

Marcus William Fedarko

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Education	PH.D. STUDENT, Computer Science University of California, San Diego GPA: 3.60/4.0	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.	
Service	<ol style="list-style-type: none">3. Moderator, QIIME 2 forum (https://forum.qiime2.org)2. Bioinformatics Group Co-Lead, UC San Diego CSE Visit Day1. Code Review (Co-)Organizer, Knight Lab	3/2020–Present 2019, 2020 12/2018–Present

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. • Assisting with various software and analysis projects. 	9/2018–Present San Diego, CA
	RESEARCH INTERN University of Maryland <ul style="list-style-type: none"> • Advisors: Mihai Pop, Todd Treangen • Designed MetagenomeScope, an interactive visualization tool for metagenome assembly graphs: see https://marbl.github.io/MetagenomeScope. 	6/2016–8/2018 College Park, MD
	COURSE ASSISTANT Marine Biological Laboratory <ul style="list-style-type: none"> • 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.” 	7/2018–8/2018 Woods Hole, MA
Teaching Experience	UNDERGRADUATE TEACHING ASSISTANT University of Maryland Dept. of Computer Science <ul style="list-style-type: none"> • 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. 	8/2016–12/2016 College Park, MD
	STUDENT STAFF WRITER University of Maryland Dept. of Computer Science <ul style="list-style-type: none"> • Composed and edited articles for the department’s website and other media. • Assisted with the logistics of various department outreach functions. 	1/2015–9/2017 College Park, MD
	STUDENT INTERN Axiometric <ul style="list-style-type: none"> • 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. 	5/2013–8/2014 Columbia, MD
Professional Experience	INTERN SOFTWARE ENGINEER Battlefield Telecommunications Systems <ul style="list-style-type: none"> • 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. 	7/2012–8/2012 Columbia, MD
	9. University of Maryland CMNS Dean’s List	Fall 2014–Spr. 2018
	8. University of Maryland Honors College University Honors Citation	2017
Honors and Awards	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