DATA MANAGEMENT PLAN

I. Types of data

The project will generate data in the form of: 1) time series of Micro-Particle Image Velocimetry (μPIV) images and associated velocity vector maps of flow fields generated by free-swimming mucus mesh grazers, 2) epifluorescence microscopy and eSEM images of mucus meshes and gut contents, 3) Flow cytometry data and, 4) high throughput 16S and 18S rRNA sequence data.

II. Data and Metadata Standards

Data from both laboratory and field experiments will be accompanied by extensive, well-annotated metadata in laboratory notebooks, excel spreadsheets and word documents to maximize the usable lifespan of the data. Data originally recorded on physical paper datasheets or laboratory notebooks will be scanned each day and stored on an external hard drive. We will collect parameters for 16S/18S rRNA gene sequence analysis, alignments (e.g log files), and search databases along with other metadata standards. We will adapt metadata standards that are compliant with MIxS (Minimum Information About any (X) Sequence) standards. Flow cytometry data will be collected according to the Minimum Information about a Flow Cytometry Experiment (MIFlowCyt) standards. All raw and processed data will be stored in the lab using RAID external hard drives.

III. Policies for access and sharing, and provisions for appropriate protection and privacy

Data resulting from the project will be promptly prepared for presentation at scientific meetings and publication and will be publically available no later than two years after collection. The PIV and microscopy image data, sequence data, microscopy results and associated spreadsheets will be made freely available using public databases. Since the image files are large (often hundreds of GB) data requests will be handled on a case-by-case basis. Metadata, excel spreadsheets, and, whenever possible, image files will be archived at the Biological and Chemical Oceanography Data Management Office (BCO-DMO: http://bco-dmo.org/data) to ensure that the research community has long-term access to the data. As these images do not contain any human information, there are no ethical or privacy concerns.

IV. Policies and provisions for re-use, re-distribution

We are planning for permanent sharing and reuse of these data. It is likely that many researchers within both the marine ecology and biological oceanography fields could utilize these data. Additionally, these data may have applications in other areas of marine science, education, and conservation management. We anticipate that the system we establish for sharing and archiving will also serve for reuse/ re-distribution.

V. Plans for archiving and Preservation of access

Sutherland and Thompson will be responsible for archiving data and updating contact information of collaborators and students. BCO-DMO also archives all the data they manage at the appropriate national archive facility, such as the National Oceanographic Data Center (NODC). Samples remaining after analysis will be stored in -80 °C freezers in the Biology Department at Portland State University while data collection and publication are in progress. If samples remain valuable, they will be stored for longer periods following publication. Collected and generated data will be curated both automatically, manually and computationally before

made available. Periodic data backups and submission to online repositories will be done according to suggested NSF, journal, and archive guidelines.