The Euphausiid Gang

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Central Hypothesis:

Variation in the timing and coverage of sea-ice and associated food resources lead to differences in age structure, diet history and nutritional condition for euphausiids. These affect krill production rates and their availability to higher trophic levels.
What we plan to do:

- **Animal collections** in ice and open water (AT NIGHT)
- **Potential Prey**: Copepods and nauplii, protists, phytoplankton, detritus, ice algae
- **Lipofuscins**
- **Biochemical Age estimation**
  - HPLC (on board)
  - Lipid Biomarkers (shore based)
  - GC & GC-MS
- **Demographic structure**
- **Diet History & Nutritional Status**
- **Growth Rate and Egg Production**
- **Calibration** (rearing at UAF)
- **Shipboard Feeding Experiments** (at night)
- **Culture prey**
- **Potential Prey**
  - Copepods and nauplii, protists, phytoplankton, detritus, ice algae

Links to Higher Trophics?
Live Euphausiid Collections and Measurements at Process Stations (night):
~15 process stations; shelf, slope, under and near ice-edge; CTDs and nets

Measurements/incubations:
• Collect live euphausiids with Bongo nets
• Lipid profiles plus aging by the lipofuscin method
• Feeding experiments - grazing rates on chlor, specific prey, lipids
• Growth and reproduction experiments
• Shipboard rearing for start of aging calibration studies

Prey field characterizations:
• Chlor, lipids, phytoplankton and microzooplankton composition/biomass
• Shipboard phyto/microzoo isolations and culturing for lipid characterization

MOCNESS collections:
• Large mesozooplankton/micronekton abundance/biomass

Mesozooplankton Collections at Survey stations
• Vertical Calvet tows