Trajectories in functional diversity after disturbance at vents on the East Pacific Rise
Lead PI: L. Mullineaux WHOI

Data Management

Data Policy Compliance. The project investigators will comply with the data management and dissemination policies described in the *NSF Award and Administration Guide* and the *NSF Division of Ocean Sciences Sample and Data Policy*.

Pre-Cruise Planning. Planning will be done via teleconferencing and email communication. Detailed plans for station locations, vehicle deployment, habitat characterization, sampling protocols, and other science activities will be drafted with input from the other PI(s) involved in the collaborative cruises. The actual sampling events will be recorded on paper logs and/or digital event logs, if available.

Description of Data Types. The project will produce several observational and experimental datasets, described in the list below. Observational data will be collected on two dedicated cruises to vents on the East Pacific Rise, planned for Spring 2019 and Spring 2020, as well as on other cruises of opportunity.

1. Invertebrate colonists: Colonists collected on seafloor experiments will be identified to lowest taxonomic level using morphological characters or genetic sequence. Each individual will be classified and recorded along with metadata on sample location, vent site, and habitat characteristics as described below. Preserved specimens will be maintained in the PI's labs during analysis, and then transferred to BioSpecs facility at WHOI for long-term storage.
2. Invertebrate larvae: Larvae collected in traps and pumps will be processed and identified, and the data recorded, as described above for colonists.
3. Habitat characteristics: Features such as substratum type, resident community, intensity of vent fluid effluent and temperature of vent fluid will be recorded from visual observations, photos, video and logs from the temperature probe. This information will be used as metadata for the colonist and larval samples.
4. Functional traits database: A database specifically focusing on traits of species from the East Pacific Rise will be contributed to the international sFDvent Working Group.
5. Derived data: The results of statistical analyses of community structure and function will be recorded in spreadsheet form and published in peer-reviewed journals.

Data and Metadata Formats and Standards. Field observation data will be stored in flat ASCII files, which can be read easily by different software packages. We will utilize the World Register of Marine Species (WoRMS) taxonomic classification. Metadata will be prepared in accordance with BCO-DMO conventions (i.e. using the BCO-DMO metadata forms) and will include detailed descriptions of collection and analysis procedures. Processed observational and experimental data will be stored as Excel spreadsheets, MATLAB files, or R files.

Data Storage and Access During the Project. The investigators will store project data (including spreadsheets, ASCII files, and images) on both individual laboratory computers and institution servers that are maintained by WHOI's Information Services group. The sequences will be available initially through the Public Data Portal of the Barcode of Life Data Systems (BOLD).

Mechanisms and policies for access, sharing, re-use, and redistribution. The repository for all data is the Biological and Chemical Oceanography Data Management Office (BCO-DMO), unless otherwise noted, following recommendations in the BCO-DMO Data Management Best Practices Guide (bco-dmo.org/resources/). DNA sequences will be deposited in the National Center for Biotechnology Information (NCBI) database GenBank upon submission of manuscripts; GenBank accession

numbers will be provided to BCO-DMO. Data sets produced by the science party will be made available through the BCO-DMO data system within two years from the date of collection. The project investigators will work with BCO-DMO data managers to make project data available online in compliance with the NSF OCE Sample and Data Policy. Data, samples, and other information collected under this project can be made publically available without restriction once submitted to the public repositories. We will adhere to and promote the standards, policies, and provisions for data and metadata submission, access, re-use, distribution, and ownership as prescribed by the BCO-DMO Terms of Use (http://www.bco-dmo.org/terms-use). Functional traits data will be incorporated into the international sFDvent Working Group's functional traits database.

Plans for Archiving. The investigators will work with BCO-DMO to ensure that data are archived appropriately and with necessary documentation.

Roles and Responsibilities. PIs Mullineaux and Beaulieu will oversee data management for the science team and interface with BCO-DMO staff. Mullineaux will be responsible for data and metadata for larvae, colonists and habitat characterization. Beaulieu will submit the DNA sequences to GenBank and coordinate with the sFDvent Working Group to integrate our results into their functional traits database.