

**Deep Submergence Research:**  
**Concept → Proposal → Field Work → Analyses → Eureka!**  
Dan Fornari - WHOI G&G Dept.

• **strategic thinking about advancing your research agenda**

- § informed by your disciplinary research focus, community initiatives, international programs
- § offer to help your PhD advisor or post-doc mentor with proposal preparation & cruise planning
- § ideas and conversations at national and international science meetings -

**NEED MORE OF THESE ASAP**

§ - **GET INVOLVED, PROPOSE RCNs (Research Collaboration Networks), Chapman Confs etc.**

<https://beta.nsf.gov/funding/opportunities/research-coordination-networks>

• **collaborations- scientific, logistical and outreach**

- § can you address your science objectives alone *or would it be enhanced by collaboration*
- § do your objectives have links to other allied fields - would that expand your impact and positively influence your funding success potential (or hurt it...)
- § international collaborations (e.g., leveraging foreign ship availability with US vehicle assets)
- § develop your broader impacts/outreach plans carefully - not as an afterthought in the proposal...

• **planning a cruise from research concept to the field program execution**

communication is the key - with:

- § science collaborators,
- § vehicle technical teams,
- § ship operator vessel information (installed equipment), capabilities and
- § projected scheduling (for both ships and vehicles)

• **proposal writing - key elements in proposing *Alvin/Jason/Sentry* dives**

- § discussions with funding agency science program managers &
- § NDSF vehicle teams essential to ensure best (most efficient and achievable results) approach
- § Find a 'mentor' - someone who has experience and is willing to give you critical comments and suggestions for improvement of your proposal idea and the actual proposal text.

• **cruise planning - coordination with ship operators/technical groups and vehicle teams**  
**(\*\*important points covered in Sarah Fuller's presentation\*\*)**

- § explore options for GIS and visualization software to expand your ability to react to both existing data and data you plan to collect
- § make sure you have the right mix of onboard technical expertise/resources mapping (multibeam, other map-based data acquisition), onboard data processing CTD, multibeam, ADCP,
- § sample analyses
- § mapping - dive planning- use of existing or daily-acquired map-based data

(e.g., AUV-Sentry night time mapping during Alvin ops.)

§ imaging training/specialists - have the right software/computing resources to satisfy your real-time imaging analysis needs, for dive planning and science objectives

• **what goes wrong - realities of oceanographic research & contingency planning**

§ science equipment issues

§ ship equipment issues

§ vehicle equipment issues

§ medical emergencies

§ global pandemics...

• **planning for the unexpected & ancillary programs**

(\*\*important points covered in Sarah Fuller's presentation\*\*)

identify contingency data collection methods to use ship time productively

• **serendipity & discovery**

§ be ready for the discovery and adapting your field work to take advantage of those events

• **post-cruise documentation and follow-up**

§ post-cruise reporting for ships and vehicles - VERY important -

§ oceanographic science is a collaborative effort involving science and vessel/vehicle teams **on board and on shore**

§ constructive, comprehensive assessments of cruise experiences are key to making improvements and providing important feedback to operators and supporting agencies