C-MORE EDventures Report: Training in metagenomic analysis and its application to characterize the RNA viral communities along the Antarctic Peninsula

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The C-MORE EDventures program funded Jaclyn Mueller, a graduate student at the University of Hawaii at Mānoa to attend two workshops in 2013 that offered advanced training in metagenomics and aquatic virology. Mueller attended the Strategies and Techniques for Analyzing Microbial Population Structure (STAMPS) course at the Marine Biological Laboratories in Woods Hole, MA in August of 2013. This workshop provided state-of-the-art training in marine metagenomics for a viral metagenomic sequencing project that is a major component of the student's dissertation research. Participants came from diverse fields of interest in microbial metagenomics, ranging from human health related questions to environmental and water quality issues. This workshop incorporated training sessions with seminars given by distinguished scientists on the latest analytical software and techniques, followed by a demonstration and hands-on lab section where participants get to apply these tools.

These techniques were applied to investigate the diversity and dynamics of novel RNA viral communities in the Antarctic, and the results were presented at another workshop funded through EDventures. Mueller attended the Aquatic Viral Workshop 7 (AVW7) at the University of South Florida: College of Marine Science in November of 2013 and gave an oral presentation on Abundant and diverse RNA viruses along the Antarctic Peninsula. The AVW7 workshop is held every 2-3 years to establish a forum where aquatic viral researchers present the most recent results in the field, exchange ideas, discuss new methods and developments, and establish future collaborations to promote research in the field of aquatic virology. This was an excellent opportunity to attend a unique workshop specific to aquatic viruses and learn how to apply the methods taught in the STAMPS MBL course, specifically to viral assemblages. Over 60 participants attended each workshop from diverse backgrounds and a range of scientific career levels (graduate students, post-docs, research staff, and faculty), providing a great networking and collaboration opportunity. Both of these workshops greatly enhanced Mueller’s skills in microbial metagenomics and bioinformatics, one of the fastest growing technologies in marine microbial ecology, and provided a professional forum to share her research.