

Marcus William Fedarko

Contact	Email: mfedarko@ucsd.edu Webpage: https://fedarko.github.io	
Education	PH.D. STUDENT, Computer Science University of California, San Diego GPA: 3.50/4.0	9/2018–Present San Diego, 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">4. Fedarko, M. W., Martino, C., Morton, J. T., González, A., Rahman, G., Marotz, C. A., Minich, J. J., Allen, E. A., and Knight, R. (2020). “Visualizing ’omic feature rankings and log-ratios using Qurro.” <i>NAR Genomics and Bioinformatics</i>, 2(2):lqaa023.3. Sanders, J. G., Nurk, S., . . . , Fedarko, M., . . . , and Knight, R. (31 authors, 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, W. J., and Pop, M. (2019). “MetaCarvel: linking assembly graph motifs to biological variants.” <i>Genome Biology</i>, 20(1):174.1. Meisel, J. S., Nasko, D. J., . . . , Fedarko, M., . . . , and Treangen, T. J. (36 authors, 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.” <i>Microbiome</i>, 6(1):197.	
Poster Presentations	<ol style="list-style-type: none">2. Fedarko, M. W., Martino, C., Morton, J. T., González, A., Marotz, C. A., Minich, J. J., Allen, E. A., and Knight, R. (2019). “Visualizing ’omic feature rankings and log-ratios using Qurro.” Presented at the <i>2019 CRISP Annual Review</i>, Charlottesville, VA, USA.1. Fedarko, M., Ghurye, J., Treangen, T., and Pop, M. (2017; 2018). “Metagenome-Scope: Web-Based Hierarchical Visualization of Metagenome Assembly Graphs.” Presented at the <i>25th International Symposium on Graph Drawing and Network Visualization</i>, Boston, MA, USA; and at the <i>2018 Winter Mid-Atlantic Microbiome Meet-up (M³)</i>, College Park, MD, USA.	
Outreach Presentations	<ol style="list-style-type: none">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 talk for CMSC 396H (U. of Maryland undergraduate honors seminar), 4/2018.	
Research Experience	GRADUATE STUDENT University of California, San Diego <ul style="list-style-type: none">• Advisor: Rob Knight• Designing visualization software for microbiome sequencing data and other forms of “omic” data.	9/2018–Present San Diego, CA

- Assisting with various software and analysis projects.

RESEARCH INTERN

6/2016–8/2018

University of Maryland

College Park, MD

- **Advisors:** Mihai Pop, Todd Treangen
- Designed MetagenomeScope, an interactive visualization tool for metagenome assembly graphs: see <https://marbl.github.io/MetagenomeScope/>.

Teaching Experience

COURSE ASSISTANT

7/2018–8/2018

Marine Biological Laboratory

Woods Hole, MA

- **Courses:** Workshop on Molecular Evolution (MOLE); Strategies and Techniques for Analyzing Microbial Population Structures (STAMPS)
- Assisted with basic logistics for both courses (i.e. mostly making coffee).
- Helped students during some of the “laboratory” sections of the STAMPS course, including tutorials on Unix and Git.
- Prepared and gave a roughly hour-long presentation (including a tutorial) on MetagenomeScope during the STAMPS course as part of Todd Treangen’s session on “Graph-based variant detection and strain-level analyses.”

UNDERGRADUATE TEACHING ASSISTANT

8/2016–12/2016

University of Maryland Dept. of Computer Science

College Park, MD

- **Course:** CMSC 330 (“Organization of Programming Languages”)
- Assisted students with coursework (Ruby, OCaml, Prolog; grammars, regular languages, semantics, security) in office hours and on an online discussion board.
- Designed and graded quiz and exam questions.

Professional Experience

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 Fall 2014–Spr. 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

