

Curriculum Vitae

Stephanie M. Yan

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Education

- 2018–2024 **Johns Hopkins University**, Baltimore, MD
PhD Program in Cell, Molecular, Developmental Biology, and Biophysics (CMDB)
- 2014–2018 **Cornell University**, Ithaca, NY
B.A. in Biological Sciences with Distinction in all Subjects; Linguistics Minor
Honors Thesis in Molecular & Cell Biology, *magna cum laude*
GPA: 3.84 / 4.00

Research experience

- 2024–pres. **Postdoctoral Fellow**, Johns Hopkins University, Baltimore, MD
Advisor: Rajiv McCoy
• Leading a three-lab collaboration to generate and analyze paired long-read transcriptomics and proteomics data from geographically diverse human samples.
- 2019–2024 **Graduate Researcher**, Johns Hopkins University, Baltimore, MD
Advisor: Rajiv McCoy
• Investigated the role of genomic structural variants in the evolutionary history of human populations, the divergence between humans and archaic hominin species, and variation in gene expression.
• Dissertation: Insights into human genetics and evolution from structurally complex genomic regions.
- 2016–2018 **Undergraduate Researcher**, Cornell University, Ithaca, NY
Advisor: Scott Emr
• Studied the regulation of transmembrane nutrient transporters by arrestin-family proteins in *Saccharomyces cerevisiae*.
• Honors thesis: Mutations on the cytoplasmic face of the transmembrane protein Mup1 blockdownregulation by the Art1-Rsp5 ubiquitin ligase complex.
- 2015 **Research Trainee**, H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL
Advisor: Shengyu Yang
• Characterized the impact of deoxyguanosine kinase (DGUOK), a mitochondrial protein, on the regulation of cancer metabolism and metastasis.

Publications

RESEARCH AND REVIEW ARTICLES (PEER REVIEWED)

- 2023 Taylor, D. J., Chhetri, S. B., Tassia, M. G., Biddanda, A. A., Yan, S. M., Wojcik, G. L., Battle, A. J., & McCoy, R. C. Sources of gene expression variation in a globally diverse human cohort (2024). *bioRxiv*, DOI: [10.1101/2023.11.04.565639](https://doi.org/10.1101/2023.11.04.565639).
- 2023 DeGorter, M. K.*, Goddard, P. C.*, Karakoc, E., Kundu, E., Kundu, S., Yan, S. M., ... , & Montgomery, S. B. Transcriptomics and chromatin accessibility in multiple African population samples (2023). *bioRxiv*, DOI: [10.1101/2023.11.04.564839](https://doi.org/10.1101/2023.11.04.564839).
- 2023 DeBoy, E. A.*, Tassia, M. G.*, Schratz, K. E., Yan, S. M., Cosner, Z. L., McNally, E. J., Gable, D. L., Xiang, Z., Lombard, D. B., Antonarakis, E. S., Gocke, C. D., McCoy, R. C., & Armanios, M. (2023). Familial Clonal Hematopoiesis in a Long Telomere Syndrome. *NEJM*, 388:2422-2433. DOI: [10.1056/NEJMoa2300503](https://doi.org/10.1056/NEJMoa2300503).
- 2022 Aganezov, S.*, Yan, S. M.*, Soto, D. C.*, Kirsche, M.*, Zarate, S.*, Avdeyev, P., Taylor, D. J., Shafin, K., Shumate, A., Xiao, C., Wagner, J., McDaniel, J., Olson, N. D., Sauria, M. E. G., Vollger, M. R., Rhie, A., Meredith, M., Martin, S., Koren, S., Rosenfeld, J. A., Paten, B., Layer, R., Chin, C., Sedlazeck, F. J., Hansen, N. F., Miller, D. E., Phillippy, A. M., Miga, K. H., & McCoy, R. C.*, Dennis, M. Y.*, Zook, J. M.*, Schatz, M. C.* (2022). A complete reference genome improves analysis of human genetic variation. *Science*, 376(6588): 54, DOI: [10.1126/science.abl3533](https://doi.org/10.1126/science.abl3533).
- 2022 Nurk, S.*, Koren, S.*, Rhie, A.*, Rautiainen, M.*, ... , Yan, S. M., ... , & Eichler, E. E.*, Miga, K. H.*, Phillippy, A. M.* (2022). The complete sequence of a human genome. *Science*, 376(6588): 44–53, DOI: [10.1126/science.abj6987](https://doi.org/10.1126/science.abj6987).
- 2021 Ariad, D., Yan, S. M., Victor, A. R., Barnes, F. L., Zouves, C. G., Viotti, M., & McCoy, R. C. (2021). Haplotype-aware inference of human chromosome abnormalities. *Proceedings of the National Academy of Sciences*, 118(46): e2109307118. DOI: [10.1073/pnas.2109307118](https://doi.org/10.1073/pnas.2109307118)
- 2021 Yan, S. M., Sherman, R. M., Taylor, D. J., Nair, D. R., Bortvin, A. N., Schatz, M. C., & McCoy, R. C. (2021). Local adaptation and archaic introgression shape global diversity at human structural variant loci. *eLife*, 10: e67615. DOI: [10.7554/eLife.67615](https://doi.org/10.7554/eLife.67615).
- 2020 Yan, S. M. & McCoy, R. C. (2020). Archaic hominin genomics provides a window into gene expression evolution. *Current Opinion in Genetics & Development*, 62: 44–49. DOI: [10.1016/j.gde.2020.05.014](https://doi.org/10.1016/j.gde.2020.05.014).

EDITORIALS AND COMMENTARIES

- 2023 Soto, D.C.*, Kirsche, M.K.*, Yan, S. M.*, Zarate, S.*. (2022), The human reference genome is finally complete. *The Science Breaker*. DOI: [10.25250/thescbr.brk721](https://doi.org/10.25250/thescbr.brk721).
- 2019 Yan, S. M. & McCoy, R. C. (2019), Functional divergence among hominins. *Nature Ecology & Evolution*, 3: 1507–1508. DOI: [10.1038/s41559-019-0995-y](https://doi.org/10.1038/s41559-019-0995-y).

*Equal contribution

Presentations

ORAL PRESENTATIONS

- 2022 **JHU CMDDB Program Retreat**, Harpers Ferry, VA
Local adaptation and archaic introgression at human structural variant loci

- 2022 **T2T-F2F**, Santa Cruz, CA (flash talk)
Human genetic diversity within challenging regions of the genome
- 2022 **Advances in Genome Biology and Technology**, Orlando, FL (selected abstract)
A complete reference genome improves analysis of human genetic variation
- 2021 **eLife Symposium: Evolutionary Medicine** (virtual)
Local adaptation and archaic introgression at human structural variant loci
- 2021 **Cold Spring Harbor Laboratory: Biology of Genomes** (virtual)
Local adaptation and archaic introgression at human structural variant loci
- 2020 **American Society of Human Genetics** (virtual)
The role of structural variation in human local adaptation
- *2020 **Society for Molecular Biology & Evolution**, Québec City, Canada
The role of structural variation in human local adaptation

**Cancelled due to COVID-19*

POSTER PRESENTATIONS

- 2024 **Cold Spring Harbor Laboratory: Biology of Genomes**, Cold Spring Harbor, NY
A high-resolution view of human gene expression and splicing diversity with long-read sequencing
- 2023 **American Society of Human Genetics**, Washington D.C.
A high-resolution view of human gene expression and splicing diversity with long-read sequencing
- 2023 **Society for Molecular Biology & Evolution**, Ferrara, Italy (virtual)
Evolutionary simulations inform the origins of clonal hematopoiesis
- 2020 **The Allied Genetics Conference** (virtual)
The role of structural variation in human local adaptation
- 2019 **13th Annual Genomics and Bioinformatics Symposium**, Baltimore, MD
Structural genomic divergence and introgression in hominin evolution
- 2019 **Society for Molecular Biology & Evolution**, Manchester, U.K.
Structural genomic divergence and introgression in hominin evolution
- 2018 **Biological Sciences Honors Symposium**, Ithaca, NY
Regulation of plasma membrane proteins by the Art1-Rsp5 ubiquitin ligase complex

Grants

- 2022–2024 **NIH/NHGRI F31: Ruth L. Kirschstein Predoctoral National Research Service Award**
PI: Stephanie Yan
Title: "Investigating the role of structural variation in hominin evolution."
- 2022–2024 **JHU Discovery Award: JHU grants for cross-divisional collaborations**
PIs: Rajiv McCoy, Winston Timp, Alexis Battle
Title: "A high-resolution view of human gene expression and splicing diversity with single-molecule long- read sequencing."
- 2021–2023 **Technology Fellowship Grant: JHU Center for Teaching Excellence and Innovation**
PIs: Rajiv McCoy, Stephanie Yan, Kate Weaver
Title: "Cloud-based modules for interactive exploration of human genomic variation."

Fellowships, honors, & awards

2023	Margolies Travel Award; JHU CMDB Program
2022	Ruth L. Kirschstein National Research Service Award (NRSA) Fellowship; NHGRI
2020	Technology Fellowship Grant; JHU Center for Educational Resources
2020	Travel Grant; JHU Graduate Representative Organization
2020	Honorable Mention; NSF Graduate Research Fellowships Program
2019	Adam T. Bruce Fellowship; Johns Hopkins University
2019	Registration Award; Society for Molecular Biology & Evolution
2014–2018	Tanner Dean's Scholar; Cornell University
2017	Book Prize for Neuropathology; St Catherine's College, University of Oxford (study abroad)

Teaching

2019–2024	Guest Lecturer, Human Genome Variation Lab, Johns Hopkins University
2021–2023	Tutor, Quantitative Biology Lab, Johns Hopkins University
2023	Guest Speaker, Population Genetics Simulation and Visualization, Johns Hopkins University
2021–2023	Technology Fellow, Human Genome Variation Lab, Johns Hopkins University
2020–2022	Teaching Assistant, Quantitative Biology Bootcamp, Johns Hopkins University
2022	Guest Lecturer, Human Genome Variation, Johns Hopkins University
2020	Teaching Assistant, Quantitative Biology Lab, Johns Hopkins University
2019–2020	Teaching Assistant, Developmental Genetics Lab, Johns Hopkins University

Research mentoring

PHD ROTATION STUDENTS

2023	Betty Huang, JHU CMDB program
2023	Catherine Brown, JHU CMDB program
2023	Emily Shen, JHU CMDB program
2022	J. Noah Workman, JHU SOM Human Genetics program
2019	Sara Carioscia, JHU CMDB program

UNDERGRADUATE

2020–2023	Divya Nair, Johns Hopkins University
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HIGH SCHOOL

2020–2021	Miles Fancher, Ingenuity Project, Baltimore Polytechnic Institute
2020–2021	Aram Zaprosoyan, Ingenuity Project, Baltimore Polytechnic Institute

Academic service

ACADEMIC SERVICE

- 2018–2024 **BioRep**, CMDB Program, Johns Hopkins University
- Advocated for the graduate student body to the CMDB administration. Served as channel of communication between the students and program directors.
 - Led initiatives to address department climate issues, improvements to the graduate TAing system, and concerns about returning to research during the COVID-19 pandemic.
- 2023 **CMDB Representative**, NIH Graduate & Professional School Fair, Bethesda, MD
- 2020–2023 **Organizing Committee**, CMDB symBIOsis, Johns Hopkins University
- Founding member of symBIOsis, an organization dedicated to supporting current CMDB graduate students.
 - Responsible for organizing the BioBuddies peer mentorship program, advising meetings on program requirements, and social events for CMDB graduate students.
 - Served as the symBIOsis Accountability Leader for two years, managing the organization's committee members, events, and communications with JHU administration.
- 2021 **Session Moderator**, American Society of Human Genetics (virtual)
Session: Introgression and population structure in the age of genomic biobanks
- 2020 **James Taylor Memoriam Committee**, Johns Hopkins University
- Led the creation and maintenance of jtx-memorial.github.io, a memorial website for Prof. James Taylor in the Department of Biology.
- 2019 **Session Chair**, Johns Hopkins CMDB Program Retreat, Fairfield, PA

PEER MENTORSHIP

- 2019–2023 **BioBuddies Mentor**, CMDB symBIOsis, Johns Hopkins University
- 2019–2020 **BioBuddies Program Co-Chair**, CMDB MInDS, Johns Hopkins University
- 2019 **Biology REU Mentor**, CMDB MInDS, Johns Hopkins University
- 2016–2017 **College of Arts & Sciences Peer Advisor**, Cornell University

Volunteer work & outreach

- 2018–2023 **2018 Class Correspondent**, Cornell Association of Class Officers
- Developed communications and events, including a quarterly newsletter, Instagram account, and quarterly updates in the Cornell Alumni Magazine, to maintain engagement with alumni from the Class of 2018.
- 2019–2020 **Webmaster & Social Media Chair**, CMDB MInDS, Johns Hopkins University
- Maintained website and social media accounts for Mentoring to Inspire Diversity in Science (MInDS), a group that organizes community outreach and student support activities for members of the biology department.
 - Helped lead the 2020 restructuring of MInDS into two groups, one (MInDS) focusing on outreach and diversity and the other (symBIOsis) focusing on student support.

Technical writing & editing

- 2015–2018 **Assistant News Editor, Print Designer, & Staff Writer**, *The Cornell Daily Sun*, Ithaca, NY

- Wrote for, edited, and designed *The Sun*, an independent, student-run paper and the primary source of news on the Cornell campus.
- Collaborated in a six-person news editor team to publish the paper's daily news section, cover breaking news, assign long-term investigative pieces, train writers, and hold semiweekly workshops.

2015–2018

Managing Editor, Copy Editor, & Staff Writer, *The Research Paper*, Ithaca, NY

- Wrote for and edited a student-run magazine on undergraduate research at Cornell.
- Recruited researchers to be featured; trained new writers; and corrected articles for grammar, clarity, and technical accuracy.

2017

Staff Writer, *Bang! Science Magazine*, Oxford, U.K.

- Wrote feature pieces explaining newly published research to a non-scientist readership.

2015

Editorial Intern, *Familius*, Sanger, CA

- Worked with authors to edit nonfiction manuscripts at the substantive editing, copy editing, and proofreading stages.
- Credited as the primary editor on three *Familius* titles.