

DESCEND 2 ACTION

- **Goal:** To build on the DESCEND2 report with timely actionable and new directions for future interdisciplinary programs in deep-sea research.
- **Anticipated Outcomes:** Stimulate and enable interdisciplinary collaborations and networks, gain insights into challenging problems in deep-sea research that we can rally around, identify steps (e.g., a series of workshops, a Research Coordination Network) for our community.
- **The Grand Challenge:** You have unlimited resources; build an interdisciplinary team to address and implement an ambitious outstanding question (or problem) in deep-sea science (i.e. don't be constrained by current capabilities!)

Breakout Sessions- DESCEND-2-Action:

- **Polar ocean environments in a changing world**
 - Moderator -Chris German
 - Cochair: Catherine Walker
- **Our new and evolving understanding of seamounts and seamount processes**
 - Moderator – Amy Baco-Taylor
 - Co-chair Kirsten Meyer
- **Interdisciplinary understanding of fracture zone environments**
 - Moderator – Nick Hayman
 - Co-chair –Justin Estep
- **Advancing understanding of global fluxes of gases from the seafloor**
 - Moderator – George Luther
 - Co-chair Adam Skarke
- **The temporal and spatial scales of the processes that link the seafloor, water column and atmosphere**
 - Trish Gregg
 - Co-chair Oliver Ashford
- https://www.unols.org/sites/default/files/201712desap_14.pdf
- <https://www.unols.org/sites/default/files/201712desmi.pdf>

Synthesis of shared thoughts across the groups

- **What are the significance and societal impacts of these goals?**
- **What is needed to accomplish goals?**
 - Global-scale cataloging, " Cold, dark, far away, not one environment"
 - Multiple-vehicle ops to cover more ground in the same amount of time (e.g., fleets of AUVs)
 - optical nodes, acoustic nodes, AUV docking stations, "smart" AUVs
 - Adaptive arrays. Sensors
 - Deep-learning computing for data analysis and prediction, machine-learning imaging software
 - eDNA
- **What new (interdisciplinary) opportunities could emerge?**
 - Ocean worlds, transformative technological advances, other agencies
- **What potential challenges could be encountered?**
 - Global distribution
 - Sampling limitations

Today : ASCEND-to Implementation

Charge: We are going to write a RCN (research coordinated network)-type proposal

Address these questions:

- What are the overarching themes of the proposal?
- What would you like to see as the main outcomes from such a network?
e.g. workshops, summer schools? new technology, a large community experiment, a new interdisciplinary program (like NASA Astrobiology community)? Think NSF 'Big Ideas'
- Provide a rough proposal outline with some actionable nuggets (implementation)

Also think...What do you want to see happen in our community? What excites you about interdisciplinary deep-sea research?

Who wants to volunteer to help write?