4), R119-R121 (2005)
4. Larsson, M.C. et al., "Or83b encodes a broadly expressed odorant receptor essential for *Drosophila* olfaction", *Neuron* 43(5), 703-714 (2004)
5. KAIST Grand Prize for Creative Teaching (2011)

## **Prof. Won-Suk Chung**

1. Chung WS\*, Welsh CA\*, Barres BA and Stevens B. "Do glia drive synaptic and cognitive impairment in disease?". *Nature Neurosci.* 18(11):1539-1545 (2015) (\* Equally contributed).
2. Chung WS, Allen NJ and Eroglu C. "Glia Monograph: Astrocytes Control Synapse Formation, Function, and Elimination". Cold Spring Harbor Laboratory Press. 7(9) 2015.
3. Chung WS+, Clarke LE\*, Wang GX\*, Stafford BK, Sher A, Chakraborty C, Joung J, Foo LC, Thompson A, Chen C, Smith SJ and Barres BA. "Astrocytes mediate synapse elimination through MEGF10 and MERTK pathways". *Nature (Article)*. 504(7480):394-400 (+Corresponding author, \* Equally contributed). 2013.
4. 2014-2016: NIH Pathway to Independence Award (K99) from NEI (PI: Won-Suk Chung)
5. 2009-2012: Postdoctoral fellowship Award from Damon Runyon Cancer Research Foundation

#### 강창원 교수님

1. H. Won, W. Mah, E. Kim, J.-W. Kim, E.-K. Hahm, M.-H. Kim, S. Cho, J.-J. Kim, H. Jang, S.-C. Cho, B.-N. Kim, M.-S. Shin, J. Seo, J. Jeong, S.-Y. Choi, D. Kim, C. Kang\*, E. Kim\* "GIT1 is associated with ADHD in humans and ADHD-like behaviors in mice" *Nature Medicine* 17, 566-572 (2011)
2. Y. Sohn, C. Kang\* "Sequential multiple functions of the conserved sequence in sequence-specific termination by T7 RNA polymerase" *Proc. Natl. Acad. Sci. USA* 102, 75-80 (2005)
3. I. Shin, J. Kim, C. R. Cantor, C. Kang\* "Effects of saturation mutagenesis of the phage SP6 promoter on transcription activity, presented by activity logos" *Proc. Nat. Acad. Sci. USA* 97, 3890-3895 (2000)
4. 2012 디아이학술상(DI Award), 생화학분자생물학회(KSBMB)
5. 2011 한빛대상(Hanbit Award) 대전 MBC 및 한화그룹

#### 김대수 교수님

1. Jo, S., Yarishkin, O., Hwang, Y. J., Chun, Y. E., Park, M., Woo, D. H., Bae, J. Y., Kim, T., Lee, J., Chun, H., Park, H. J., Lee, D. Y., Hong, J., Kim, H. Y., Oh, S. J., Park, S. J., Lee, H., Yoon, B. E., Kim, Y., Jeong, Y., Shim, I., Bae, Y. C., Cho, J., Kowall, N. W., Ryu, H., Hwang, E., Kim, D., Lee, C. J. "GABA from reactive astrocytes impairs memory in mouse models of Alzheimer's disease". *Nature Medicine* 20:886-96 (2014)
2. Kim, J., Woo, J., Park, YG., Chae, S., Jo, S., Choi, JW., Jun, HY., Yeom, YI., Park, SH., Kim, KH., Shin, HS., Kim, D. "Thalamic T-Type Ca<sup>2+</sup> Channels Mediate Frontal Lobe Dysfunctions Caused by a Hypoxia-Like Damage in the Prefrontal Cortex", *Journal of Neuroscience* 31:4063-4073 (2011)

3. Park, YG., Park, HY., Lee, CJ., Choi, S., Jo, S., Choi, H., Kim, YH., Shin, HS., Llinas, RR., Kim, D. "CaV3.1 is a tremor rhythm pacemaker in the inferior olive", Proc Natl Acad Sci USA, 107:10731-6 (2010)
4. Kim, D., Park, D., Choi, S., Lee, S., Sun, M., Kim, C., Shin, H. S. "Thalamic control of visceral nociception mediated by T-type Ca<sup>2+</sup> channels." Science 302(5642): 117-119 (2003)
5. Kim, D., Song, I., Keum, S., Lee, T., Jeong, M. J., Kim, S. S., McEnery, M. W., Shin, H. S. "Lack of the burst firing of thalamocortical relay neurons and resistance to absence seizures in mice lacking alpha(1G) T-type Ca<sup>2+</sup> channels" Neuron 31(1): 35-45 (2001)

#### 김세윤 교수님

1. Kim, E., Tyagi, R., Lee, J.Y., Park, J., Kim, Y.R., Beon, J., Chen, P.Y., Cha, J.Y., Snyder, S.H. & Kim, S. Inositol polyphosphate multikinase is a co-activator for serum response factor-dependent induction of immediate early genes. Proc. Natl. Acad. Sci. USA. 110, 19938-19943 (2013)
2. Lee, J.Y., Kim, Y.R., Park, J.A. & Kim, S. Inositol polyphosphate multikinase signaling in the regulation of metabolism. Annals of New York Academy of Sciences 1271, 68-74 (2012)
3. Kim, S., et al. Amino acid signaling to mTOR mediated by inositol polyphosphate multikinase. Cell Metabolism 13, 215-221 (2011)
4. POSCO TJ Park Science Fellowship for Junior Faculty (2013)
5. Harold Weintraub Award (2007)

#### 김은준 교수님

1. Chung W, Choi SY, Lee E, Park H, Kang J, Park H, Choi Y, Lee D, Park SG, Kim R, Cho YS, Choi J, Kim MH, Lee JW, Lee S, Rhim I, Jung MH, Kim D, Bae YC, and Kim E\*. "Social deficits in IRSp53 mutant mice improved by NMDAR and mGluR5 suppression" Nature Neuroscience 18, 435-443 (2015)
2. Won H, Lee HR, Gee HY, Mah W, Kim JI, Lee J, Ha S, Chung C, Jung ES, Cho YS, Park SG, Lee JS, Lee K, Kim D, Bae YC, Kaang BK\*, Lee MG\*, and Kim E\*. "Autistic-like social behavior in Shank2-mutant mice improved by restoring NMDA receptor function" Nature 486, 261-265 (2012)
3. Won H, Mah W, Kim E, Kim JW, Hahm EK, Kim MH, Cho S, Kim JJ, Jang H, Cho SC, Kim BN, Shin MS, Seo J, Jeong J, Choi SY, Kim D, Kang C\*, and Kim E\*. "GIT1 is associated with attention deficit/hyperactivity disorder (ADHD) and ADHD-like behaviors in mice" Nature Medicine 17, 566-572 (2011)
4. 2013. POSCO TJ Park Prize, POSCO
5. 2012. Incheon Award, Dong-A Ilbo

#### 김재훈 교수님

1. Kim, J., Kim, J-A., McGinty, R.K., Nguyen, U.T., Muir T.W., Allis, C.D., and Roeder, R.G. "The n-SET domain of Set1 regulates H2B ubiquitylation-dependent H3K4 methylation", Mol. Cell 49(6), 1121-1133 (2013)
2. Kim, J., Guermah, M., and Roeder, R.G. "The human PAF1 complex acts in chromatin transcription elongation both independently and cooperatively with SII/TFIIS", Cell 140(4),

491-503 (2010)

3. Kim, J., Guermah, M., McGinty, R.K., Lee, J.S., Tang, Z., Milne, T.A., Shilatifard, A., Muir, T.M., and Roeder, R.G. "RAD6-mediated transcription-coupled H2B ubiquitylation directly stimulates H3K4 methylation in human cells", *Cell* 137(3), 459-471 (2009)
4. Kim, J., Hake, S.B., and Roeder R.G. "The human homolog of yeast BRE1 functions as a transcriptional coactivator through direct activator interactions", *Mol. Cell* 20(5), 759-770 (2005)
5. 2011 TJ Park Junior Faculty Fellowship

#### 김진우 교수님

1. Kim NS, Min KW, Kang KH, Lee EJ, Kim HT, Moon K, Choi J, Le D, Lee SH, Kim JW. "Regulation of retinal axon growth by secreted Vax1 homeodomain protein". *Elife* 3: e02671 (2014)
2. Bernard C, Kim HT, Torero Ibad R, Lee EJ, Simonutti M, Picaud S, Acampora D, Simeone A, Di Nardo AA, Prochiantz A, Moya KL, Kim JW. "Graded Otx2 activities demonstrate dosesensitive eye and retina phenotypes" *Hum Mol Genet* 23: 1742 - 1753 (2014)
3. Jo HS, Kang KH, Joe CO, Kim JW. "Pten coordinates retinal neurogenesis by regulating Notch signalling", *EMBO J.* 31: 817 - 828 (2012)
4. Kim JW\*, Kang KH, Burrola P, Mak TW, Lemke G\* "Retinal degeneration triggered by inactivation of PTEN in the retinal pigment epithelium", *Genes Dev* 22: 3147 - 3157 (2008) (\*, co-corresponding authors)
5. Kim JW, Lemke G. "Hedgehog-regulated localization of Vax2 controls eye development", *Genes Dev* 20: 2833 - 2847 (2006)

#### 김학성 교수님

1. Park et al. Design and evolution of new catalytic activity with an existing protein scaffold, *Science*, 311, 535-538 (2006)
2. Lee et al., Design of a binding scaffold based on variable lymphocyte receptors of jawless vertebrates by module engineering, *PNAS*, 108, 3299- 3304 (2012)
3. Kim et al., A single-molecule dissection of ligand binding to a protein with intrinsic dynamics, *Nature Chemical Biology*, 9, 313-318 (2013)
4. Lee et al., Size-controlled construction of magnetic nanoparticle clusters using DNA-binding zinc finger protein, *Angewandte Chemie*, 54, 923-926 (2015)
5. 2013 Korea Bio Research Achievement with high scientific value Top5, BRIC

#### 서연수 교수님

1. Bae, S. H., Kim, J. A., Bae, K. H., and Seo, Y. S. "RPA governs endonuclease switching during processing of Okazaki fragments in eukaryotes", *Nature* 412, 456-461 (2001)
2. Lee, M., Lee, C. H., Demin, A. A., Munashingha, P. R., Amangyeld, T., Kwon, B., Formosa, T., and Seo, Y. S. "Rad52/Rad59-dependent recombination as a means to rectify faulty Okazaki fragment processing", *J. Biol. Chem.* 289, 15064-15079 (2014)
3. Thu, H. P., Nguyen, T. A., Munashingha, P. R., Kwon, B., Dao Van Q., and Seo, Y. S. "A physiological significance of the functional interaction between Mus81 and Rad27 in

homologous recombination repair”, *Nucleic Acids Res.* 43, 1684-1699 (2015)

4. 올해의 생명공학자상(과학기술부장관, 2001)

5. 생명과학자상(분자세포생물학회, 2003)

#### 손종우 교수님

1. Kim HH, Lee KH, Lee D, Lee SH, Sohn JW\*, Ho WK\*, “Costimulation of AMPA and metabotropic glutamate receptors underlies PLC activation by glutamate in hippocampus”, *Journal of Neuroscience* 35(16): 6401-6412 (2015)

2. Sohn JW, Elmquist JK, Williams KW, “Neuronal circuits that regulate feeding behavior and metabolism”, *Trends in Neurosciences* 36(9), 504-512 (2013) (Review)

3. Sohn JW, Harris LE, Berglund ED, Liu T, Vong L, Lowell BB, Balthasar N, Williams KW, Elmquist JK, “Melanocortin 4 receptors reciprocally regulate sympathetic and parasympathetic preganglionic neurons”, *Cell* 152(3): 612-619 (2013)

4. Sohn JW, Xu Y, Jones JE, Wickman K, Williams KW, Elmquist JK, “Serotonin 2C receptor activates a distinct population of arcuate pro-opiomelanocortin neurons via TRPC channels”, *Neuron* 71(3): 488-497 (2011)

5. 2015 POSCO TJ Park Science Fellowship for Junior Faculty

#### 송지준 교수님

1. Kim, E., Lu, S.-C., Zoghbi, H.Y., Song, J.J., “Structural basis of protein complex formation and reconfiguration by polyglutamine disease protein ATAXN-1 and Capicua”, *Genes & Dev.* (2013)

2. Park, J., Lammers, F., Herr, W. and Song, J.J., “HCF-1 self-association via an interdigitated Fn3 structure facilitates transcriptional regulatory complex formation”, *Proc. Natl. Acad. Sci. U.S.A.* (2012)

3. Song, J. J., Smith, S. K., Hannon, G. J., Joshua-Tor, L., “Crystal structure of Argonaute and its implications for RISC Slicer activity”. *Science* (2004)

4. Selected as a Young Talented Crystallographer of the World, UNESCO, UN

5. Jane Coffin Childs Memorial Fund for Medical Research Fellowship

#### 오병하 교수님

1. M.-S. Kim, M. Byun, B.-H. Oh, “Crystal structure of peptidoglycan recognition protein LB of *Drosophila melanogaster*”, *Nat. Immunol.* 4, 878-893 (2003)

2. Y.-G. Kim, S. Raunser, C. Munger, J. Wagner, Y.-L. Song, M. Cygler, T. Walz, B.-H. Oh\* and M. Sacher\*, “The architecture of the multisubunit TRAPP I complex suggests a novel model for vesicle tethering”, *Cell* 127, 817-830 (2006) [\*co-corresponding authors]

3. J.-S. Woo, J.-H. Lim, M.-K. Suh, H.-C. Shin, K.-H. Lee, K. Joo, H. Robinson, J. Lee, S.-Y. Park, N.-C. Ha, B.-H. Oh, “Structural studies of a bacterial condensing complex reveal ATP-dependent disruption of intersubunit interactions”, *Cell* 136, 85-96 (2009)

4. Y.-M. Soh#, F. Bürmann#, H.-C. Shin, T. Oda, K. S. Jin, C. P. Toseland, C. Kim, H. Lee, S. J. Kim, M.-S. Kong, M.-L. Durand-Diebold, Y.-G. Kim, H. M. Kim, N. K. Lee, M. Sato, B.-H. Oh\*, S. Gruber\*, “Molecular basis for SMC rod formation and its dissolution upon DNA binding”, *Mol. Cell* 57, 290-303 (2015) [#co-first, \*corresponding authors]



5. The 11th Korea Science Award, 2008. 2. (from the Ministry of Education, Science and Technology)

#### 이균민 교수님

1. Lee, J. S. and Lee, G. M. "Rapamycin treatment inhibits CHO cell death in a serum-free suspension culture by autophagy induction", *Biotechnol. Bioeng* 109(12), 3093-102 (2012)
2. Lee, J. S. Ha, T. K. Park, J. H. and Lee, G. M. "Anti-Cell Death Engineering of CHO Cells: Co-Overexpression of Bcl-2 for Apoptosis Inhibition and Beclin-1 for Autophagy Induction", *Biotechnol. Bioeng* 110(8), 2195-207 (2013)
3. M. Sathyamurthy. Kim, C. L. Bang, Y. L. Kim, Y. S. Jang, J. W. and Lee, G. M. "Characterization and Expression of Proprotein Convertases in CHO Cells: Efficient Proteolytic Maturation of Human Bone Morphogenetic Protein-7", *Biotechnol. Bioeng* 112(3), 560-568 (2014)
4. Ha, T. K. Kim, Y. G. and Lee, G. M. "Understanding of Altered N-glycosylation-Related Gene Expression in Recombinant Chinese Hamster Ovary Cells Subjected to Elevated Ammonium Concentration by Digital mRNA Counting", *Biotechnol. Bioeng.* 112(8), 1583-1593 (2015)
5. 이전기술명 : 동물세포배양을 위한 무혈청배지 개발기술 (2013)

#### 이대엽 교수님

1. Lee, D., H. Sohn, G. Kalpana, and J. Choe "Interaction of E1 protein with hSNF5 stimulates replications of human papillomavirus DNA", *Nature* 399, 487-491 (1999)
2. Lee, D., E. Ezhokova, B. Li, S. G. Pattenden, W. P. Tansey, and J. L. Workman, "The proteasome regulatory particle alters the SAGA coactivator to enhance its interactions with transcription activators" *Cell* 123, 423-436 (2005)
3. Young Sam Shim#, Yoonjung Choi#, Keunsoo Kang, Kun Cho, Seunghee Oh, Junwoo Lee, Shiv I. S. Grewal, and Daeyoup Lee\* "Hrp3 controls nucleosome positioning to suppress non-coding transcription in eu- and heterochromatin", *EMBO J.* 31(23), 4375-4387 (2012)
4. Sungsu Lim#, Jaechan Kwak, Minhoo Kim, and Daeyoup Lee\* "Separation of a functional deubiquitylating module from the SAGA complex by the proteasome regulatory particle" *Nat. Commun.* 4, 2641 (2013)
5. Seung-Kyoon Kim#, Hosuk Lee#, Kyumin Han, Sang Cheol Kim, Yoonjung Choi, Sang-Wook Park1, Geunu Bak, Younghoon Lee, Jung Kyoon Choi, Tae-Kyung Kim, Yong-Mahn Han\*, and Daeyoup Lee\* "SET7/9 methylation of the pluripotency factor LIN28A is a nucleolar localization mechanism that blocks let-7 biogenesis in human ESCs", *Cell Stem Cell* 15, 735-749 (2014)

#### 이승희 교수님

1. Lee, S.-H., Kwan, A.C., Dan, Y. "Interneuron subtypes and orientation tuning", *Nature.* 508, E1-2. (2014).
2. Lee, S.-H., Dan, Y. "Neuromodulation of brainstates", *Neuron.* 76, 209-222 (2012)
3. Lee, S.-H., Kwan, A.C., Zhang, S., Phoumthippavong, V., Flannery, J.G., Masmanidis, S.C., Taniguchi, H., Huang, Z.J., Boyden, E.S., Deisseroth, K., and Dan, Y. "Activation of specific interneurons improves V1 feature selectivity and visual perception", *Nature.* 488, 379-383 (2012)

4. 2014 JNS Travel Award for Young Scientists, Korean Society for Brain and Neural Science & Japan Neuroscience Society, Japan
5. 2013 NARSAD Young Investigator Award, Brain & Behavior Research Foundation, USA

#### 임대식 교수님

1. Kim M, Kim T, Johnson R and Lim D.-S. "Transcriptional co-repressor function of the Hippo pathway transducers YAP and TAZ", *Cell Reports* 11.2, 270-282 (2015)
2. Kim M, Kim Minchul, Lee MS, Kim CH and Lim D.-S. "MST-SAV1 complex of the Hippo pathway promotes ciliogenesis", *Nat. Commun.* 5:5370 doi (2014)
3. Kim MC, Kim MJ and Lim DS. "cAMP/PKA signaling reinforces the LATS-YAP pathway to fully suppress YAP in response to actin cytoskeletal changes", *EMBO J.* 32, 1543 - 1555 (2013)
4. Lee KP, Lee JH, Kim TS, Kim TH, Park HD, Byun JS, Kim MC, Jeong WI, Calvisi D, Kim JM, and Lim DS. "The Hippo-Salvador pathway restrains hepatic oval cell proliferation, liver size, and liver tumorigenesis", *Proc Natl Acad Sci USA.* 107(18), 8248-8253 (2010)
5. Song MS, Song SJ, Ayad NG, Chang JS, Lee JH, Hong HK, Lee H, Choi N, Kim J, Kim H, Kim JW, Choi EJ, Kirschner MW, Lim D.-S. "The tumour suppressor RASSF1A regulates mitosis by inhibiting the APC-Cdc20 complex", *Nat Cell Biol.* 6(2), 129-137 (2004)

#### 전상용 교수님

1. Kim D, Lee IH, Kim S, Choi M, Kim H, Ahn S, Saw PE, Jeon H, Lee Y, **Jon S.** "specific STAT3-binding peptide exerts anti-proliferative effects and antitumor activity by inhibiting STAT3 phosphorylation and signaling", *Cancer Research* 74, 2144-2151 (2014)
2. Lee IH, Kwon HK, An S, Kim D, Kim S, Yu MK, Lee JH, Lee TS, Im SH, **Jon S.** "Imageable Antigen-Presenting Gold Nanoparticle Vaccines for Effective Cancer Immunotherapy In Vivo", *Angew. Chem. Int. Ed.* 51, 8800-8805 (2012)
3. Kim S, Kim D, Jung HH, Lee IH, Kim JI, Suh JY, **Jon S.** "Bio-inspired Design and Potential Biomedical Applications of a Novel Class of High Affinity Peptide", *Angew. Chem. Int. Ed.* 51 (2012)
4. 2015 College of Fellow, American Institute of Medical and Biological Engineering
5. 2015 The Most Cited Paper Award, 'Theranostics' Journal (IVY Spring International Publisher)

#### 정원석 교수님

1. Chung WS\*, Welsh CA\*, Barres BA and Stevens B. "Do glia drive synaptic and cognitive impairment in disease?". *Nature Neurosci.* 18(11):1539-45 (2015) (\* Equally contributed).
2. Chung WS, Allen NJ and Eroglu C. "Glia Monograph: Astrocytes Control Synapse Formation, Function, and Elimination". Cold Spring Harbor Laboratory Press. 7(9) 2015.
3. Chung WS+, Clarke LE\*, Wang GX\*, Stafford BK, Sher A, Chakraborty C, Joung J, Foo LC, Thompson A, Chen C, Smith SJ and Barres BA. "Astrocytes mediate synapse elimination through MEGF10 and MERTK pathways". *Nature (Article).* 504(7480):394-400 (+Corresponding author, \* Equally contributed). 2013.
4. 2014-2016: NIH Pathway to Independence Award (K99) from NEI (PI: Won-Suk Chung)
5. 2009-2012: Postdoctoral fellowship Award from Damon Runyon Cancer Research Foundation

#### 조병관 교수님

1. Cho, B.-K., Zengler, K., Qiu, Y., Knight, E.M., Park, Y.S., Barrett, C.L., Gao, Y., and Palsson, B.O. "The transcription unit architecture of the Escherichia coli K-12 MG1655 genome", *Nature Biotechnol.*, 27(11), 1043-1049 (2009) (Featured on the cover article)
2. Cho, B.-K., Federowicz, S., Park, Y.S., Zengler, K., and Palsson, B.O. "Deciphering the transcriptional regulatory logic of metabolism", *Nature Chem. Biol.*, 8(1), 65-71 (2012)
3. Cho, S., Cho, Y.B., Kang, T.J., Kim, S.C., Palsson, B.O., and Cho, B.-K. "The architecture of ArgR-DNA complexes at the genome-scale in Escherichia coli", *Nucleic Acids Res.*, 43(6), 3079-3088 (2015)
4. 2013 Honor from the Ministry of Science, ICT and Future Planning
5. 2012 Young Scientist, DAVOS forum

#### 최광욱 교수님

1. Cho, K.-O. and Choi, K.-W. "Fringe is essential for mirror symmetry and morphogenesis in the Drosophila eye", *Nature* 396, 272-276 (1998)
2. Izaddoost, S., Nam, S-C, Bhat, MA, Bellen, HJ, Choi, K-W. "Drosophila Crumbs is a positional cue in photoreceptor adherens junctions and rhabdomeres", *Nature* 416, 178-183 (2002)
3. Hsu, Y-C, Chern, J, Cai, Y, Liu, M and Choi, K-W. "Drosophila TCTP is essential for growth and proliferation through regulation of dRheb GTPase", *Nature* 445, 785-788 (2007)
4. Hong, S.-T. and Choi, K.-W. "TCTP directly regulates ATM activity to control genome stability and organ development in Drosophila melanogaster", *Nature Comms.* DOI:10.1038/ncomms3986, 1-14 (2013)
5. Yeom, E., Hong, S.T., and Choi, K.-W. "Crumbs interacts with Xpd for nuclear division control in Drosophila", *Oncogene* 34, 2777-2789 (2015)

#### 최길주 교수님

1. Lee, N., Park, J., Kim, K., and **Choi, G.** "The transcriptional co-regulator LEUNIG\_HOMOLOG inhibits light-dependent seed germination. *Plant Cell*, in press (2015)
2. Sakuraba, Y., Jeong, J., Kang, M-Y., Kim, K., Paek, N-C\*, and **Choi, G\***. "Phytochrome-interacting factors PIF4 and PIF5 induce leaf senescence in Arabidopsis", *Nature Communications*, 5, doi, 10.1038/ncomms5636 (2014)
3. Kim, K., Shin, J. Lee, S.-H., Kweon, H.-S., Maloof, J.N., and **Choi, G.** "Phytochromes inhibit hypocotyl negative gravitropism by regulating the development of endodermal amyloplasts through PIFs". *PNAS*, 108, 1729-1734 (2011)
4. Shin, J., Kim, K. Kang, H., Zulfugarov, I., Bae, G., Lee, C.H., Lee, D., and **Choi, G.** "Phytochromes promote seedling light responses by inhibiting four negatively acting phytochrome-interacting factors". *PNAS*, 106, 7660-7665 (2009)
5. Oh, E. Kang, H., Yamaguchi, S. Park, J., Lee, D. Kamiya, Y., and **Choi, G.** "Genome-wide analysis of PIF5 direct target genes in phytochrome-mediated seed germination", *Plant Cell*, 21, 403-419 (2009)

### 최준호 교수님

1. Lee D, Sohn H, Kalpana GV, **Choe J**. "Interaction of E1 protein with hSNF5 stimulates replication of human papillomavirus DNA", *Nature* 399, 487-491 (1999)
2. Lim C, Chung BY, Pitman JL, McGill JJ, Pradhan S, Lee J, Keegan KP, **Choe J**, Allada R. "clockwork orange encodes a transcriptional repressor important for circadian-clock amplitude in *Drosophila*", *Current Biol.* 17, 1082-1089 (2007)
3. Lim C, Lee J, Choi C, Kilman VL, Kim J, Park SM, Jang SK, Allada R, **Choe J**. "The novel gene twenty-four defines a critical translation step in the *Drosophila* clock". *Nature* 470, 399-403 (2011)
4. 2011 "'Scientist of the Month'" from the National Research Foundation, Korea.
5. 2012 "'National Academy of Sciences Award'" from the National Academy of Sciences, Korea.

### 한용만 교수님

1. Kang YK, Koo DB, Park JS, Choi YH, Chung AS, Lee KK, Han YM, "Aberrant methylation of donor genome in cloned bovine embryos", *Nature Genetics* 28(2), 173-177 (2001)
2. Sang-Wook Park, Young Jun Koh, Jongwook Jeon, Yun-Hee Cho, Mi-Jin Jang, Yujung Kang, Min-Jeong Kim, Chulhee Choi, Yee Sook Cho, Hyung-Min Chung, Gou Young Koh, and Yong-Mahn Han, "Efficient differentiation of human pluripotent stem cells into functional CD34+ progenitor cells by combined modulation of the MEK ERK and BMP4 signaling pathways", *Blood* 116(25), 5762-5772 (2010)
3. Seung-Kyoon Kim, Hosuk Lee, Kyumin Han, Sang Cheol Kim, Yoonjung Choi, Sang-Wook Park, Geunu Bak, Younghoon Lee, Jung Kyoon Choi, Tae-Kyung Kim, Yong-Mahn Han and Daeyoup Lee (Co-corresponding), "SET7/9 Methylation of the Pluripotency Factor LIN28A Is a Nucleolar Localization Mechanism that Blocks let-7 Biogenesis in Human ESCs", *Cell Stem Cell* 15(6), 735-749 (2014)
4. Excellent Research Award, Korea Research Council of Fundamental Science & Technology (KRCF)(2001)
5. The President Award, Republic of Korea(2002)

### 한진희 교수님

1. Kwon J-T, Nakajima R, Kim H-S, Jeong Y, Augustine GJ, Han J-H. "Optogenetic activation of presynaptic inputs in lateral amygdala forms associative fear memory", *Learn. Mem.* 21, 627-633 (cover article) (2014)
2. Kim J\*, Kwon J-T\*, Kim H-S, Josselyn SA, and Han J-H. Memory recall and modifications by activating neurons with elevated CREB. *Nat. Neurosci.* 17(1), 65-72 (\* equal contribution) (2014)
3. Han J-H, Kushner SA, Hsiang HL, Yiu AP, Buch T, Waisman A, Bontempo B, Neve RL, Frankland PW, Josselyn SA. "Selective erasure of a fear memory", *Science* 323, 1492-1496. 'exceptional by Faculty of 1000' (2009)
4. Han J-H, Kushner SA, Yiu AP, Cole CA, Matynia A, Brown RA, Neve R, Guzowski JF, Silva AJ, Josselyn SA. "Neuronal competition and selection during memory formation", *Science* 316,

457-460. 'must read by Faculty of 1000' (2007)

5. Bessemer Science Fellowship from POSCO TJ Park Foundation (2009)

#### 허원도 교수님

1. Ki-Young Chang\*, Doyeon Woo\*, Hyunjin Jung, Taeyoon Kyung, Sangkyu Lee, Hyerim Park, Nury Kim, Hee Won Yang and Won Do Heo, "Light-inducible receptor tyrosine kinases that regulate neurotrophin signalling, *Nature Communications* 5(4057) (2014)

2. Sangkyu Lee\*, Hyerim Park\*, Taeyoon Kyung, Na Yeon Kim, Sungsoo Kim, Jihoon Kim and Won Do Heo, "Reversible protein inactivation by optogenetic trapping in cells", *Nature Methods* 11(6):633-636 (2014)

3. Hee Won Yang, Min-Gyoung Shin, Sangkyu Lee, Wei Sun Park, Jeong-Rae Kim, Kwang-Hyun Cho, Tobias Meyer\*, and Won Do Heo\*, "Cooperative Activation of PI3K by Ras and Rho Small GTPases", *Molecular Cell* 47(2): 281-290 (2012)

4. Won Do Heo, Takanari Inoue, Wei Sun Park, Man-Lyang Kim, Byung Ouk Park, and Tobias Meyer, "PI(3,4,5)P-3 and PI(4,5)P-2 lipids target proteins with polybasic clusters to the plasma membrane", *Science* 314(5804): 1458-1461 (2006)

5. Won Do Heo and Tobias Meyer, "Switch-of-Function Mutants Based on Morphology Classification of Ras Superfamily Small GTPases", *Cell (Cover Article)* 113(3), 315-328 (2003)

#### David Helfman

1. Helfman, D.M. Niclosamide "An established antihelminthic drug as a potential therapy against S100A4-mediated metastatic colon tumors", *J. Natl. Cancer Inst* 103, 991-992 (2011) (Invited Editorial).

2. Choi, C., Kim, D., Kim, S., Jeong, S., Song, E., Helfman, D.M. "From skeletal muscle to cancer: insights learned elucidating the function of tropomyosin". *J Struct Biol.* 177, 63-69, (2012)

3. Choi, C., and Helfman, D.M. "The Ras-ERK pathway modulates cytoskeleton organization, cell motility and lung metastasis signature genes in MDA-MB-231 LM2", *Oncogene*, 33, 3668-3676 (2014)

4. Suh, J.H., Kim, H., Helfman, D.M., Choi, J.H., Lerr, B.H., Yoo, H.W., Han, Y.M. "Modeling of Menkes disease via human induced pluripotent stem cells", *Biochem Biophys Res Commun.* 444, 311-318 (2014)

5. President Fellowship Visiting Research Professor, EPFL, Lausanne, Switzerland March 2014-February 2015

#### Walton Jones 교수님

1. Suh YS et al. "Genome-wide microRNA screening reveals that the evolutionary conserved miR-9a regulates body growth by targeting sNPF1/1NPYR" *Nat Comms* 6(7693) (2015)

2. Jones, W.D., Volkan, P.C., Kadow, I.G., and Vosshall, L.B., "Two chemosensory receptors together mediate carbon dioxide detection in *Drosophila*". *Nature* 445(7123), 86-90 (2007)

3. Jones, W.D., Nguyen, T.-A. T., Kloss, B., Lee, K.J., and Vosshall, L.B.. "Functional conservation of an insect odorant receptor gene across 250 million years of evolution", *Curr*

Biol 15(4), R119-R121 (2005)

4. Larsson, M.C. et al. . "Or83b encodes a broadly expressed odorant receptor essential for *Drosophila* olfaction", *Neuron* 43(5), 703-714 (2004)

5. KAIST Grand Prize for Creative Teaching (2011)