An Integrated Modeling-Experimental-Observational Approach

1. Interaction between models, experiments, and observations

Climate models have matured to a point where they can accept process-level information. Opportunity exists to work with modelers to improve representation of processes that are unique to the Arctic (e.g., GHG fluxes and energy balance).
- Identify uncertainties or missing processes in models,
- Provide best representation of processes via experiments and observations,
- Challenge models against observations and experimental results
- Benchmark, validate, and use data to constrain model predictions
- Provide testable hypotheses to guide observation and experimentation

2. How might that interaction drive a future data collection enterprise?
- Experiment
- Experiment-observations (e.g., SEARCH, ABoVE, AON, etc.)
- Distributed experiment (heterogeneity)