Hannah Kim

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Research Interest

COMPUTATIONAL BIOLOGY | ALGORITHM DEVELOPMENT | EVOLUTIONARY GENOMICS | VIRAL EVOLUTION

Education

Temple University — *Philadelphia, PA*
PhD Bioinformatics — *08/2019 - current*
- Advisor: Dr. Sergei L Kosakovsky Pond

Carnegie Mellon University — *Pittsburgh, PA*
MS Computational Biology — *08/2015 - 12/2016*

Carnegie Mellon University — *Pittsburgh, PA*
BS Chemistry — *08/2010 - 05/2013*

Relevant Experience

2021-2022 **Bioinformatics Engineer**, Lifetime Omics
2017-2019 **Bioinformatics Analyst / Software Engineer**, Children's Hospital of Philadelphia
2017 **Research Programmer**, Computational Biology Department, Carnegie Mellon University
2016 **Graduate Researcher**, Computational Biology Department, Carnegie Mellon University
2016 **Course Developer**, Computational Biology Department, Carnegie Mellon University
2013-2014 **Post-Baccalaureate Researcher**, Department of Biological Sciences, Carnegie Mellon University
2012-2013 **Undergraduate Student Researcher**, Department of Chemistry, Carnegie Mellon University
2011 **Student Intern, Summer Research Institute**, Department of Biological Sciences, Carnegie Mellon University

Publications

Published

Huzar, J., **Kim, H.**, Kumar, S., Miura, S. (2022). MOCA for integrated analysis of gene expression and genetic variation in single cells. *Frontiers in Genetics*, 13:831040. doi:10.3389/fgene.2022.831040

Ding, Y., **Kim, H.**, Madden, K., Loftus, J., Chen, G., Allen, D., Zhang, R., Xu, J., Chen, C., Xu, Y., Tasian, S., Tan, K. (2021). Network Analysis Reveals Synergistic Genetic Dependencies for Rational Combination Therapy in Philadelphia Chromosome-like Acute Lymphoblastic Leukemia. *Clinical Cancer Research*, 27(18). doi:10.1158/1078-0432.CCR-21-0553

Tarca, A. L., Pataki, B. Á., Romero, R., Sirota, M., Guan, Y., Kutum, R., Gomez-Lopez, N., Done, B., Bhatti, G., Yu, T., Andreoletti, G., Chaiworapongsa, T., **The DREAM Preterm Birth Prediction Challenge Consortium**, Hassan, S. S., Hsu, C., Aghaeepour, N., Stolovitzky, G., Csabai, I., Costello, J. C. (2021). Crowdsourcing assessment of maternal blood multi-omics for predicting gestational age and preterm birth. *Cell Reports Medicine*, 2(6). doi:10.1016/j.xcrm.2021.100323

Ichikawa, Y., Bruno, V. M., Woolford, C. A., **Kim, H.**, Do, E., Brewer, G., Mitchell, A. P. (2021). Environmentally contingent control of Candida albicans cell wall integrity by transcriptional regulator Cup9. *Genetics*, 218 (3). doi: 10.1093/genetics/iyab075

Tao, Y., Rajaraman, A., Cui, X., Cui, Z., Chen, H., Zhao, Y., Eaton, J., **Kim, H.**, Ma, J., Schwartz, R. (2021). Assessing the Contribution of Tumor Mutational Phenotypes to Cancer Progression Risk. *PLOS Computational Biology*, 17(3).

doi:10.1371/journal.pcbi.1008777

He, B., Gao, P., Ding, Y., Chen, C., Chen, G., Chen, C., **Kim, H.**, Tasian, S. K., Hunger, S. P., Tan, K. (2020). Diverse noncoding mutations contribute to deregulation of cis-regulatory landscape in pediatric cancers. *Science Advances*, 6(30). doi:10.1126/sciadv.aba3064

Lin, C., Jain, S., **Kim, H.**, Bar-Joseph, Z. (2017). Using neural networks for reducing the dimensions of single-cell RNA-Seq data. *Nucleic Acids Research*, 45(17). doi:10.1093/nar/gkx681

Preprint

Tao, Y., Rajaraman, A., Cui, X., Cui, Z., Eaton, J., **Kim, H.**, Ma, J., Schwartz, R. (2019). Improving personalized prediction of cancer prognoses with clonal evolution models. *bioRxiv*. doi:10.1101/761510

Presentations

** presenting author*

Contributed Presentations

Kim, H.*, Shank, S., Kosakovsky Pond, S. L. (2022). PRoperty Informed Models of Evolution (PRIME). Poster: The 31st KSEA Northeast Regional Conference, Hybrid

Hu, Y., Chen, C., Ding, Y.*, **Kim, H.**, Tan, K. (2019). Synergistic Control Genes in Cancer Gene Networks as Targets for Combination Therapy. Poster: Children's Hospital of Philadelphia Research Poster day and Scientific Symposium, Philadelphia, PA.

Awards, Fellowships, & Grants

2022	**Selected Attendee Support**, Scientists and Engineers Early Career Development Workshop	*$ 200+*
2022	**KSEA Excellent Poster Award**, The 31st KSEA Northeast Regional Conference	*$ 100*
2022	**CST Three-Minute Thesis Competition 2nd Place Award**, Temple University	*$ 250*
2015	**Departmental Merit Fellowship**, Carnegie Mellon University	*$ 3000*
2013	**Mellon College of Science Research Honors**, Carnegie Mellon University	
2012	**Summer Undergraduate Research Fellowship**, Carnegie Mellon University	*$ 3500*

Doctoral Coursework

F2020 **BIOL-5128 Genomics and Infectious Disease Dynamics**
F2020 **BIOL-8210 Seminar: "Ecoevo discuss"**
F2020 **STAT-8109 Applied Statistics and Data Science**
S2020 **BIOL-5241 Genomics and Evolutionary Biology of Parasites**
S2020 **CIS-5517 Data-Intensive and Cloud Computing**
S2020 **CIS-5523 Knowledge Discovery and Data Mining**
F2019 **BIOL-5111 Genomics in Medicine**
F2019 **BIOL-5466 Topics in Bioinformatics**
F2019 **BIOL-8210 Seminar Biol 8210 at Center for Computational Genetics and Genomics**

Teaching Experience

** awarded Research Assistantship unless otherwise noted*

F2020 **BIOL-3111/5111 Genomics in Medicine**, Teaching Assistant
S2020 **BIOL-1012 General Biology II**, Teaching Assistant
F2019 **BIOL-2112 Introduction to Cellular and Molecular Biology**, Teaching Assistant

Outreach & Professional Development

Leaderships

Temple University Korean Graduate Student Association (TKGSA), Founding Member & Treasurer, *03/2022-*
College of Science and Technology-Graduate Student Organization (CST-GSO), DEI Representative, *12/2021-*
College of Science and Technology Diversity, Equity, and Inclusion Committee, Student Representative, *11/2021-*
Biology Graduate Student Society (BGSS), Vice President, *09/2021-*

Professional Memberships

Korean-American Innovative Technology Engineers and Entrepreneurs (KITEE), *04/2022-*
Society for the Study of Evolution (SSE), *04/2022-*
AnitaB.org, *09/2021-*
Society for Molecular Biology and Evolution (SMBE), *01/2021-*
Korean-American Scientists and Engineers Association (KSEA), *02/2020-*
Philadelphia Korean Scholars Association (PKSA), *06/2019-*

Community Involvement

Frontiers in Oncology, Ad Hoc Reviewer (1x/yr), *2022*
George Washington Carver Science Fair, Science Fair Judge, *03/2022*

Certificates

Matrix Algebra for Engineers, Coursera *2022*
Viruses and How to Beat Them: Cells, Immunity, Vaccines, IsraelX *2022*

Coding Languages

python , R , MATLAB , bash , javascript , GoLang