

DESCEND2 *highlights*

- All breakout group reports are in
- We've asked some members of our community to write up briefs on the state-of-the-art in key technologies, e.g. ROVs, AUVs, Observatories
 - *Many but not all of these are in.*
- Executive summary still needs to be written (DESCEND2 steering committee)

Technological objectives in the short/long term

- Develop new technology/assets that uniquely serve the coastal environment (coastal)
- Telepresence (benthic)
- Full-Ocean Depth ROV / AUV (benthic)
- Increased Automation (benthic)
- Improved *In Situ* Analysis and Collection (benthic)
- Improved survey technologies, incorporating acoustic and imaging capability with environmental sensors (benthic)
- Need vehicles/technologies to support near and under ice research (NUI dives to date have revealed entirely new ecosystems!; polar)
- an improved lateral range *and* depth range to the current NUI vehicle (polar)
- basin-scale navigation systems for long--range under-ice operations (polar)
- AUVs and ROVs provided as standard for an “increasingly science--capable”* next generation of US ice-breakers (polar)
- *In situ* molecular biological analyses (mol bio)
- Computer vision for identification (mol bio)
- Ship-free or non-ship tethered geo-spatial scanning/sampling vehicles (mol bio)
- Few such high resolution models for the deep ocean are available (phys oce)
- establishment of both Arctic and Antarctic cabled observatories.
- Prioritize deployment of existing sensors/sampling equipment to begin to address biogeochemical data gaps (biogeo)

Behavioral / cultural objectives in the short/long term

- Promote use of coastal environments as natural laboratories for technology testing and scientific capitalization (coastal)
- Improve data awareness and data management processes (coastal)
- Breakdown funding stove-pipes (coastal)
- Improved standardization in sampling and data mgmt (benthic)
- Diversity and nurturing of the next-generation of deep-ocean scientists (benthic)
- Coordinated efforts towards open-access and user-friendly engineering/technology platforms (biogeo)
- Long-Range (global) mapping and sensing (geology)
- Multi-vehicle operations can be more fully utilized (geology)
- Connecting to Society! (geology)