Navy research ships have global reach - regular two year expeditions
Science teams rotate to ship for 18-25 day projects
Navy owned ships have been scheduled via UNOLS since 1972
Navy ships in UNOLS average 280 days/yr operations
Daily operations costs are recovered via a "day rate" charged to agency research
NSF is the major user, then Navy, NOAA, USGS, DOE
Crews are university employees and professional mariners
After Delivery both ships conducted shakedown cruises, deep water winch testing, sea acceptance testing (SAT) of acoustic systems and Science Verification cruises.

Science Verification cruises (SVC) are “dress rehearsals” with experienced sea-going scientists conducting normal science operations and providing feedback on performance and areas for improvement.

Neil Armstrong started normal science operations in May 2016 including an expedition to the North Atlantic and Iceland.

Some SVC cruises are still planned to verify operations with the Jason ROV system and for Jumbo Piston Coring.

Sally Ride just successfully completed JMS Inspection and designation as a UNOLS vessel. Science Ops begin later this week.
AGOR-23 Class R/Vs (Thompson, Revelle, Atlantis) are beyond the mid-point of their 30 year service lives.

Mid-life overhauls will address regulatory requirements, obsolescence, upgrade/replace problematic systems, and to extend the service lives of the vessels beyond 30 years.

Design work completed Jul 14 for Thompson; shipyard selected Aug 15; Thompson overhaul June 2016- July 2017 in Seattle at the Vigor shipyard.

Planning for 2018 overhaul of AGOR 24/Roger Revelle has begun.

Funds permitting, we are anticipating a late 2019 overhaul project for Atlantis.

Overhauls should extend the service life of these ships by 10-15 years.
Kilo Moana Upgrades

- Replace outdated and un-supportable Propulsion Control and Generator Control Systems
  - New Switchboard Components
  - New Bow Thruster Drive
  - Update to Propulsion Drives
  - New Filters
  - New Automation and Alarm System
  - Upgrade to DP system
  - New ECDIS System
Technical Enhancement Projects on ONR Vessels

• New Vessels (Armstrong & Ride)
  • Deep and Shallow Water Multi-beams
  • Multiple ADCP frequencies
  • EK80: hearing lots of interest in this capability
  • HiPaP and multiple, additional transducer wells
  • Multiple Ship/Shore Comm paths
    • Ride: Multiple Hi Seas Net antennae, FBB
    • Armstrong: Hi Seas Net, FBB, Fleet Express
• Older Vessels (as part of Mid-Life refit)
  • Thompson: EM302, Labs, OTS gear, Instrument well
  • Revelle: planning new EM712, HDSS upgrade, and TBD
  • Atlantis: TBD
  • Kilo Moana: improvements to CTD handling system?
Issues to Discuss/Consider

All aspects of our new ships are computer, PLC, PLU driven

• Upgrades of older ships are resulting in similar configurations and challenges/demands!
• Are we (Feds, institutions and UNOLS) adequately supporting both ship and science technical requirements?
Questions?