

Dylan Sosa

Ph.D. Candidate
University of Chicago
Department of Ecology & Evolution

dylansosa@uchicago.edu
dylan.bearblog.dev
manyuanlonglab.uchicago.edu

Education

Ph.D., M.S., Ecology & Evolution

University of Chicago, Chicago, IL

2019 - *present*

Advisor: Manyuan Long

M.S., Bioinformatics & Computational Biology

Saint Louis University, St. Louis, MO

2017 - 2018

Advisor: Dapeng Zhang

B.S., Bioinformatics

St. Edward's University, Austin, TX

2013 - 2017

Advisor: Charles Hauser

Publications

Dylan Sosa, Jianhai Chen, Shengqian Xia, Manyuan Long. tRNA gene repertoires are dynamically constructed.

Manuscript in prep

Anupama K. Puppala, **Dylan Sosa**, Jennifer Castillo Suchkou, Rachel L. French, Malgorzata Dobosz-Bartoszek, Kaitlyn Kiernan, Miljan Simonović. The C-terminal tail of SepSecS regulates the quaternary structure of the terminal complex of selenocysteine synthesis in higher eukaryotes.

Under peer review, Nucleic Acids Research

UnJin Lee, Deanna Arsala, Shengqian Xia, Mujahid Ali, Débora Sobreira, Ittai Eres, **Dylan Sosa**, Jianhai Chen, Patrick Reilly, Alexander Guzzetta, Peter Andolfatto, Qi Zhou, Manyuan Long. The 3-Dimensional Genome Drives the Evolution of Asymmetric Gene Duplicates via Enhancer Capture-Divergence.

Under peer review, Science Advances

Shengqian Xia, Zihan Liang, Yuxin Peng, Yuan Gao, Zhicheng Wang, Yi Wei, **Dylan Sosa**, Yiming Zhang, Chunyan Chen, Yong E. Zhang, Wei Zhang, Jian Zu, Li Zhang. One-third of *Drosophila* orphan genes are putative *de novo* genes.

Under peer review, Molecular Biology & Evolution

Jianhai Chen, Qingrong Li, Shengqian Xia, Deanna Arsala, **Dylan Sosa**, Dong Wang, Manyuan Long. Rapid evolution of *de novo* protein structure.

Genome Biology & Evolution, 2024

Li Zhang, Jonathan J. Park, Matthew B. Dong, Deanna Arsala, Shengqian Xia, Jianhai Chen, **Dylan Sosa**, Jared E. Atlas, Manyuan Long, Sidi Chen. Gene age dating reveals an early and rapid evolutionary construction of the adaptive immune system.
Genome Biology & Evolution, 2023

Krinsky, Benjamin H., Robert K. Arthur, Shengqian Xia, **Dylan Sosa**, Deanna Arsala, Kevin P. White, Manyuan Long. Rapid Cis-Trans Coevolution Driven by a Novel Gene Retroposed from a Eukaryotic Conserved CCR4-NOT Component in *Drosophila*.
Genes, 2022

Yuan Huang, Jiahui Chen, Chuan Dong, **Dylan Sosa**, Shengqian Xia, Yidan Ouyang, Chuanzhu Fan, Dezhu Li, Emily Mortola, Manyuan Long, Joy Bergelson. Species-specific partial gene duplication in *Arabidopsis thaliana* evolved novel phenotypic effects on morphological traits under strong positive selection.
The Plant Cell, 2021

Teaching

University of Chicago

Teaching Assistant, Genomic Evolution	2021
Workshop Assistant, Quantitative Biology	2021
Workshop Assistant, Defensive Programming	2020

St. Edward's University

Laboratory Teaching Assistant, Cell Biology	2016 - 2017
Tutor, Biology	2016 - 2017
Tutor, Computer Science	2016 - 2017
Teaching Assistant, Science Writing	2015 - 2016
Teaching Assistant, Rhetoric & Composition II	2014

Awards & Fellowships

NSF Rising Scientist Award

Genetics Society of America	2024
-----------------------------	------

Henry Hinds Fund for Graduate Research in Evolutionary Biology

Committee on Evolutionary Biology, University of Chicago	2022
--	------

BSD Travel Award

Biological Sciences Division, University of Chicago	2022
---	------

NIH T32 Genetic Mechanisms & Evolution Training Grant

T32GM139782, University of Chicago	2021-2022
------------------------------------	-----------

Rstudio::conf(2020) Diversity Scholarship

RStudio, Inc.	2020
---------------	------

NIH T32 Genetics & Regulation Training Grant

	T32GM007197, University of Chicago	2019-2021
	Biological Sciences Division Summer Research Fellowship University of Chicago	2019
	Graduate Research Assistantship Saint Louis University	2017 - 2018
	NSF Bioinformatics Training with Industry Support and Engagement (BITWISE) Scholarship Saint Louis University	2017 - 2018
	Best Oral Presentation Award: Molecular Biology Texas Academy of Science	2016
	Brother Romard Barthel, CSC '47 Endowed Scholarship St. Edward's University	2016
	Best Poster Presentation Award: Botany Texas Academy of Science	2015
	Opportunities in Genomics Research: Undergraduate Scholars Fellowship McDonnell Genome Institute, Washington U. School of Medicine	2015
	Dean's Excellence Scholarship St. Edward's University	2013 - 2017
	National Scholarship League of United Latin American Citizens	2013
Service & Outreach	Divisional Representative Graduate Council, University of Chicago	2021 - 2022
	Faculty Search Committee Member Department of Ecology & Evolution, University of Chicago	2021 - 2022
	Student Admissions Committee Member Department of Ecology & Evolution, University of Chicago	2021
	E & E Graduate Program Representative Biological Sciences Dean's Council, University of Chicago	2019 - 2022
	Faculty Search Committee Undergraduate Member School of Natural Sciences, St. Edward's University	2017
	President, Co-founder	

Society for Computational Biology, St. Edward's University 2016 - 2017

Presentations **Dylan Sosa**, Jianhai Chen, Manyuan Long. Origination and evolution of transfer RNA genes in *Drosophila*.

†*oral* ‡*poster* Society for Molecular Biology and Evolution Conference[‡] 2023

Dylan Sosa & Manyuan Long. Origination and evolution of transfer RNA genes in *Drosophila*.

64th Annual *Drosophila* Research Conference[†] 2023

Dylan Sosa & Manyuan Long. Predicting Gene Essentiality in Non-Model *Drosophila* Species to Understand Phenotypic Evolution of New Genes.

63rd Annual *Drosophila* Research Conference[‡] 2022

Sosa, D., McNulty, S., Rosa, B, Fischer, P., Agatsuma, T., Sugiyama, H., Mitreva, M. Comparative Genomic Analysis of Two *Paragonimus* Species

Annual Biomedical Research Conference for Minority Students[†] 2016

Texas Academy of Science[†] 2015

Sosa D., Hauser, C. Analysis of fungal and bacterial root microbiomes of *C. planostachys* (*Cyperaceae*)

Annual Biomedical Research Conference for Minority Students[‡] 2015

Texas Academy of Science[‡] 2014

Languages & Skills English (native), Catalan, Spanish
shell, python, R, java, L^AT_EX, HTML, CSS

Journal Reviewing *Nature Genetics*
Genes

Society Memberships Genetics Society of America
Society for Molecular Biology & Evolution
Society for the Study of Evolution