

Daehan Lee, Ph.D.

Department of Biological Sciences, Sungkyunkwan University,
2066 Seobu-ro, Suwon 16419, Korea
(82) 10 2768 3139 | lee.daehan@skku.edu

EDUCATION

- 01/09/2010 - 24/02/2017 **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*
- 01/03/2006 - 30/08/2010 **B.S.** School of Biological Science
Seoul National University, Seoul, Korea

PROFESSIONAL EXPERIENCES

- 01/01/2023 - present **Assistant Professor**
Department of Biological Sciences
Sungkyunkwan University, Suwon, Korea
- 01/03/2022 - 31/12/2022 **Assistant Professor**
Department of Biology
Kyung Hee University, Seoul, Korea
- 01/07/2020 - 31/08/2022 **Post-doctoral Fellow**
Center for Integrative Genomics
University of Lausanne, Lausanne, Switzerland
Advisor: Dr. Richard Benton
Project: Evolution of Drosophila nervous systems
- 01/05/2020 - 30/06/2020 **Research Assistant Professor** (temporary)
Dr. Jiwon Shim's laboratory, Department of Life Science
Hanyang University, Seoul, Korea
(*temporary position due to the COVID-19)
Project: Single-cell dissection of Drosophila hematopoiesis
- 01/03/2017 - 28/02/2020 **Post-doctoral Fellow**
Department of Molecular Biosciences
Northwestern University, Evanston, IL, USA
Advisor: Dr. Erik Andersen
Project: Genome and complex trait evolution in C. elegans

PUBLICATIONS

(* indicates co-authorship)

First-authored publications

Lee, D., Fox, BW., Palomino, DCF., Panda, O., Tenjo, FJ., Koury, E., Evans, KS., Stevens, Rodrigues, PR., L., Kolodziej, AR., Schroeder, FC. and Andersen, EC. (2023). Natural genetic variation in the pheromone production of *C. elegans*. ***Proceedings of the National Academy of Sciences***. 120(26): e2221150120.

Lee, D.*, Zdraljevic, S.*, Stevens, L.*, Wang, Y., Tanny, RE., Crombie, TA., Cook, DE., Webster, AK., Chirakar, R., Baugh, LR., Sterken, MG., Braendle, C., Félix, M-A., Rockman, MV. and Andersen, EC. (2021). Balancing selection maintains hyper-divergent haplotypes in *C. elegans*. ***Nature Ecology & Evolution*** 5(6):794-807.

Lee, D., Zdraljevic, S., Cook, DE., Frézal, L., Hsu, J-C., Sterken, MG., Riksen, JAG., Wang, J., Kammenga, JE., Braendle, C., Félix, M-A., Schroeder, FC. and Andersen, EC. (2019). Selection and gene flow shape niche-associated variation in pheromone response. ***Nature Ecology & Evolution*** 3(10): 1455–1463.

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.

Co-authored publications

Lim, DS., Kim, J., Kim, W., Kim, N., Lee, S., **Lee, D.**, Lee, J. (2023) *daf-42* is an evolutionarily young gene essential for dauer development in *Caenorhabditis elegans*. ***Genetics***. doi:10.1093/genetics/iyad097

Zhang, G., Roberto, NM., **Lee, D.**, Hahnel, S., Andersen, EC. (2022) The impact of species-wide gene expression variation on *Caenorhabditis elegans* complex traits. ***Nature Communications***. 13(1):1-13

Crombie, TA., Battlay, P., Tanny RE., Evans, KS., Buchanan, CM., Cook, DE., Dilks, CM., Stinson, LA., Zdraljevic, SZ., Zhang, G., Roberto, NM., **Lee, D.**, Ailion, M., Hodgins, KA., Andersen, EC. (2022) Local adaptation and spatiotemporal patterns of genetic diversity revealed by repeated sampling of *Caenorhabditis elegans* across the Hawaiian Islands. ***Molecular Ecology***. 31(8):2327-2347

Cho, B., Yoon, S-H., Lee, D., Koranteng, F., Tattikota, SG., Cha, N., Shin, M., Do, H., Hu, Y., Oh, SY., **Lee, D.**, Menon, AV., Moon, SJ., Perrimon, N., Nam, J-W. and Shim, J. (2020) Single-cell transcriptome maps of myeloid blood cell lineages in *Drosophila*. ***Nature Communications***. 11(1):4483.

Zhao, Y., Long, L., Wan, J., Biliya, S., Brady, SC., **Lee, D.**, Ojemakinde, A., Andersen, EC., Vannberg, FO., Lu, H. and McGrath PT. (2020). A spontaneous complex structural variant in *rcan-1* increases exploratory behavior and laboratory fitness of *Caenorhabditis elegans*. ***PLoS Genet*** 24;16(2):e1008606.

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. **eLife** 8:e50465.

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.

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, 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.

Science communication

이대한. (2023). 인간은 왜 인간이고 초파리는 왜 초파리인가. 바다출판사. (단행본)

이대한. (2023-). 스프칼럼. SBS. (연재)

이대한. (2023). 선악과를 둘러싼 섹스와 진화. 크로스로드 216호. 아태이론물리센터.

이대한. (2022). 고대 DNA가 들려주는 인류의 진화와 섹스 이야기. 크로스로드 206호. 아태이론물리센터.

이대한. (2019-2022). 현대유전학의 최전선. **Skeptic Korea**. (연재)

이대한. (2019-2022). 이대한의 연구실 가는 길. 경향신문. (연재)

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

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

AWARDS AND FELLOWSHIPS

10/09/2021	Génopode retreat 2021, Second poster prize
13/05/2018 - 16/05/2018	Northwestern Postdoctoral Travel Award
01/03/2011 - 28/02/2014	POSCO TJ Park Science Doctoral Fellowship
26/06/2011	18 th International <i>C. elegans</i> Meeting (Los Angeles, USA), 1 st place poster award (Neurobiology: Behavior)
01/03/2006 - 28/02/2010	Korea Presidential Science Scholarship

PROFESSIONAL TALKS

2023	<i>Invited seminars</i> at Sungkyunkwan University, DGIST, Ajou University
2023	<i>Invited talk</i> at The 29th Korean <i>C. elegans</i> meeting, The 52nd Korean <i>Drosophila</i> meeting, The 78th Korean Association of Biological Sciences meeting
2022	<i>Invited seminars</i> at Korea University, Ewha Womans University, Hallym University
2022	<i>Invited talk</i> at The 31st International KOGO Annual Conference, The 1st Korean Society for the Study of Evolution Symposium, HYU-SKKU <i>Drosophila</i> Symposium
2022	Suisse Romande <i>Drosophila</i> Satellite Meeting
30/09/2021	<i>Invited seminar (virtual)</i> at Biological Research Information Center (BRIC), Pohang, Korea, 'The evolution of <i>C. elegans</i> '
16/08/2021	<i>Invited seminar</i> at Seoul National University, Seoul, Korea
13/08/2021	<i>Invited talk at the 76th Annual Meeting of the Korean Association of Biological Sciences (virtual)</i> , 'Balancing selection maintains hyper-divergent haplotypes in <i>C. elegans</i> '
30/04/2021	<i>3rd Fly Cell Atlas symposium (virtual)</i> , 'Evolution of drosophilid central brains'
12/12/2019	<i>Invited seminar (virtual)</i> at Biological Research Information Center (BRIC), Pohang, Korea, 'The evolution of sweet conversation'
23/05/2019	<i>2nd Chicago area C. elegans Meeting (Chicago, USA)</i> , 'Workshop: Genome Editing'
20/04/2019	<i>7th Midwest C. elegans Meeting (Ann Arbor, USA)</i> , 'Selection and gene flow shape niche-associated copy-number variation of pheromone receptor genes'
26/07/2018	<i>Invited seminar</i> at Hanyang University, Seoul, Korea
25/07/2018	<i>Invited seminar</i> at University of Seoul, Seoul, Korea
09/07/2018 - 12/07/2018	<i>8th Asia-Pacific C. elegans Meeting (Seoul, Korea)</i> , 'Natural variations in chemical communication of <i>C. elegans</i> '
13/07/2016 - 17/07/2016	<i>The Allied Genetics Conference (TAGC) (Washington D.C., USA)</i> , 'QTL mapping for hitchhiking behavior in <i>C. elegans</i> reveals evolutionary trade-offs between dispersal and reproduction'
20/06/2015 - 24/06/2015	<i>20th International C. elegans Meeting (Los Angeles, USA)</i> , 'Natural variations in nictation and identification of responsible QTL'
14/06/2014 - 17/06/2014	<i>Evolutionary Biology of Caenorhabditis and other Nematodes meeting (Hinxton, UK)</i> , 'To ride or not to ride: Genetic basis for natural variation of <i>C. elegans</i> hitchhiking behavior'

TEACHING AND MENTORING

2023 -	Teaching , Introduction to Biology, Developmental Biology, Omics Biology, Advanced Developmental Biology, Nervous system evolution (Sunkyunkwan University)
01/09/2022 - 31/12/2022	Teaching , Biology II class (Kyung Hee University)
01/03/2021 - 23/03/2021 01/03/2022 - 21/03/2021	Supervisor , Advanced Molecular, Cellular and Developmental Biology class : taught how to read and interpret research article and how to deliver research findings
01/09/2010 - 15/12/2010	Teaching assistant , Travaux pratiques de biologie moléculaire : taught molecular biology experimental techniques and backgrounds
01/03/2011 - 05/06/2011	Teaching assistant , Research class in advanced biological science : taught genetic experiments using <i>C. elegans</i> as a model system to biology major undergraduate students
01/09/2010 - 15/12/2010	Teaching assistant , Research class in basic biological science : taught basic biological experiments to chemistry major undergraduate students
01/08/2018 - 30/06/2019	Mentor Korean-American Scientists and Engineers Association (KSEA) mentoring program : mentored Korean American high school students on career development in the field of biology and supervised scientific reading and presentation
01/07/2017 - 30/06/2018	Mentor Northwestern University, Evanston, USA : mentored Peter Finmegan for his undergraduate research project
01/03/2012 - 24/02/2017	Mentor Seoul National University, Seoul, Korea : mentored Hongeeun Lee, Hyein Jung (undergraduate), Nari Kim (master), Jun Kim, and Heeseung Yang (Ph.D) on their research projects
01/03/2012 - 20/12/2012	Mentor Gyeongbuk Future Scientist Training Program : supervised Korean high school students to conduct research project to discover free-living nematode species from the soil sample

OUTREACH ACTIVITIES

04/03/2019 - 10/03/2022	Guest writer The Skeptic Korea : Quarterly write serial articles ('The frontline genetics') to introduce diverse fields of contemporary genetics to the general public
18/01/2019 - 12/02/2022	Columnist The Kyunghyang Newspaper : Wrote serial essays ("My Lab Way") for every three weeks to introduce the life of international postdoctoral researcher
01/07/2017 - 13/03/2020	Public affairs director, Scholarship selection committee member Korean-American Scientists and Engineers Association Chicagoland chapter (KSEA-CHI)

(14/08/2019 - 17/08/2020)	<p>: organized, volunteered, advertised local chapter events, participated selection committee for KSEA-CHI scholarship</p> <p>Volunteered for the 32nd US-Korea Conference (UKC) as a local organizing committee member</p>
19/04/2013 - 20/01/2017	<p>Writing Team Leader The Elegant Science Pen Club</p> <p>: Organized and participated in team writing to the science online magazine 'ScienceOn' (19/04/2013 - 22/12/2014)</p> <p>: published a public science book ("The Mind of Worm") on contemporary biological theories and research advances (20/01/2017, Badabooks Publishing Co.)</p>
25/06/2014 - 27/08/2014	<p>Special lecturer Public lecture series ('Science beyond imagination'), Moonji Cultural Institute, Seoul, Korea</p> <p>: gave eight special lectures on the topics from contemporary biology</p>
01/04/2007 - 17/11/2007	<p>Organizer 46th Korean Undergraduate Biology Conference</p> <p>: organized an undergraduate academic conference with 20 Korean universities (150 participants)</p>