

## **DATA MANAGEMENT PLAN**

### **Data output**

The project will generate data in the form of: 1) time series of Micro-Particle Image Velocimetry ( $\mu$ mPIV) images and associated velocity vector maps of flow fields generated by free-swimming appendicularians, 2) epifluorescence microscopy images of fluorescent particles in appendicularian guts, houses, and fecal pellets, 3) files output by Atomic Force Microscopy (AFM) and, 4) high-resolution images of fluid flows acquired through dye visualization for multiple species of appendicularians from the field.

### **Data Storage**

The image data will be stored on a password-protected computer hard drive and backed up on portable hard drives stored in Sutherland's lab at the University of Oregon. Images will be named based on the location, date of collection, species and will include an embedded spatial scale; image metadata will be documented in an accompanying excel spreadsheet. Access will be limited to K. Sutherland and the graduate student, K. Conley, until the results have been analyzed. Quality control will include regular data verification and protocol compliance checks by K. Sutherland.

There are currently no community standards for organization of laboratory image data, PIV data and associated metadata; however, the files are typically in a format that includes most required information. We will continue to work with the image analysis community, and adhere to standards as they are defined.

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. All raw and processed data will be stored in the lab using RAID external hard drives.

### **Access and sharing**

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, AFM results and associated spreadsheets will be made freely available. 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. Sutherland 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).