OOI Systems

7 interdisciplinary marine arrays at 3 scales:

- Regional Cabled
- Coastal Endurance & Pioneer
- Global Irminger & Papa
- Global Argentine & Southern (suspended ‘17 & ‘20)
OOI Systems

Cyberinfrastructure & Data Delivery
OOI Systems

Numbers

• 80 platforms
• 800 science instruments
• 30 different instrument types
• Measuring 200 parameters
• ~ 4 TB data downloaded each month
OOI Systems

Mapping onto NSF’s 10 Big Ideas:

- Growing Convergence Research
- Harnessing the Data Revolution
- Navigating the New Arctic
- Understanding the Rules of Life
Selected Accomplishments & Plans

Program Year 1 (10/2018 – 9/2019)

• Continuity
• Data Quality
• Planning
Selected Accomplishments & Plans

Program Year 2 (10/2019 – 9/2020)

• Continued excellence in marine operations
• Implementation of QARTOD principles & standards
• Website redesign (Trapeze Communications)
• Enhancement of user interface (Axiom Inc)
Selected Accomplishments & Plans

Ocean Sciences Meeting

• OOI- and ocean observing-related talks
• OOI booth: demos and conversations
• See oceanobservatories.org
Regional Cabled Array Status

R/V *Atlantis* and ROV *Jason*
AT42-12 May 30-July 12, 2019

- Sixteen 48 ft trailers, six flatbed trucks moved 166 tons of RCA equipment from Seattle WA to Newport OR
- A record 20 Jason dives in five days; 58 total dives
- Installed 113 RCA instruments & 8 PI instruments

Dec 2019: 80% Operational
Regional Cabled Array Status

R/V *Atlantis* and ROV *Jason*  
AT42-12 May 30-July 12, 2019

- Recovered 100 RCA instruments
- Turned 2900 m-tall, two-legged mooring; six science pods and three Deep Profiler Vehicles
- 100% successful installation
Regional Cabled Array Science

Proposals

• >$26M in funded projects excluding ship and ROV costs (NSF, ONR, NASA, Germany)

• 50 Awards, 23 PIs and 31 Co-PIs from 28 institutions

• Two Industry Awards

Axial Base Shallow and Deep Profilers - spanning 2700 m – 5 m: full water column measurements, 24 instrument suite
Regional Cabled Array Science

Papers

- 39 RCA-related, 2014 to date; 438 citations

Axial Base Shallow and Deep Profilers - spanning 2700 m – 5 m: full water column measurements, 24 instrument suite
Regional Cabled Array Science

Highlights

• Continuous full water column measurements at Axial

• Dramatic changes in Southern Hydrate Ridge

• Axial continues to inflate and be seismically active; projected eruption 2022-2024

(Chadwick OS51B-1489 & Wilcock: OS51B-1482)

Axial Base Shallow and Deep Profilers - spanning 2700 m – 5 m: full water column measurements, 24 instrument suite
EA Operational Summary for 2019

• >90% data return from fixed sensors on mooring deployments ●

• 2660 profiles at WA offshore profiler (four trips per day) throughout 2019 ●

• 14 surface profiler deployments generating 303 days of profiles ▲
EA Operational Summary for 2019

• 18 glider deployments spanning 2019. 943 glider days acquired. Glider lines along Newport and Grays Harbor lines prioritized. Also completed transects along 126 W.

• Next turn cruise March 31 - April 15, 2020
EA Accomplishments
Increasing OOI data visibility and use

Pushing data to community databases

• NDBC - meteorological data, including wave and radiation data
  • Updated telemetry to two hours, NDBC review of metadata and data

• NANOOS - meteorological and water column data
EA Accomplishments
Increasing OOI data visibility and use

Pushing data to community databases

- GOA-ON - water column data focusing on pCO2
- Glider DAC - CTD data, now expanded to include fluorescence and O2 data
EA Accomplishments
Increasing OOI data visibility and use

Development of additional software scripts

• Python and Matlab scripts for M2M download of OOI data
• Tools for download, plotting, and quality assessment of profiler data
CGSN Operational Status

Irminger Sea

• 6th deployment, >80% data expected, next cruise May 2020

Southern Ocean

• 4th deployment, >40% data expected, recover only in Jan 2020
CGSN Operational Status

Station Papa

• 7th deployment, >80% data expected, next cruise May 2020

Pioneer Array

• 13th deployment (2x/yr), >90% data expected, next cruise Apr 2020
CGSN Science

Proposals

• >$29M in NSF funded projects
• 31 Awards, 23 PIs from 16 institutions
• Also: NASA, NOAA, ONR

Papers

• 42 CGSN-related, inception to date
CGSN Science

Highlights

• Pioneer exchange processes
• Irminger forcing, mixing, and transport
• Southern Ocean episodic heat loss
OOI at OSM

Join us today!

• Booth #433
• CGSN Data – 13:00-14:00
• Pioneer Input – 14:00-15:00
• RCA Data – 15:00-16:00
• Axiom Data Demo – 16:00-18:00
Questions?