

Major Research Interest

Genetic basis of (i) evolution of neurodevelopment and behavior, (ii) adaptive evolution of nervous system, (iii) evolution of communication and social interaction, and (iv) repeated evolution during niche adaptation

Education and Training

- 2017-present **Post-doctoral Fellow** Department of Molecular Biosciences
Northwestern University, Evanston, IL, USA
Advisor: Dr. Erik Andersen
- 2010-2017 **Ph.D.** School of Biological Science
Seoul National University, Seoul, Korea
Advisor: Dr. Junho Lee
Dissertation: Genetic studies on diversity and plasticity of nictation
behavior in *Caenorhabditis elegans*
- 2006-2010 **B.S.** School of Biological Science
Seoul National University, Seoul, Korea

Awards and Honors

- 2018 Northwestern Post-doctoral Travel Award
- 2011-2014 POSCO TJ Park Science Doctoral Fellowship (포스코청암사이언스펠로십)
- 2010 18th International *C. elegans* Meeting, 1st Place poster award
- 2006-2010 Korea Presidential Science Scholarship (대통령과학장학금)

Publications

(* indicates co-authorship)

Lee, D., Zdraljevic, S., Cook, DE., Wang, Y., Frézal, L., Hsu, J-C., Sterken, MG., Riksen, JAG., Wang, J., Kammenga, JE., Braendle, C., Félix, M-A., Schroeder, FC. and Andersen, EC. Selection and gene flow shape niche-associated variation in pheromone response. ***Nature Ecology & Evolution*** 3(10): 1455–1463.

Crombie, TA., Zdraljevic, S., Cook, DE., Tanny, RE., Brady, SC., Wang, Y., Evans, KS., Hahnel, S., **Lee, D.**, Rodriguez, BC., Zhang, G., Zwaag, JVD., Kiontke, KC., and Andersen, EC. (2019). Deep sampling of Hawaiian *Caenorhabditis elegans* reveals high genetic diversity and admixture with global populations. ***bioRxiv*** 716928.

Brady, SC., Zdraljevic, S., Bisaga, KW., Tanny, RE., Cook, DE., **Lee, D.**, Wang, Y. and Andersen, EC. (2019). A Novel Gene Underlies Bleomycin-Response Variation in *Caenorhabditis elegans*. ***Genetics*** 212(4): 1453-1468.

Zhao, Y., Wan, J., Biliya, S., Brady, SC., **Lee, D.**, Andersen, EC., Vannberg, FO., Lu, H. and McGrath PT. (2019). A beneficial genomic rearrangement creates multiple versions of calcipressin in *C. elegans*. **bioRxiv** 578088.

Zamanian, M., Cook, DE., Zdraljevic, S., Brady, SC., **Lee, D.**, Lee, J. and Andersen EC. (2018). Discovery of genomic intervals that underlie nematode responses to benzimidazoles. **PLoS Negl Trop Dis** 12(3):e0006368.

Richaud, A., Zhang, G., **Lee, D.**, Lee, J. and Félix, M-A. (2018). The Local Coexistence Pattern of Selfing Genotypes in *Caenorhabditis elegans* Natural Metapopulations. **Genetics** 208(2): 807-821

Kim, J., **Lee, D.**, and Lee, J. (2017). A quantitative trait locus for nictation behavior on chromosome V. **microPublication Biology**. 10.17912/W23D39.

Lee, D., Yang, H., Kim, J., Brady, S., Zdraljevic, S., Zamanian, M., Kim, H., Paik, YK., Kruglyak, L., Andersen, EC. and Lee, J. (2017). The genetic basis of natural variation in a phoretic behavior. **Nature Communications** 8(1): 273(1-7).

Lee, D.*, Lee, H.* , Kim, N.* , Lim, DS. and Lee, J. (2017). Regulation of a hitchhiking behavior by neuronal insulin and TGF- β signaling in the nematode *Caenorhabditis elegans*. **Biochemical and Biophysical Research Communications** 484(2): 323-330.

Lee, D., Lee, H., Choi, M., Park, S. and Lee, J. (2015). Nictation Assays for *Caenorhabditis* and Other Nematodes. **Bio-protocol** 5(7): e1433.

Lee, H., Choi, M., **Lee, D.**, Kim, H., Hwang, H., Kim, H., Park, S., Paik, Y. and Lee, J. (2011). Nictation, a dispersal behavior of the nematode *Caenorhabditis elegans*, is regulated by IL2 neurons. **Nature Neuroscience** 15(1), 107-112.

(In Korean)

이대한. (2019-연재 중). 현대유전학의 최전선. Skeptic Korea.

이대한. (2017). 예쁜꼬마선충: 족보 있는 종의 계보학. 에피 2호. 이음.

김천아, 서범석, 성상현, **이대한**, 최명규. (2017). 벌레의 마음. 바다출판사.

Professional Experiences

Professional Talks

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| 2019 | 2 nd Chicago arear <i>C. elegans</i> Meeting, 'Workshop: Genome Editing' |
| 2019 | 7 th Midwest <i>C. elegans</i> Meeting, 'Selection and gene flow shape niche-associated copy-number variation of pheromone receptor genes' |
| 2018 | 8 th Asia-Pacific <i>C. elegans</i> Meeting, 'Natural variations in chemical communication of <i>C. elegans</i> ' |
| 2018 | Invited seminars at University of Seoul and Hanyang University |
| 2016 | The Allied Genetics Conference (TAGC), 'QTL mapping for hitchhiking behavior in <i>C. elegans</i> reveals evolutionary trade-off between dispersal and reproduction' |
| 2015 | 20 th International <i>C. elegans</i> Meeting, 'Natural variations in nictation and identification |

of responsible QTL'
2014 International Evolutionary Biology of *Caenorhabditis* and other Nematodes meeting,
'To ride or not to ride : Genetic basis for natural variation of *C. elegans* hitchhiking
behavior'

Teaching Experience

2018 Korean-American Scientists and Engineers Association (KSEA)
Mentoring program (Mentor for Biology)
2014 Public lecture, Moonji Cultural Institute
2012 Gyeongbuk Future Scientist Training Program (Mentor)
2011 Teaching assistant, Research class in advanced biological science
2010 Teaching assistant, Research class in basic biological science

Others

2019 32nd US-Korea Conference (UKC) local organizing committee member
2017-present Public affairs director of Korean-American Scientists and Engineers
Association Chicagoland chapter (KSEA-CHI) administration
2017-present Member of selection committee for KSEA-CHI scholarship
2017-present Member of KASBP (Korean-American professional community in
biotechnology and pharmaceuticals)