

CURRICULUM VITAE

Junsu Kang, Ph.D.

Cell and Regenerative Biology
University of Wisconsin-Madison
4451 WIMRII, 1111 Highland Ave., Madison, WI 53705
(608) 262-8678
junsu.kang@wisc.edu

Education and Training

- 1997 – 2004 Yonsei University (Seoul, South Korea)
B.S. Biology (Graduated with high honors)
- 2004 – 2010 Seoul National University (Seoul, South Korea)
Ph.D, Developmental Genetics
Mentor: Dr. Junho Lee
Thesis Title: Studies on the Hippo pathway in *Caenorhabditis elegans*
- 2011 – 2016 Duke University (Durham, NC)
Postdoctoral Fellow
Mentor: Dr. Kenneth D. Poss
Identify novel regulatory factors controlling tissue regeneration in zebrafish
- 2016 – 2017 Duke University (Durham, NC)
Medical Instructor
Identify novel regulatory factors controlling tissue regeneration in zebrafish

Academic Appointments

- 2017 – Present University of Wisconsin – Madison (Madison, WI)
Assistant Professor of Cell and Regenerative Biology

Publications

1. Begeman, I., Shin, K., Kurth, A., Lee, N., Chamberlain, T.J., Pelegri, F.J. and **Kang, J.** Decoding an organ regeneration switch by dissecting cardiac regeneration enhancers., *Development*. 2020 Nov 27;. doi: 10.1242/dev.194019.
2. Peng, X., Lai, K.S., Yu, G., She, P., **Kang, J.**, Li G., Xu, X., Zhou, B., Ni, T., Lee E., Wang, T., Liao, L., Poss, K.D., Zhong, T.P., Induction of Wnt signaling antagonists and P21-activated kinase enhances cardiomyocyte proliferation during zebrafish heart regeneration. *Journal of Molecular Cell Biology*, mjaa046, <https://doi.org/10.1093/jmcb/mjaa046>
3. Thompson, J.D., Ou, J., Lee, N., Shin, K., Cigliola, V., Song, L., Crawford, G., **Kang, J.** and Poss, K.D., Identification and requirements of enhancers that direct gene expression during zebrafish fin regeneration., *Development*. 2020 Jul 30;147(14):dev191262.
4. Golenberg, N., Squirrel, JM., Bennin, DA., Rindy, J., Pistono, PE., Eliceiri, KW., Shelef, MA., **Kang, J.**, Huttenlocher, A. Citrullination regulates wound responses 1 and tissue regeneration in zebrafish. *Journal of Cell Biology*, 219(4), e201908164, (2020).
5. Lee., H., **Kang, J.**, Ahn, S., Lee, J., The Hippo Pathway Is Essential for Maintenance of Apicobasal Polarity in the Growing Intestine of *Caenorhabditis elegans*. *Genetics*, 213(2):

- 501-515 (2019).
6. Rodriguez, A., **Kang, J.**, Regeneration enhancers: Starting a journey to unravel regulatory events in tissue regeneration, *Seminars in Cell and Developmental Biology*, Invited review for a special issue entitled, "Chromatin dynamics in regeneration", pii: S1084-9521(18) 30198-8. (2019).
 7. Yang, K., **Kang, J.**, Tissue regeneration enhancer elements: A way to unlock endogenous healing power. *Developmental Dynamics*, Invited review for a special issue entitled, "Stem Cells and Tissue Engineering in Development, Disease, & Repair", 248(1):34-42. (2019).
 8. Begeman, I., **Kang, J.**, Transcriptional programs and injury/regeneration enhancers underlying heart regeneration. *Journal of Cardiovascular Development and Disease*, Invited review for a special issue entitled, "Cardiac Regeneration in Non-Mammalian Vertebrates", 22;6(1). pii: E2 (2018).
 9. Lee, H., **Kang, J.**, Lee, J., Involvement of YAP-1, the homolog of Yes-associated protein, in the Wnt-mediated neuronal polarization in *Caenorhabditis elegans*. *G3 (Bethesda)*, 8(8):2595-2602, (2018).
 10. **Kang, J.**, Hu, J., Karra, R., Dickson, A.L., Tornini, V.A., Nachtrab, G., Gemberling, M., Goldman, J.A., Black, B.L., Poss, K.D. Modulation of tissue repair by regeneration enhancer elements. *Nature*. 523(7598):201-206, (2016).
 11. **Kang, J.**, Karra, R., Poss, K.D. Back in Black. *Developmental Cell*. 33(6):623-624, (2015).
 12. **Kang, J.**, Nachtrab, G., Poss, K.D., Local Dkk1 Crosstalk from Breeding Ornaments Impedes Regeneration of Injured Male Zebrafish Fins. *Developmental Cell*. 27(1):19-31, (2013).
This paper is chosen by cover story.
 13. **Kang, J.***, Bai, Z.*, Zegarek, M.H., Grant, B.D., Lee, J. Essential roles of *snap-29* in *C. elegans*. *Developmental Biology*. 355(1):77-88, (2011). (* These two equally contributed to this work)
 14. Choi, B., **Kang, J.**, Park, YS., Lee, J., Cho, NJ. A possible role for FRM-1, a *C. elegans* FERM family protein, in embryonic development. *Molecules and Cells*. 31(5):455-459, (2011).
 15. Min, K.* , **Kang, J.***, Lee, J. A modified feeding RNAi method for simultaneous knock-down of more than one gene in *Caenorhabditis elegans*. *Biotechniques*. 48(3): 229-232, (2010). (* These two equally contributed to this work)
 16. **Kang, J.**, Shin, D., Yu, JR., Lee, J. Lats kinase is involved in the intestinal apical membrane integrity in the nematode *Caenorhabditis elegans*. *Development*. 136(16): 2705-2715 (2009).
 17. Kim, YH., Song, HO., Ko, KM., Singaravelu, G., Jee, C., **Kang, J.**, Ahnn, J. A novel calcineurin-interacting protein, CNP-3, modulates calcineurin deficient phenotypes in *Caenorhabditis elegans*. *Molecules and Cells*. 25(4):566-571 (2008).

Research Grants

Active

NIH/NIGMS R35GM133478

Title: Molecular and genetic analysis of fin regeneration in zebrafish

Term: 07/01/2020 – 06/30/2025

Goal: The goals of this project are to construct genetic models for tissue regeneration to uncover regeneration-associated genes and underlying mechanisms.

Role: PI

Pending

NIH/NHLBI R01HL151522-01A1

Title: Dissecting injury-responsive gene expression during zebrafish heart regeneration

Goal: The goals of this project are to elucidate the transcriptional mechanisms by which cardiac injury signals are transduced to facilitate heart regeneration.

Role: PI

Impact score: 25, Percentile: 15

Past Awards

American Heart Association 16SDG30020001

Title: Unraveling the regulatory mechanisms of cardiac regeneration enhancers.

Term: 07/01/16-06/30/19

Goal: The goals of this project are to elucidate the regulatory mechanisms underlying heart regeneration.

Role: PI

Honors and Awards

2006 – 2007 Seoul Science Fellowship, Seoul City Government

2014 Travel Award, International Conference on Zebrafish Development and Genetics

2016 Best Poster Award, Weinstein Cardiovascular Development and Regeneration Conference

2016 Travel Award, The Allied Genetics Conference

2016 Presentation Award for Young Investigators, International Conference of the Korean Society for Molecular and Cellular Biology

2018 Wisconsin Partnership Program New Investigator Program, Finalist

Professional Associations

2010 – Present Member, American Association for the Advancement of Science

2014 – Present Member, American Heart Association

2012 – Present Member, Genetic Society of America

2017 – Present Member, Society for Developmental Biology

2017 – Present Review Board member, Bio-Protocol (Bio-protocol is an online peer-reviewed protocol journal.)

2018 – Present Member, International Zebrafish Society

Other Activities

2020, Nov Serve as an ad hoc reviewer of NIH K99/R00 Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC)

2020, Feb Serve as a reviewer of Cardiac Development and Differentiation NIH study section

2018 13th International zebrafish conference, a chair of stem cells and regeneration session

2018 - 2019 Serve as an International Reviewer for Cellular and Molecular Biology graduate program admissions committee

2017 – 2020 Serve as a peer reviewer on Nature Communications, Genome Research, Scientific Reports, Developmental Biology, Development, iScience, Bio-protocols, Journal of Cardiovascular Development and Disease, Genes, Zebrafish, the FEBS

journal, eLife, Journal of Molecular and Cellular Cardiology and Disease Models and Mechanisms.

Talks

November 16, 2006	The 2nd East Asia <i>C. elegans</i> meeting Seoul National University, Seoul, South Korea
July 21, 2008	15th East Asia Joint Conference on Biomedical Research Samsung Biomedical Research Institute, Seoul, South Korea
February 27, 2012	Triangle Zebrafish Group Meeting North Carolina State University
October 3, 2013	Evolution, Development, and Genomics Seminar series Dept. of Biology. Duke University
April 20, 2015	Triangle Zebrafish Research Symposium Duke University Medical Center
October 14, 2015	Duke Epigenetics and Epigenomics Program Duke University Medical Center
July 13, 2016	The Allied Genetics Conference, Orlando
October 12, 2016	International Conference of the Korean Society for Molecular and Cellular Biology, Seoul, South Korea, 2016
January 11, 2017	Dept. of Developmental Biology University of Pittsburgh
January 23, 2017	Dept. of Developmental Biology Washington University in St. Louis
January 26, 2017	Developmental Biology Division Cincinnati Children's Hospital
February 2, 2017	Dept. of Regenerative Medicine and Cell Biology Medical University of South Carolina
February 16, 2017	Center for Molecular Medicine University of Georgia
February 23, 2017	Dept. of Developmental and Cell Biology University of California, Irvine
February 27, 2017	Genetics Department MD Anderson Cancer Center
March 9, 2017	Dept. of Cell and Regenerative Biology University of Wisconsin - Madison
November 15, 2017	UW-Madison Zebrafish Meeting University of Wisconsin - Madison
January 4, 2018	CVRC Vascular Biology Research Colloquium University of Wisconsin - Madison

February 9, 2018	Developmental Biology Seminar University of Wisconsin - Madison
February 14, 2018	Laboratory of Genetics Spring Colloquium University of Wisconsin - Madison
April 3, 2018	SCRMC Campus Lab Meeting University of Wisconsin - Madison
November 14, 2018	American Heart Association Heart Ball Research Breakfast University of Wisconsin - Madison

Teaching Activities

Present Courses

CRB710, Developmental Genetics, 2019 – Present, 3 credits, 4 contact hours

CRB675 (Course Director), Biology of heart disease and regeneration, 2019 - Present, 3 credits, 15 contact hours