Dong Shin (Chris) You

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Education

Stanford University, *Stanford CA* September 2019 – April 2026
Doctor of Philosophy in Biology. Advisor: Jan Skotheim
Thesis: Cell size dependent gene expression and origins of scaling transcription.

Swarthmore College, *Swarthmore PA* September 2013 – May 2017
Bachelor of Arts with Majors in Biology and Political Science

Laboratory techniques

Bioinformatics: Sample preparation and data analysis for RNAseq, LC-MS/MS, pSILAC-TMT, and SLAMseq
Computation: Python pipelines for large-scale omics and object segmentation and tracking image analysis
Microscopy: High-throughput widefield and confocal microscopy
Cell engineering: CRISPR knock-in of large inserts (2.4kbp); lentivirus, electroporation and lipofection
Cell culture: Differentiation of hESCs into organoids. 6+ years of experience with variety of immortalised lines
Additional assays: Lysosome inhibitor drug assays; qPCR, flow cytometry and FACS

Research Experience

Graduate Student Researcher, *Skotheim Lab (Stanford University)* May 2020 – April 2026
The Skotheim lab is focused on understanding the basis of cell size control and its functional implications

- Deployed modern omics technologies (RNAseq, SLAMseq, SILAC-TMT mass spectrometry) to develop model of coordination of biosynthesis with cell size
- Engineered cell lines with large CRISPR knock-in (~2.4kbp) of mRNA stem loop sequences to visualise transcription in real-time with high-throughput confocal microscopy
- Developed particle tracking algorithm to analyse single molecule microscopy data to understand gene expression changes with cell size
- Discovered lysosome dysfunction with increased cell size in the context of aging and senescence using functional inhibitor assays
- Communicated complex scientific research in two high-impact journals, a major national conference, and undergraduate courses that were recognised for excellence in teaching

Research Assistant, *Brivanlou Lab (Rockefeller University)* July 2017 – July 2019
The Brivanlou lab seeks to understand molecular basis of embryogenesis using human embryonic stem cells

- Applied cell substrates of varying stiffness to model cells in early human embryo
- Devised protocol to create early human spinal cord organoid in 3D culture

Undergraduate Research Assistant, *Davidson Lab (Swarthmore College)* May 2016 – May 2017
The Davidson Lab investigates cardiac development in tunicates in the context of asymmetric cell division

- Independently organised four research projects involving both wet bench and computational work
- Devised protocols to conduct quantitative image analysis from confocal microscopy on IMARIS and ImageJ

Honors and Awards

Excellence in Teaching Award June 2020 and June 2021
Awarded to top teaching assistants who assisted in biology courses that year
Courses: Introduction to Laboratory Research in Cell and Molecular Biology;
Explorations in Stem Cell Biology

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Publications

- **D.S. You**, …, M.C. Lanz, J.M. Skotheim. Cell size-dependent mRNA transcription drives proteome remodeling *Under Review at Cell Reports*, (2025).
- M. Lanz, E. Zatulovskiy, …, **D.S. You**, J.E. Elias, J.M. Skotheim. Increasing cell size remodels the proteome and promotes senescence. *Mol Cell* 82(17):3255-3269 (2022).
- **Chris You**. Science behind cell size: to get big, make more DNA? *The Dish on Science*. (2022).
- M. Simunovic, J. Metzger, …, **D.S. You**, A.H. Brivanlou, E.D. Siggia. A 3D model of a human epiblast reveals BMP4-driven symmetry breaking. *Nat Cell Biol* 21(7):900–910 (2019).

Selected Presentations

Cell Size & Growth Online Seminar, *Virtual* March 2025
Cell Size & Growth is an online seminar series that highlights prominent cell size and growth research
- Selected for a 30-minute presentation to an international audience of ~100 scientists in the field

Title: Cell size increase leads to transcriptome remodelling

Cell Bio 2024, *San Diego* December 2024
Premiere cell biology meeting of the American Society for Cell Biology (ASCB) and European Molecular Biology Organisation (EMBO) that showcases the latest findings in cell biology
- Selected as speaker for subgroup, "Building the Cell", for a 15-minute talk to ~200 scientists

Title: Cell size increase leads to transcriptome remodeling and lysosome vulnerability

Physics of Life Symposium, *Chan Zuckerberg Biohub San Francisco* January 2023
Physics of Life Symposium is a Bay Area meeting that fosters the integration of physics and biology
- Selected for a 15-minute talk to a general scientific audience of ~50 people

Title: Transcriptional control of proteome remodeling with cell size

Selected Leadership & Community Engagement

Departmental seminar series committee ("Think and Drink") September 2021 - June 2023
'Think and Drink' was a weekly departmental-wide seminar series featuring trainees across the department
- Organised and recruited speakers to foster intra-departmental collaboration
- Implemented departmental-wide feedback from various stakeholders to double participation
- Fostered community engagement by combining seminars with social events

Stanford Biology Graduate Admissions Committee 2021, 2022
Graduate student committee members evaluated applications for entry to the Stanford Biology program

Highlighted Skills

Independent problem solving: Proven record of learning and applying new concepts and techniques in lab
Detailed organisation: Planned and executed numerous complicated, long-range experiments
Effective communication: Simplified complex concepts to diverse audience in written and spoken format
Community-focused: Cultivated community engagement and belonging through events organisation

Languages: Korean (fluent), Japanese (intermediate)