

## **Data Management Plan**

### **1. Types of Data**

Data from the proposed project will include measurements from various instruments collected during laboratory analyses. The data will be collected, processed and developed by collaborators at the University of Rhode Island and Florida Atlantic University. The primary data products resulting from the proposed laboratory research will be: holographic imaging of phytoplankton under different flow conditions combined with phytoplankton physiological measurements. The project is also going to use previously existing field data of the PI collected under sponsored funding by other agencies (ONR, NOPP) for analysis beyond the goals of the original funding. These data include ship-based vertical profile observations (conductivity/temperature/depth, turbulence and shear, holographic particle imaging, chlorophyll fluorescence, backscattering, CDOM fluorescence, spectral absorption and attenuation). Analysis of previous field data and laboratory data collection campaigns will be coordinated via email and teleconferencing between the PI and Co-I's.

### **2. Data and Metadata Formats**

All project data will be processed into engineering units as ASCII format text files (where applicable) with metadata included in the header of each data file (including video imaging). In some cases the data will also be shared in Matlab MAT file format and/or as netCDF files. Data quality will be in accord with published uncertainty ranges for each instrument and within error bars for standard processing techniques.

### **3. Data sharing and access**

All data collected under this program will be made available as per NSF guidelines within 2 years of collection via published manuscripts, publicly available final reports to NSF, and data archiving in appropriate databases. Biological data will be archived at Biological and Chemical Oceanography Data Management Office (BCO-DMO). The data will be preserved on multiple hard disk drives at URI and FAU, and made available via published manuscripts and publicly available final reports to NSF. Archiving optical imaging data can result in gigabytes-to-terabytes of data, and every effort will be made by the PIs to provide data and/or code to interested parties.

### **4. Data use and publication**

In addition to the standard terms of use for BCO-DMO, synthesized data (e.g. processed optical data, estimates of turbulence/shear) will need to go through basic quality control steps before being uploaded, stored, and shared with the general public. Users of synthesized data should notify the investigator who produced the data set prior to circulation of draft manuscripts or results that include the data. That notification should be provided at an early stage to allow opportunity for collaboration and participation in the analysis and publication process.