Data Policy Compliance: NSF requires investigators to provide data within two years of collection. If the project is funded, cruise data on environmental conditions, measured community biomass, composition and process rates will be submitted, with supporting documentation, to the Biological and Chemical Oceanography Data Management Office (BCO-DMO) under the project title as soon as it is available and within two years of the end of the cruise. This includes all bacterial, phytoplankton, protistan, mesozooplankton, and larval fish biomass data; phytoplankton growth, primary productivity and nitrogen uptake rate measurement data; mesozooplankton and protistan grazing rates; zooplankton egg production rates; larval fish gut content and growth rate data; $\delta^{15}N$ of nitrate, POM, sinking particles, zooplankton taxa, and larval fish; raw CSIA-AA data for zooplankton taxa and larval fish; and trophic position and nitrogen source estimates determined from CSIA-AA and ^{15}N budgets. Each co-PI will oversee field data collection and archiving in BCO-DMO for their own areas of principal responsibility (see project description). Dr. Landry will oversee data submission and ensure that co-PIs submit data in a timely manner. Landry and co-PIs have previously provided data to BCO-DMO as part of the US JGOFS Program, the Costa Rica Dome FLUZiE Project (https://www.bco-dmo.org/project/515387) and others, in addition to alternate NSF-approved data repositories (HOTDOGS – Hawaii Ocean Time-series Program; DATAZOO – California Current Ecosystem-LTER Program). Model code will be housed on the GitHub and SourceForge (see below), which are both open-access, web-based platforms for model storage that allow version control during model development and model summary data will be submitted to BCO-DMO. UVP5 data will be submitted to BCO-DMO and also submitted to the EcoTaxa website (http://ecotaxa.obs-vlfr.fr/part/) that catalogs all UVP data globally.

Field Sampling: Event logs will be kept in both paper and digital forms during field sampling, using a dedicated Event Logger program (as used in the CRD FLUZiE and CCE LTER Programs). The Event Logger automatically generates a unique event number for each activity undertaken at sea and associates the event number with an activity (e.g. CTD deployment), date/time in GMT, location, and corresponding Lagrangian experiment or transect number. Sampling and analytical protocols will be logged in a report at the conclusion of the cruise.

Post-Cruise Laboratory analyses: Metadata for each sampling activity will be collated into a single file, updated following each cruise, and provided to BCO-DMO. Data will be supplied to BCO-DMO within three months of final sample analysis and quality control to be made publicly available online from the BCO-DMO data system following standard NSF requirements upon publication. This data will be merged with appropriate metadata (e.g. unique event numbers and supporting data such as date/time, latitude/longitude, temperature, etc.) so that it is in a usable format, both by PI's and collaborators. When annual reports are submitted, the data specific to this project, including new data and data updates, will be provided to BCO-DMO.

Management of Modeling Results: Model code will be archived on SourceForge (http://sourceforge.net) and GitHub (https://github.com/), which are both web-based source code repositories, using version control software as the model is developed. This acts as a centralized location for software developers to control and manage open-source software development and it allows worldwide access to all models that are under development in the repository. Previous modeling studies by co-PI Stukel are currently archived and publicly available via Source Forge (e.g. http://sourceforge.net/projects/roca-model/?source=directory and http://sourceforge.net/projects/anacondas/files/ANACONDAS-DDA/) and GitHub (https://github.com/stukel-lab/N15-LIM.). Summary model results (e.g., food web fluxes and uncertainties from the inverse ecosystem models; larval maturation, survival, and recruitment maps predicted by the Lagrangian individual-based model) will be submitted to BCO-DMO. However, full model results (e.g. millions of Markov Chain Monte Carlo simulations for the

inverse ecosystem model; full three-dimensional, time-resolved results from the individual based models) are too large to be hosted by BCO-DMO. These will be hosted at FSU's Center for Ocean-Atmospheric Prediction Studies (COAPS). Model results and code for reading and formatting the model output will also be made available upon request due to the large volume, file size and record type of the output.

Management of Genetic Data: Genetic analyses conducted for this project by our collaborator, Dr. Eric Raes (CSIRO) will not be funded by NSF. Nonetheless, Dr. Raes has a track record of making his genetic data publicly available. The 18S and 16S samples will generate substantial amounts of data (>10 Gbp expected). We anticipate that the raw Illumina reads will be deposited in the NCBI Sequence Read Archive (or other similar repository), while the assembled transcripts will be deposited in the NCBI Transcriptome Shotgun Assembly Database (or similar repository). Experimental details and data-processing information will be included with data depositions at NCBI, along with all measured environmental parameters (e.g., depth, temperature, density). Unique cruise event numbers will also be included with the data, which will allow sequences to be matched with ecological data generated on the cruise (e.g. primary production, nitrogen fixation, zooplankton grazing rates).