

Kristen Curry

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Objective	Develop software applications for effective research on microbial communities and host response
Education	William Marsh Rice University – PhD Computer Science, 2020-present; 3.9/4.0 Advisor: Dr. Todd Treangen Relevant Courses: Bioinformatics: Sequence Analysis (A+); Comp. Genomics for Microbial Forensics (A+) TA: Algorithms, Complexity and Approximations; Principles of Programming Languages Leadership: mentored 6 undergraduate students in bioinformatics research University of California, Berkeley – BA Computer Science, 2011-2015; 3.4/4.0 Relevant Courses: Efficient Algorithms and Intractable Problems (A); Algorithms in Computational Biology (A)
Research Visits	Institut Pasteur – Evolutionary Genomics of Microbes Unit, Summer 2022 Advisor: Dr. Eduardo Rocha Project: Establishing rules governing gene transfer for cooperation and resilience in microbial communities
Scholarships & Awards	Rice University COMP600 research presentation Instructional Team Award, 2022 Rice University Institute of Biosciences and Bioengineering Travel Award top prize, 2022 James T. Wagoner '29 Foreign Study Scholarship recipient, 2022 Ken Kennedy Institute Computational Science & Engineering Recruiting Fellowship, 2020 Gadsby-Trudgett Scholarship, 2014 University of California Berkeley Dean's Honors Award, 2012
Publications	Curry, K. D., Wang, Q., Nute, M. G., Tyshaieva, A., Reeves, E., Soriano, S., Wu, Q., Graeber, E., Finzer, P., Mendling, W., Savidge, T., Villapol, S., Dilthey, A., & Treangen, T. J. (2022). Emu: Species-level microbial community profiling of full-length 16S rRNA Oxford Nanopore sequencing data. <i>Nature Methods</i> , 19(7), Article 7. Curry, K. D., Nute, M. G., & Treangen, T. J. (2021). It takes guts to learn: Machine learning techniques for disease detection from the gut microbiome. <i>Emerging Topics in Life Sciences</i> , ETL20210213. Soriano, S., Curry, K., Wang, Q., Chow, E., Treangen, T. J., & Villapol, S. (2022). Fecal Microbiota Transplantation Derived from Alzheimer's Disease Mice Worsens Brain Trauma Outcomes in Wild-Type Controls. <i>International Journal of Molecular Sciences</i> , 23(9), Article 9. Soriano, S., Curry, K., Sadrameli, S. S., Wang, Q., Nute, M., Reeves, E., Kabir, R., Wiese, J., Criswell, A., & Schodrof, S. (2022). Alterations to the gut microbiome after sport-related concussion in a collegiate football players cohort: A pilot study. <i>Brain, Behavior, & Immunity-Health</i> , 21, 100438. Jochum, M., Lee, M. D., Curry, K., Zaksas, V., Vitalis, E., Treangen, T., Aagaard, K., & Ternus, K. L. (2022). Analysis of bronchoalveolar lavage fluid metatranscriptomes among patients with COVID-19 disease. <i>Scientific Reports</i> , 12(1), Article 1.
Invited Talks & Posters	"Emu: species-level microbial community profiling for full-length 16S rRNA Oxford Nanopore Sequencing Data" poster at Nanopore Community Meeting, 2022 "Emu: species-level microbial community profiling for full-length 16S rRNA Oxford Nanopore Sequencing Data" poster at AI in Health Conference, 2022 "Emu: species-level microbial community profiling for full-length 16S rRNA Oxford Nanopore Sequencing Data" talk at Fall Texas Branch American Society for Microbiology (ASM) meeting, 2022 "Predicting HGT events from metagenomic reads in hot spring microbial mats" talk at Hot Spring Microbial Mat Symposium, 2022 "Emu: species-level microbial community profiling for full-length Nanopore 16S reads" poster at 5 th Annual Texas Medical Center Antimicrobial Resistance & Stewardship Conference, 2022 "Emu: species-level microbial community profiling for full-length Nanopore 16S reads" talk at Ken Kennedy AI and Data Science Conference, 2021 "Open-source bioinformatics and biocuration platforms for COVID-19 metatranscriptomes" talk at World Microbe Forum by ASM & Federation of European Microbiological Studies, 2021 "Sensitive and accurate microbial community profiling of full-length 16S rRNA reads with Emu" poster at London Calling by Oxford Nanopore Technologies, 2021

Academic Projects	<i>Interpolated Markov model for cell type classification</i> (Python, independent, 2020) Incorporated machine-learning Markov model for real-time classification of transcriptomic paired-end reads	
	<i>Bandits animated short film</i> (Maya, team of 12, 2015) https://youtu.be/DssS3vTIDao ; created animated short film with realistic material effects	
	<i>Cloth simulation</i> (C++, OpenGL, team of 4, 2013) https://youtu.be/F54oisLo81I ; demonstrated life-like object interactions by spring-mass modeling system	
Work Experience	STEM Camp Instructor <i>Tapia Camps</i>	Houston, TX June-July 2021
	<ul style="list-style-type: none"> Instructed students ages 11-16 in STEM-related activities Catered curriculum to improve representation of underrepresented minority populations 	
	Software Engineer <i>Somalagic, Inc.</i>	Boulder, CO Sept 2018-May 2020
	<ul style="list-style-type: none"> Developed scalable framework for exhaustive automated API testing using REST Assured library Designed end-to-end test through microservice architecture; incorporated scripts for AWS & Postgres Used OAuth2 to integrate security into each microservice to meet all HIPAA regulations 	
	Contract Software Engineer <i>University of Colorado, Boulder</i>	Boulder, CO Jan 2018-July 2018
	<ul style="list-style-type: none"> Developed homework material, solutions, and infrastructure to automatically score Jupyter Notebook assignments for new university-level Earth Analytics Python course Created public python package with multiple levels of abstraction to ease grading of Matplotlib plots without human assistance (https://github.com/earthlab/matplotcheck) 	
	Math and Science Tutor <i>Tutor Doctor</i> <i>Top of the Line Tutor</i>	Boulder, CO Dec 2017-May 2018 Oct 2017-Dec 2017
<ul style="list-style-type: none"> Assisted students in high school/college STEM courses to improve student understanding of material Connected with each student personally to produce logical mathematical approaches 		
Service	Software Engineer Intern <i>Pelican Imaging</i>	Santa Clara, CA June 2014-Aug 2014
	<ul style="list-style-type: none"> Rewired circuitry and designed matching software for real-time analysis of gyroscope on Aptina headboard Developed automated tests in MATLAB to interpret quality of images taken by product modules 	
	Bioinformatics Research Meetup Organizer <i>Bring Your Own Bioinformatics: Computational Biology Meetup</i>	Houston, TX 2021-present
	Organized internal and external bioinformatics speaker presentations; facilitate discussion	
	Sponsorship Chair <i>Rice University Cycling and Triathlon</i>	Houston, TX 2021-present
	Year-round member of intercollegiate team; coordinate team sponsorship deals with local vendors	
	Concussion Meetup Founder/Organizer <i>Eliminate Brain Pain</i>	Boulder, CO 2019-2020
	Facilitate conversation among post-concussion syndrome victims; stay up to date on concussion research	
President, Apparel Coordinator, Volunteer Chair <i>Cal Triathlon Team</i>	Berkeley, CA 2011-2015	
Year-round member of intercollegiate team; trained 20 hours/week; coordinated practices for 180 athletes		
Camp Counselor, Special Events Coordinator <i>Camp Kesem Berkeley</i>	Berkeley, CA 2011-2014	
Organized benefit dinner raising over \$15,000; leader at summer camp for kids who have a parent with cancer		
Construction/Renovation Leader, Orphanage Worker <i>International Volunteer HQ</i>	Dodowa, Ghana 2014	
Designed methods to improve living environment at Potter's Village Orphanage and Battered Woman Shelter		