

## **DATA MANAGEMENT PLAN**

**Principal Investigator:** Kelly Sutherland

**Institution:** University of Oregon

**Project:** Influence of organism-scale turbulence on the predatory impacts of a suite of cnidarian medusae

**NSF Division:** OCE

**Submission Date:** 8/15/2011

### **Data output**

The project will generate data will be in the form of: 1) time series of high-resolution images of predator-prey interactions for multiple species of hydromedusae from the lab and the field, 2) time series of Particle Image Velocimetry (PIV) images and associated velocity vector maps of flow fields generated by swimming hydromedusae and background turbulence, 3) files output by Acoustic Doppler Velocimeter (ADV) and Conductivity, Temperature and Depth (CTD) casts and, 4) zooplankton samples from net tows and from the guts of hydromedusae, which will be quantified immediately or stored in formalin.

### **Data Storage**

The image data will be will be stored on a 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 spreadsheet.

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

### **Data Analysis**

The kinematics of predator-prey interactions will be analyzed using ImageJ or other image analysis software and the components of predation will be coded and stored in spreadsheets. PIV flow field data will be analyzed using DaVis or other PIV processing software and associated variables including feeding flux, shear deformation rate and turbulence kinetic energy will be computed in DaVis and Matlab. Files will be in the form of .eps plots or output variables stored in a spreadsheet.

Output files from ADV and CTD profiles will be processed using software packages included with the instruments and widely used by the oceanographic community (e.g. Nortek and Seabird).

Zooplankton counts and species composition that are analyzed immediately after collection (i.e. gut contents) will be stored in spreadsheets and samples that are not analyzed immediately will be stored in 5% formalin for subsequent sorting and counting.

### **Data Availability**

The image data, hydrographic data and associated spreadsheets will be made freely available upon publication of results. Since the image files are large (often hundreds of GB) data requests will be handled on a case-by-case basis.