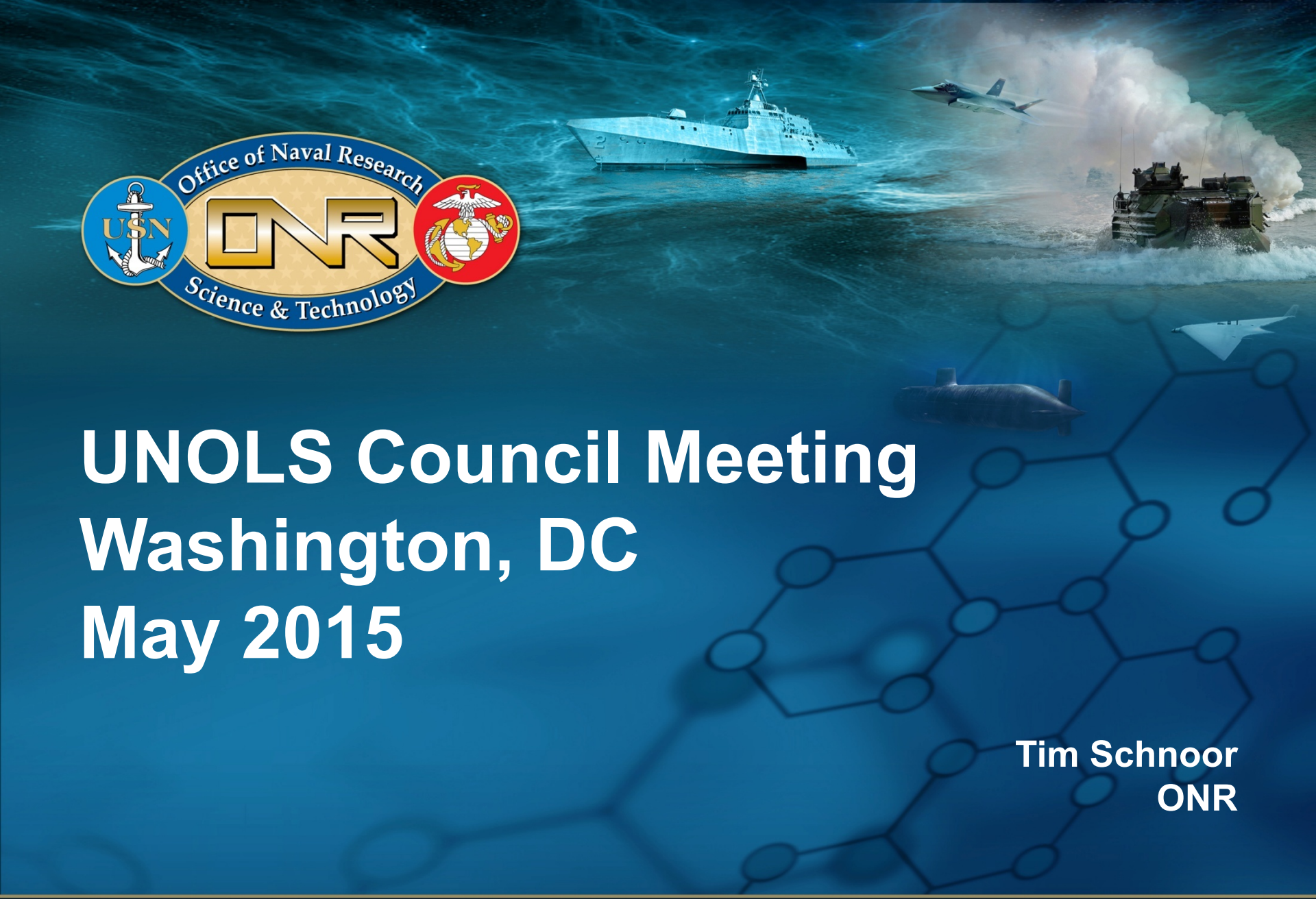


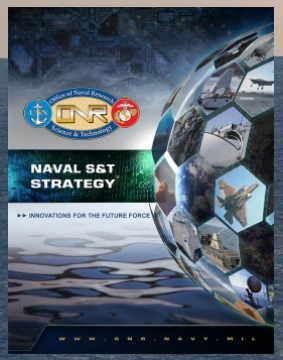
UNOLS Council Meeting
Washington, DC
May 2015

Tim Schnoor
ONR

The Office of Naval Research

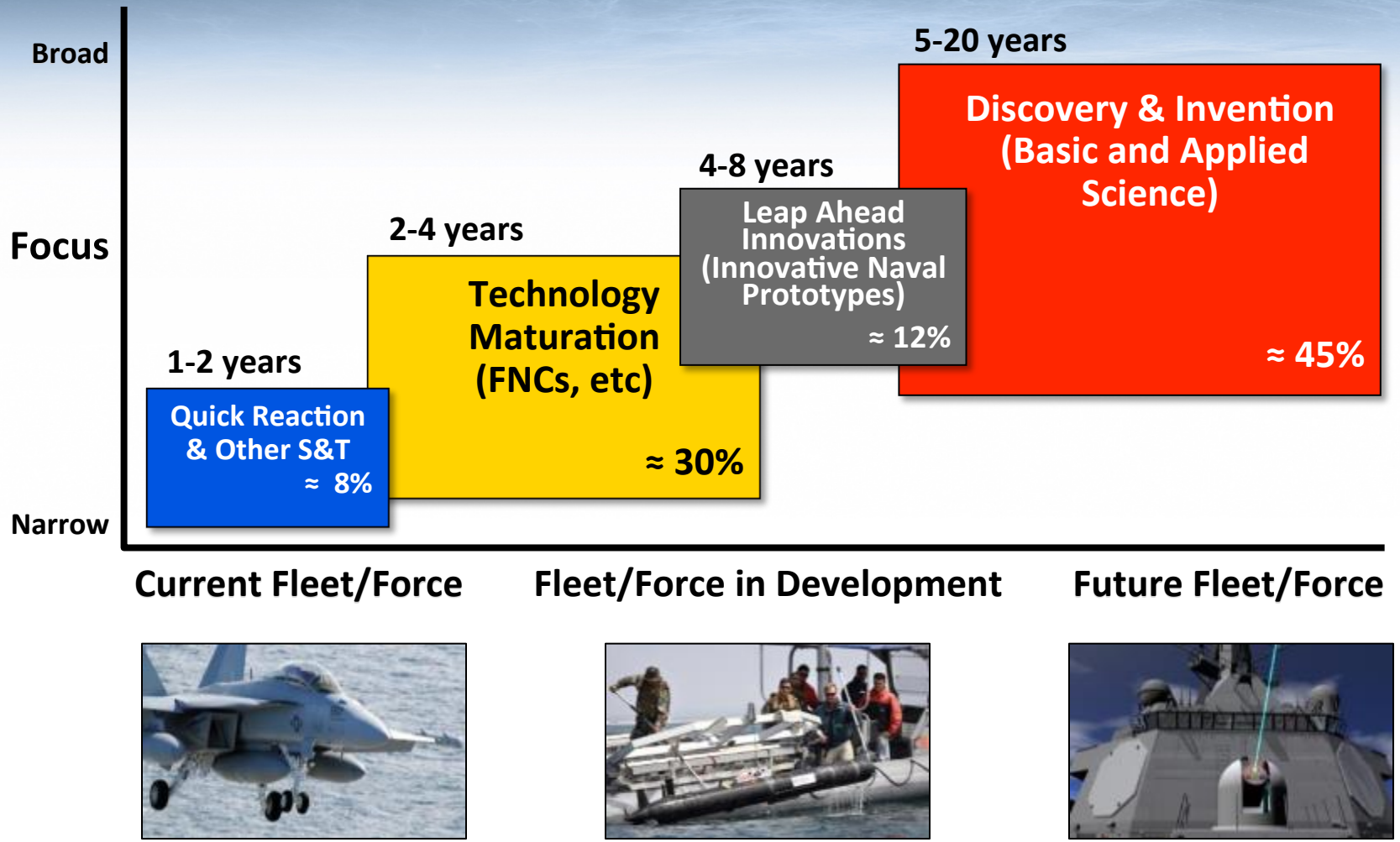
The S&T Provider for the Navy *and* Marine Corps

- 4,000+ People
- 23 Locations
- $2.1B / year
- >1,000 Partners

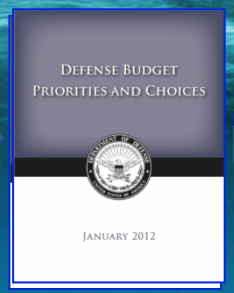


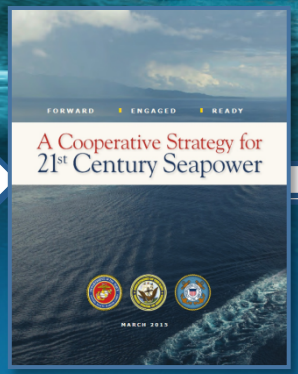
Discover → Develop → Deliver → Technological Advantage

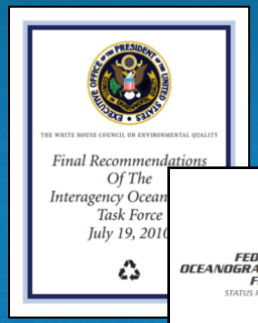
Warfighting Capabilities Enabled by S&T Investments

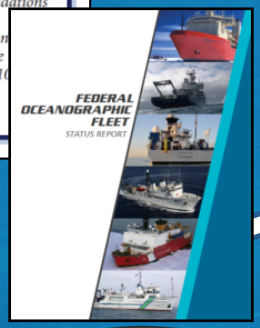


Prioritizing Navy S&T Objectives for Research at Sea









Department Research Initiatives (DRI)

FY:	09	10	11	12	13	14	15	16	17	18	19	20
Tidal Flat Dynamics												
Quantifying, Predicting, Exploiting Uncertainty												
Impact of Typhoons in the Ocean												
High Resolution Air-Sea Interaction Processes												
Space Weather Forecasting Capability												
Western Pacific Tropical Cyclone Structure												
Surf Zone Optical Variability												
Scalable Lateral Mixing and Coherent Turbulence Program												
Internal Waves in Straits Experiment												
Origins of Kuroshiro and Mindanao Currents												
Inlet and River Mouth Dynamics												
Littoral Air-Sea Processes												
Vietnamese Shelf Variability												
Parameterizations for Seasonal Predictions												
Active Transfer Learning												
Predictability of Seasonal and Intraseasonal Oscillations												
Emerging Dynamics of the Marginal ice Zone												
Remote Sensing of Deltas												
Bay of Bengal Freshwater Flux												
Fluxes Through the Ocean Boundary Layer												
Increasing Open Water in the Arctic Ocean												
Impact of Outflow on Tropical Cyclone Intensification and Structure												
Somali Current-Arabian Sea Circulation and Prediction												
The Inner Shelf												

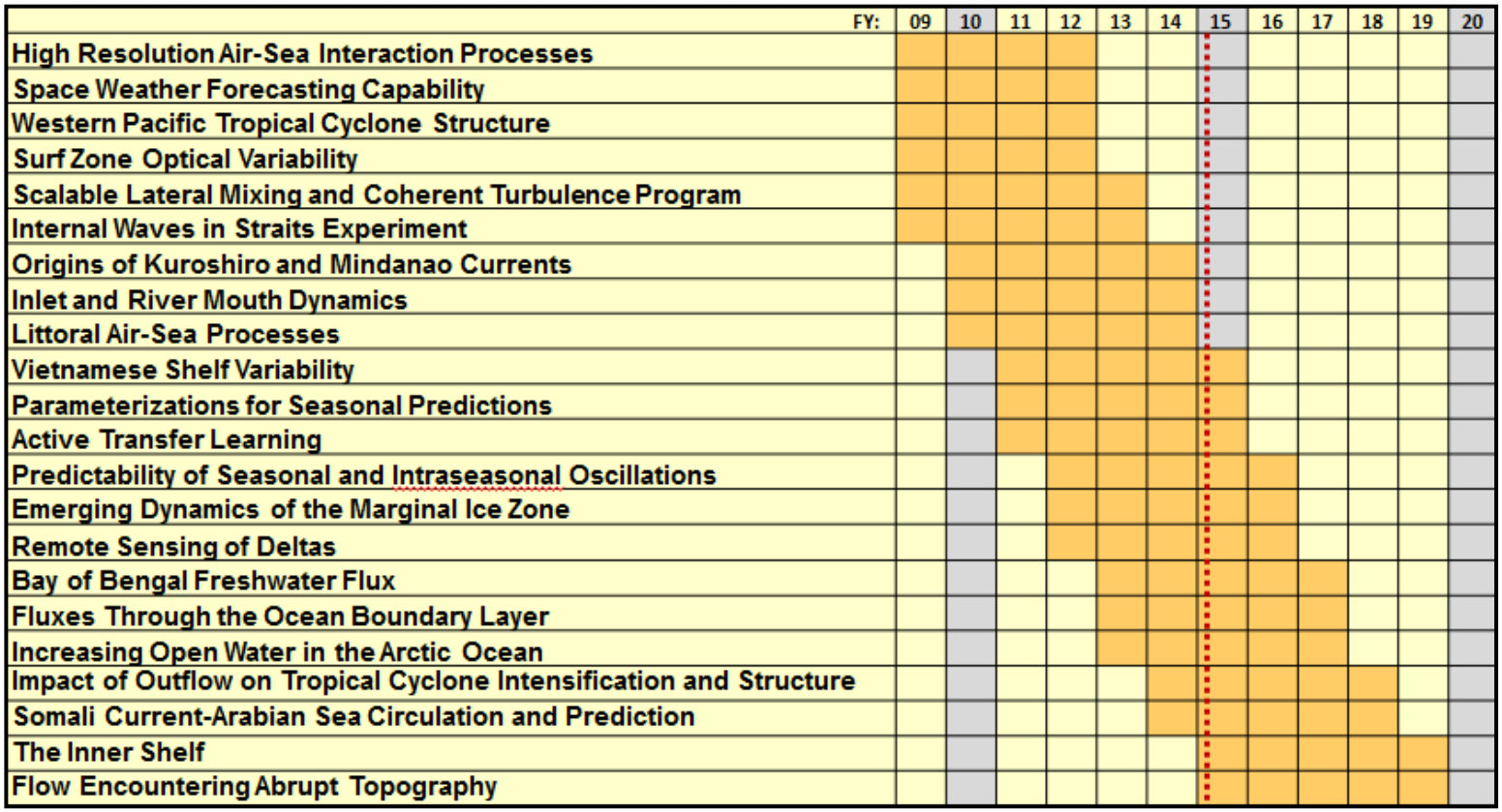
- New start DRI Candidates each year – allows programs to mount field or infrastructure intensive efforts beyond reach for individual core environmental science disciplines
- Responsive to top down guidance representing department strategic direction

Office of Naval Research
USN ONR Science & Technology

Ocean Battlespace Sensing
Renewing the Basic Research Portfolio

- **55% of 6.1 Dept Funds directed to Fixed Term Initiates**
- **Five Year Studies; $9M-11M each**
  - Multidiscipline Research
  - Dept Research Initiatives (DRI) Annual Prioritized Process
  - Focused Critical Naval Global Region
- **High Payoff Science Topics**
  - Optimized to address
    - ASW, MCM, USW, NSW, ISR, METOC

Since 1995, **49** Five Year Studies Completed



Topics of Interest

- Operations: Averaging 425 days/yr
  - 505 days in 2015 @ $14M
  - Two Arctic cruises on SIKULIAQ
  - Environmental compliance
- Funding: Generally flat
  - New Navy financial system
  - Congressional assistance
- Inspections: ABS, USCG, USN, NSF
  - USCG MOA
  - Periodicity of INSURVs
- Construction: AGOR 27 Ocean Class
- Mid-Life Refit and SLEP: AGOR 23
- Retirements: AGOR 14 Class

AGOR 14 MELVILLE – AGOR 15 KNORR

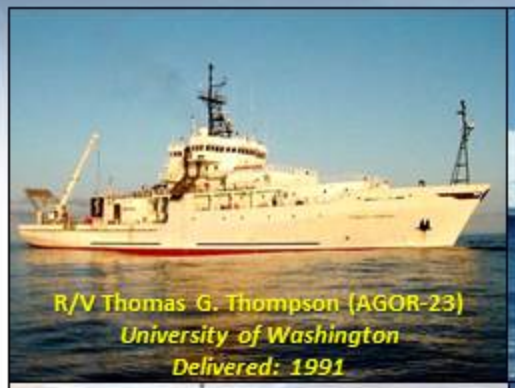
AGOR 14: MELVILLE
Operator - Scripps

Delivered - 1969
Mid-Life Upgrade - 1993
Last INSURV - 2010

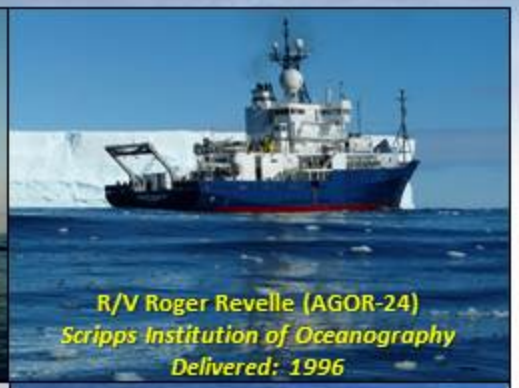
AGOR 15: KNORR
Operator – Woods Hole

Delivered - 1970
Mid-Life Upgrade - 1993
Last INSURV - 2009

The ONR Research Fleet



R/V Thomas G. Thompson (AGOR-23)
University of Washington
Delivered: 1991



R/V Roger Revelle (AGOR-24)
Scripps Institution of Oceanography
Delivered: 1996

R/V Atlantis (AGOR-25)
Woods Hole Oceanographic Institute
Delivered: 1997

R/V Kilo Moana (AGOR-26)
University of Hawaii
Delivered: 2002

R/V Neil Armstrong (AGOR-27)
Woods Hole Oceanographic Institute
Delivery: 2015

R/V Sally Ride (AGOR-28)
Scripps Institution of Oceanography
Delivery: 2015

R/P FLIP
Scripps Institution of Oceanography
Delivery: 1962

- Global reach – two year missions
- Ships operate 280-300 days/year
- Science teams rotate to ship for 18-25 day projects
- Daily operations costs paid by research agency (National Science Foundation, Navy, NOAA, USGS, DOE)
- Crewed by professional mariners & university employees