

Curriculum Vitae

Gwanggyu Sun

Ph.D. candidate

Covert Lab, Department of Bioengineering, Stanford University

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EDUCATION

- Sep 2017 - Ph.D. student, Department of Bioengineering, Stanford University, CA
• Thesis Advisor: Dr. Markus Covert
- Mar 2010 - Aug 2017 B.S. in Chemical and Biological Engineering, *summa cum laude*, Seoul National University, Seoul, South Korea
(Double Major in Biological Science, Minor in Computer Science & Engineering)

RESEARCH EXPERIENCE

1. Whole-cell modeling
 - Advisor: Dr. Markus Covert, Stanford University

I am currently working as a Ph.D. student with the Covert Lab to build a whole-cell computational model of *E. coli* that integrates the known functions of all genes and molecules inside the cell. My focus is on building a mechanistic submodel for the chromosome and identifying the sources of cellular heterogeneity.
2. Genome-scale metabolic modeling
 - Advisor: Dr. Byung-Gee Kim, Seoul National University

I previously worked as an undergraduate research assistant for the Molecular Biotechnology & Biomaterials Lab, where I contributed to the development of an algorithm that uses genome-scale metabolic models to predict which transcriptional regulatory genes would need to be targeted to enhance the production of biochemicals from engineered microbes [2].
3. Next Generation Sequencing protocols
 - Advisor: Dr. David Zhang, Rice University

I previously worked as a summer research intern for the Nucleic Acid Bioengineering Lab to devise a protocol to enrich Next Generation Sequencing samples with rationally-designed hybridization probes for increased sequencing efficiency.

PUBLICATIONS

- [1] MW Kim, **G Sun**, JH Lee, and BG Kim. "Development of Quenching-qPCR (Q-Q) assay for measuring absolute intracellular cleavage efficiency of ribozyme." *Analytical Biochemistry* (2018)
- [2] M Kim, **G Sun**, DY Lee, and BG Kim. "BeReTa: a systematic method for identifying target transcriptional regulators to enhance microbial production of chemicals." *Bioinformatics* (2016)

TEACHING EXPERIENCE

- Sep 2018 – Dec 2018 Teaching Assistant, Systems Biology (BIOE 101/210), Stanford University
- Mar 2015 – Jun 2015 Teaching Assistant, Basic Chemistry 1 & Basic Biology 1, Seoul National University

HONORS & AWARDS

- Sep 2017 – Aug 2022 Kwanjeong Educational Foundation Overseas Scholarship
- Mar 2014 – Feb 2016 Korea Student Aid Foundation Scholarship
- Mar 2008 – Feb 2012 Samsung Junior Future Leader Scholarship