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Pareto Optimality Fronts Model as a Tool for Understanding Evolutionary Tradeoffs of Antibiotic Resistance

Dr. Arroyo studies how bacterial lifestyles affects adaptations to abiotic and biotic stresses in the environment. She studies “extreme” bacterial examples of adaptation to better understand the limits of microbial life in these systems. She earned a M.S. in Biology at Humboldt State University studying iron and sulfur oxidizing bacteria from geothermal hot springs under the mentorship of Dr. Patricia Siering. She was awarded a PhD in Microbiology from Cornell University in the lab of Dr. Esther Angert. Her doctoral thesis used bioinformatics to study the ecology and evolution of giant gut microbes (Epulopiscium sp. and relatives) found in tropical surgeonfish. Dr. Arroyo is currently in the lab of Dr. Vaughn Cooper at the University of Pittsburgh School of Medicine where she investigates the role of biofilm formation on the evolution of antimicrobial resistance in the multidrug resistant pathogen Acinetobacter baumannii. She is an NIH-funded T32 Postdoctoral Fellow from the division of Infectious Diseases. Ongoing work includes exploring the evolutionary tradeoff between phage resistance and antibiotic susceptibility in Acinetobacter biofilms.