

Marcus William Fedarko

Contact	Email: mfedarko@ucsd.edu Webpage: https://fedarko.github.io Office: CSE 4250	
Education	PH.D. STUDENT, Computer Science University of California, San Diego GPA: 3.60/4.0	9/2018–Present La Jolla, CA
	M.S., Computer Science University of California, San Diego GPA: 3.60/4.0	9/2018–6/2022 La Jolla, CA
	B.S. WITH HIGH HONORS, Computer Science University of Maryland GPA: 3.81/4.0	9/2014–5/2018 College Park, MD
Refereed Publications	<ol style="list-style-type: none">7. Fedarko MW, Kolmogorov M, and Pevzner PA (2022). “Analyzing rare mutations in metagenomes assembled using long and accurate reads.” <i>Genome Research</i>, 32(11-12):2119–2133.6. Cantrell K*, Fedarko MW*, Rahman G, McDonald D, Yang Y, Zaw T, Gonzalez A, Janssen S, Estaki M, Haiminen N, Beck KL, Zhu Q, Sayyari E, Morton JT, Armstrong G, Tripathi A, Gauglitz JM, Marotz C, Matteson NL, Martino C, Sanders JG, Carrieri AP, Song SJ, Swofford AD, Dorrestein PC, Andersen KG, Parida L, Kim H-C, Vázquez-Baeza Y, and Knight R (2021). “EMPress Enables Tree-Guided, Interactive, and Exploratory Analyses of Multi-omic Data Sets.” <i>mSystems</i>, 6(2):e01216-20. (* = contributed equally)5. Huey SL, Jiang L, Fedarko MW, McDonald D, Martino C, Ali F, Russell DG, Udipi SA, Thorat A, Thakker V, Ghugre P, Potdar RD, Chopra H, Rajagopalan K, Haas JD, Finkelstein JL, Knight R, and Mehta S (2020). “Nutrition and the Gut Microbiota in 10- to 18-Month-Old Children Living in Urban Slums of Mumbai, India.” <i>mSphere</i>, 5(5):e00731-20.4. Fedarko MW, Martino C, Morton JT, González A, Rahman G, Marotz CA, Minich JJ, Allen EA, and Knight R (2020). “Visualizing ’omic feature rankings and log-ratios using Qurro.” <i>NAR Genomics and Bioinformatics</i>, 2(2):lqaa023.3. Sanders JG, Nurk S, Salido RA, Minich J, Xu ZZ, Martino C, Fedarko M, Arthur TD, Chen F, Boland BS, Humphrey GC, Brennan C, Sanders K, Gaffney J, Jepsen K, Khosroheidari M, Green C, Liyange M, Dang JW, Phelan VV, Quinn RA, Bankevich A, Chang JT, Rana TM, Conrad DJ, Sandborn WJ, Smarr L, Dorrestein PC, Pevzner PA, and Knight R (2019). “Optimizing sequencing protocols for leaderboard metagenomics by combining long and short reads.” <i>Genome Biology</i>, 20(1):226.2. Ghurye J, Treangen T, Fedarko M, Hervey WJ, and Pop M (2019). “MetaCarvel: linking assembly graph motifs to biological variants.” <i>Genome Biology</i>, 20(1):174.1. Meisel JS, Nasko DJ, Brubach B, Cepeda-Espinoza V, Chopyk J, Corrada-Bravo H, Fedarko M, Ghurye J, Javkar K, Olson ND, Shah N, Allard SM, Bazinet AL, Bergman NH, Brown A, Caporaso JG, Conlan S, DiRuggiero J, Forry SP, Hasan NA, Kralj J, Luethy PM, Milton DK, Ondov BD, Preheim S, Ratnayake S, Rogers SM, Rosovitz MJ, Sakowski EG, Schliebs NO, Sommer DD, Ternus KL, Uritskiy G, Zhang SX, Pop M, and Treangen TJ (2018). “Current progress and future opportunities in applications	

of bioinformatics for biodefense and pathogen detection: Report from the Winter Mid-Atlantic Microbiome Meet-up, College Park, MD January 10th, 2018.” *Microbiome*, 6(1):197.

Outreach Presentations	3. “Studying microbiomes using DNA sequencing.” Presentation to students from Kearny High School visiting UC San Diego, 5/2023.	
	2. “Visualizing, Exploring, and Understanding Microbiome Sequencing Data.” UC San Diego CSE Research Open House, 1/2020.	
	1. “Visualizing Metagenomic Assembly Graphs, Doing Undergrad Research at UMD, Applying to Grad Schools, and probably other stuff along the way.” Guest presentation for CMSC 396H (University of Maryland undergraduate honors seminar), 4/2018.	
Service	5. System Administrator, Pevzner Lab computing server	2/2023–Present
	4. Mentor, UC San Diego GradWIC mentorship program	10/2021–Present
	3. Moderator, QIIME 2 forum (https://forum.qiime2.org)	3/2020–Present
	2. Co-organizer, UC San Diego CSE Visit Day	2019, 2020, 2021, 2022, 2023
	1. Code Review (Co-)organizer, Knight Lab	12/2018–8/2020
Research Experience	GRADUATE STUDENT RESEARCHER	9/2018–Present
	University of California, San Diego	La Jolla, CA
	• Designing software for the analysis of metagenomic sequencing data and other forms of “omic” data.	
	• Assisting with various software and analysis projects.	
	RESEARCH INTERN	6/2016–8/2018
	University of Maryland	College Park, MD
	• Designed MetagenomeScope, an interactive visualization tool for metagenome assembly graphs: see https://marbl.github.io/MetagenomeScope .	
	TEACHING ASSISTANT	
	University of California, San Diego	La Jolla, CA
	• CSE 282 : Introduction to Bioinformatics Algorithms	1/2023–3/2023 1/2022–3/2022 1/2021–3/2021
Teaching Experience	COURSE ASSISTANT	
	Marine Biological Laboratory	Woods Hole, MA
	• STAMPS : Strategies and Techniques for Analyzing Microbial Population Structures	7/2018–8/2018
	• MOLE : Workshop on Molecular Evolution	7/2018
	TEACHING ASSISTANT	
	University of Maryland	College Park, MD
	• CMSC 330 : Organization of Programming Languages	8/2016–12/2016
	STUDENT STAFF WRITER	1/2015–9/2017
	University of Maryland Dept. of Computer Science	College Park, MD
	• Composed and edited articles for the department’s website and other media.	
	• Assisted with the logistics of various department outreach functions.	

STUDENT INTERN 5/2013–8/2014
Axiometric Columbia, MD

- Designed a graphical interface to an RF propagation model to assist clients in planning deployments of mesh networks of utility meters.
- Aided in the creation and maintenance of other utility meter deployment management software.

INTERN SOFTWARE ENGINEER 7/2012–8/2012
Battlefield Telecommunications Systems Columbia, MD

- Designed a web interface to monitor the connection strength of radio devices.
- Helped integrate this functionality into the company's existing network management user interface.

**Honors and
Awards**

- | | |
|---|------------|
| 9. University of Maryland CMNS Dean's List | 2014–2018 |
| 8. University of Maryland Honors College University Honors Citation | 2017 |
| 7. Rita Colwell Travel Fellowship | 2017 |
| 6. Travel Award, U. of Michigan "Explore Graduate Studies" Workshop | 2017 |
| 5. John D. Gannon Endowed Scholarship | 2017 |
| 4. Corporate Partners in Computing Scholarship | 2016, 2017 |
| 3. Omicron Delta Kappa National Leadership Honor Society | 2016 |
| 2. Northrop Grumman Scholarship for Employees' Children | 2014 |
| 1. University of Maryland Dean's Scholarship | 2014 |