Ji Seon (Jiseon) Min

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EMPLOYMENT AND EDUCATION

Employment

Postdoctoral Researcher, Northeastern University, Advisor : Katie E. Lotterhos	2025. Jan - present
Postdoctoral Researcher, University of Oregon, Advisors : Andrew D. Kern, Peter L. Ralph	2022. Sep - 2025. Jan

Education

Ph.D. Molecule, Cells and Organisms, Harvard University Advisors: Michael M. Desai, Ariel Amir	2018. Sep - 2022. Nov
M.S. Applied Mathematics, Harvard University	2018. Sep - 2022. Nov
B.S. Physics, California Institute of Technology	2014. Sep - 2018. June

Other Credentials

Inclusive STEM Teaching Project	2025 Summer
Oxford Statistical Genomics Summer School	2023. June
Boulder School for Condensed Matter and Materials Physics (Theoretical Biophysics)	2019. July

SCHOLARSHIPS AND RESEARCH

Selected Fellowships and Honors

Harvard NSF-Simons Qbio PhD Fellowship (25% of salary and tuition + $2000 research expenses)	2021 Fall - 2022 Spring
Certificate of Distinction in Teaching* (Population Genetics, Harvard University)	2021 Spring

Certificate of Distinction in Teaching* (Introduction to Disordered Systems and Stochastic Processes, Harvard University)	2019 Fall
Korean Presidential Science Scholarship ($60,000 per year)	2014. Aug - 2018. June
International Young Physicists' Tournament - 2nd place, Gold	2013. May

* 4.50 or higher (out of 5) in the "overall" category of the Q Guide from five or more respondents

Peer Reviewed Publications

*Shared first authorship

Chevy ET*, **Min J***, Caudill V, Champer SE, Haller BC, Rehmann CT, Smith CPR, Tittes S, Messer PW, Kern AD, Ramachandran S, Ralph PL (2025). Population Genetics Meets Ecology: A Guide to Individual-Based Simulations in Continuous Landscapes. ***Ecology and Evolution***, 15: e71098. https://doi.org/10.1002/ece3.71098

Min J, Gupta M, Desai MM, & Weissman DB (2022). Spatial structure alters the site frequency spectrum produced by hitchhiking. ***Genetics***, 222(3). https://doi.org/10.1093/genetics/iyac139 **(Featured article)**

Min J, Amir A (2021). A transport approach to relate asymmetric protein segregation and population growth. ***Journal of Statistical Mechanics: Theory and Experiment***, 2021(7), 074503, https://doi.org/10.1088/1742-5468/ac126 **(Highlight article)**

Levien E, **Min J**, Kondev J, Amir A (2021). Non-genetic variability in microbial populations: Survival strategy or nuisance? ***Reports on Progress in Physics***, 84(11), 116601. https://doi.org/0.1088/1361-6633/ac2c92

Barber F, **Min J**, Murray AW, Amir A (2021). Modeling the impact of single-cell stochasticity and size control on the population growth rate in asymmetrically dividing cells. ***PLOS Computational Biology***, 17(6), e1009080. https://doi.org/10.1371/journal.pcbi.1009080

Johnson MS, Gopalakrishnan S, Goyal J, Gillingham ME, Bakerlee CW, Humphrey PT, Jagdish T, Jerison ER, Kosheleva K, Lawrence KR, **Min J**, Moulana A, Phillips AM, Piper JC, Purkanti R, Rego-Costa A, McDonald MJ, Nguyen Ba AN, Desai MM (2021). Phenotypic and molecular evolution across 10,000 generations in laboratory budding yeast populations. ***ELife***, 10, e63910. https://doi.org/10.7554/eLife.63910

Dieterle PB, **Min J**, Irimia D, Amir A (2020). Dynamics of diffusive cell signaling relays. ***ELife***, 9, e61771. https://doi.org/10.7554/eLife.61771

Lin J, **Min J**, Amir A (2019). Optimal segregation of proteins: Phase transitions and symmetry breaking. ***Physical Review Letters***, 122(6), 068101. https://doi.org/10.1103/PhysRevLett.122.068101

Doctoral Dissertation Thesis

Min J (2022). Coarse-grained models of biological systems and asymptotic analyses on population dynamics, Harvard University Graduate School of Arts and Sciences.

Manuscripts in review

N'Guessan A, Wang V, Ascensao J, Bakerlee CW, Belousov E, Brenna G, Dillingham ME, Dupic T, Gopalakrishnan S, Goyal J, Gupta M, Holmes C, Humphrey PT, Jagdish T, Jerison ER, Johnson MS, Kosheleva K, Lawrence KR, **Min J**, Moulana A, Pai A, Phillips AM, Piper JC, Poret A, Purkanti R, Rego-Costa A, Ruiz-Bedoya T, Trivellin C, McDonald MJ, Desai MM, Nguyen Ba AN (2025). Parallel but distinct adaptive routes in the budding and fission yeasts after 10,000 generations of experimental evolution, ***bioRxiv*** 2025.09.11.675703. https://doi.org/10.1101/2025.09.11.675703

Gower G, Pope NS, Rodrigues MF, Tittes S, Tran LN, Alam O, Cavassim MIA, Fields PD, Haller BC, Huang X, Jeffrey B, Korfmann K, Kyriazis CC, **Min J**, Rebollo I, Rehmann CT, Small ST, Smith CCR, Tsambos G, Wong Y, Zhang Y, Huber CD, Gorjanc G, Ragsdale AP, Gronau I, Gutenkunst RN, Kelleher J, Lohmueller KE, Schrider DR, Ralph PL, Kern AD (2025). Accessible, realistic genome simulation with selection using stdpopsim, ***bioRxiv*** 2025.03.23.644823. https://doi.org/10.1101/2025.03.23.644823

Manuscripts in progress

Min J, Chapman Z, & Lotterhos KE. On the evolution of thermal performance curve

Min J, Ning Y, Pope NS, Baumdicker F & Kern AD. Neural posterior estimation for population genetics

Seminars

Min J, Gupta M, Desai MM, & Weissman MB (May 2022), "Spatial structure alters the patterns of genetic diversity produced by hitchhiking"
MIT Physics of Living system Short Talks
Invited seminar

Min J (April 2022), "Spatial structure alters the site frequency spectrum produced by hitchhiking"
Harvard NSF-Simons Qbio group meeting

Conference Talks

(presenter underlined)

Min J, Ning Y, Pope N, Baumdicker F, Kern AD (August 2025). "Neural posterior estimation for high-dimensional simulation data from complex ecological and population genetic models"

European Society for Evolutionary Biology, Barcelona, Spain

Min J, Lotterhos, KE (May 2025). "On the evolution of thermal performance curves" *Evolution*, Athens, Georgia, USA

Weissman DB, **Min J** (May 2025). "Genetic hitchhiking in spatially structured populations" *Evolution***,** Athens, Georgia, USA

Chevy ET, **Min J**, Caudill V, Champer SE, Haller BC, Rehmann CT, Smith CPR, Tittes S, Messer PW, Kern AD, Ramachandran S, Ralph PL (March 2024). "Population Genetics Meets Ecology: A Guide to Individual-Based Simulations in Continuous Landscapes" *The Allied Genetics Conference,* Washington DC, USA

Min J, Desai MM, Weissman MB (March 2022), "Spatial structure alters the allele frequency spectrum produced by hitchhiking" *American Physical Society March Meeting,* Chicago, Illinois, USA

Lin J, **Min J,** Amir A (March 2019), "Optimal segregation of proteins: phase transitions and symmetry breaking" *American Physical Society March Meeting,* Boston, Massachusetts, USA

Conference Posters

(presenter underlined)

Chevy ET, **Min J**, Caudill V, Champer SE, Haller BC, Rehmann CT, Smith CPR, Tittes S, Messer PW, Kern AD, Ramachandran S, Ralph PL (July 2024). "Population Genetics Meets Ecology: A Guide to Individual-Based Simulations in Continuous Landscapes" *Society for Molecular Biology & Evolution,* Puerto Vallarta, Mexico

Min J, Pope N, Kern AD (April 2024). "Popgensbi - simulation-based neural posterior: estimation for population genetics" *Probabilistic Modeling in Genomics,* Vienna, Austria

Min J, Gupta M, Desai MM, Weissman DB (March 2024), "Spatial structure alters the site frequency spectrum produced by hitchhiking" *The Allied Genetics Conference,* Washington DC, USA

Min J, Desai MM, Weissman DB (June 2021),"Spatial structure alters the allele frequency spectrum produced by hitchhiking" *Annual Meeting of the Society for Molecular Biology & Evolution*, Virtual

Min J, Hsieh D (January 2017), "Investigating metal to insulator phase transition of 5d pyrochlore using pump probe method" *Conference for Undergraduate Women in Physics,* UCLA

Eun YJ, **Min J,** Garner EC (May 2016), "Analysis of archaeal cell shape change induced by mechanical stress" *Boston Bacterial Meeting*, MIT

TEACHING AND RESEARCH MENTORING

Teaching

ENVR 1500 (Introduction to Environmental, Social, and Biological Data), *Guest Lecturer*, Northeastern University	2025 Spring
Biochemistry Research Week, *Mentor and Lecturer*, Wellesley College	2022 Winter
OEB 242 (Population Genetics), *Teaching Fellow*, Harvard University, awarded Certificate of Distinction in Teaching	2021 Spring
AM 203 (Introduction to Disordered Systems and Stochastic Processes), *Teaching Fellow*, Harvard University, awarded Certificate of Distinction in Teaching	2019 Fall
Ph 11 (Freshman Seminar : Research Tutorial), *Teaching Assistant*, Caltech	2016 Fall - 2017 Spring

Research Advising

Graduate students

Camille Rumberger, Ph.D. in Marine and Environmental Sciences candidate, Northeastern University (Spring 2025 - present)

Misha Gupta, Ph.D. candidate in Organismic and Evolutionary Biology, Harvard University (Fall 2020 - Spring 2022)

Undergraduate students

Alex Bangs, B.A. candidate in Biology and Biochemistry, University of Oregon (2023 Fall - 2024 Summer)
Awards: University of Oregon Summer Program for Undergraduate Research fellowship, Annual Biomedical Research Conference for Minoritized Scientists 2024 poster presentation award

Zoe Chapman, B.S. candidate in Data Science and Environmental and Sustainability Sciences, Northeastern University (Spring 2025 - present)
Awards: Northeastern University PEAK fellowship (pending), Honors thesis

Adrian Gushin, B.S. in Computer Science, Emory University (Summer 2022)

PROFESSIONAL SERVICES

Peer Reviews for Society Journals

Molecular Ecology (2025)
Genetics (2025)
Physical Review E (2025)

Other Services to Scientific Societies

Moderator at Population Genetic Theory II session at Evolution (2025 Spring)
Mentor for Undergraduate Diversity at Evolution program (2025 Spring)
Postdoc judge at The Allied Genetics Conference (2024 Spring)

Services to the University

Postdoc judge at University of Oregon, Graduate Research Forum (2023 Spring)
Mentor for Harvard-Smith College AEMES fellows mentorship program (2021 Fall-2022 Spring)
Peer Mentor for Harvard Molecules Cells and Organism Ph.D. program (2019 Fall - 2022 Spring)
Graduate student co-host for Harvard Engineering & Physical Biology Symposium (2019 April)

Outreach

Mentor for Science Club for Girls (2025 Fall - 2026 Spring)
Volunteer for Northeastern University Coastal Ocean Science Academy (2025 July)
Volunteer for High School Marine Science Symposium (2025 March)

PROFESSIONAL MEMBERSHIPS

American Society of Naturalists
Society for Modeling and Theory in Population Biology
Genetics Society of America
American Physical Society