



Engaging New Users **New Initiatives**



NSF Frontiers in Earth System Dynamics (FESD)

Goals:

- Foster inter-disciplinary & multi-disciplinary studies of various sub-systems of the Earth
- Catalyze research in areas poised for a major advance
- Improve data resolution and modeling capabilities to more realistically simulate real-world & forecast future events
- Improve knowledge of the resilience of the Earth & its subsystems

Types of Award:

- Type 1 = Frontier Research Projects
- Type 2 = Geoscience Collaboratories/Synthesis Centers

Funding Target:

6-10 Awards; \$3-5M each, 3-5 year duration each



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NSF Frontiers in Earth System Dynamics (FESD)

Pre-Proposals:

Due July 2nd 2012

Full Proposals:

Due March 4th 2013

Anticipated Funding:

6-10 Awards (Type 1 & Type 2)

\$3-5M each

3-5 year duration



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NSF Frontiers in Earth System Dynamics (FESD)

Type I Projects:

...bring together interdisciplinary teams of researchers to address a specific frontier research problem or grand challenge in the geosciences.

...may include investigators at all career levels, and as with most NSF proposals, may include student and post-doctoral support and training.

...should identify a project director who will serve as PI, and will be responsible for coordination and integration of all aspects of the project.



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NSF Frontiers in Earth System Dynamics (FESD)

Costs for NDSF use?

Budgets for Research Platforms and Facilities:

The cost of GEO facilities utilized by FESD proposals will be handled in the same manner as proposals submitted to GEO core programs. Projects that will be utilizing NSF research platforms (e.g. ships) or other shared use facilities are responsible for filing a copy of their Request for Facility Support as a supplementary document in their proposal.

Any costs that will be associated with such facilities should be clearly documented, and PIs should coordinate their requests with the appropriate facility to ensure that access is available to the facility and fits within the time-line of the proposed research.



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Schmidt Ocean Institute (SOI)

SOI is a new privately-funded entity that will act as a facility provider – i.e. it will **not** award research grants to scientists, but **will** award access to ship time aboard the re-furbished and re-named *Falkor* (March 2012)

Stated Mission Objectives:

- Combining advanced science with state-of-the art technology to
 - Create a lasting legacy in ocean exploration and discovery
 - Catalyze open sharing of information about the oceans
 - Foster deeper understanding of our environment
- Communicating findings about the oceans



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R/V Falkor

Built in 1981 in Germany, refitted by SOI in 2012 in Germany, GL Class
Accommodation: 40 pers. total; science party 20 pers., incl. marine techs

Length: 82.90 m (272 ft)

Breadth: 13.00 m (42.7 ft)

Freeboard: 2.275 m (7.5 ft)

Draft: 5.80 m (19 ft)



Gross Tonnage: 2088 GRT

Cruising Speed: 12 knots

Propulsion Power: 5,882 kW (7,888 hp)

Range Estimate: 8,000 nautical miles

Endurance Estimate: 28 days

Slide courtesy of the Schmidt Ocean Institute



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2013 Plan (Year 1 Target 100 days of operations)

- 6 proposals invited (153 days)
- 3 projects selected for implementation (75 days)
 - Gulf of Mexico: Chixculub Crater (using shipboard sonars)
 - Mid Cayman Rise: Vent exploration (using *Sentry* & *Nereus*)
 - Pacific NW: Oxygen Minimum Zone (using *ROPOS*)

Longer Term Plan (150+ days of operations?)