



# ONR

*Revolutionary Research . . . Relevant Results*

## Sharpening the Edge

Serving the Next Generation Warfighter . . . Now

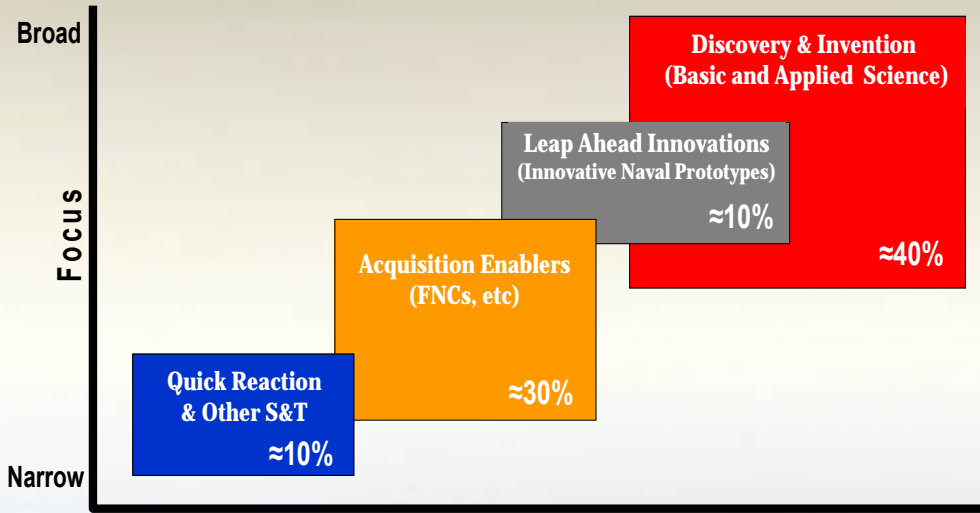
**RADM Nevin P. Carr Jr., Chief of Naval Research**

**PACOM S&T Conference**

**18 March 2010**



# Naval S&T Strategic Plan

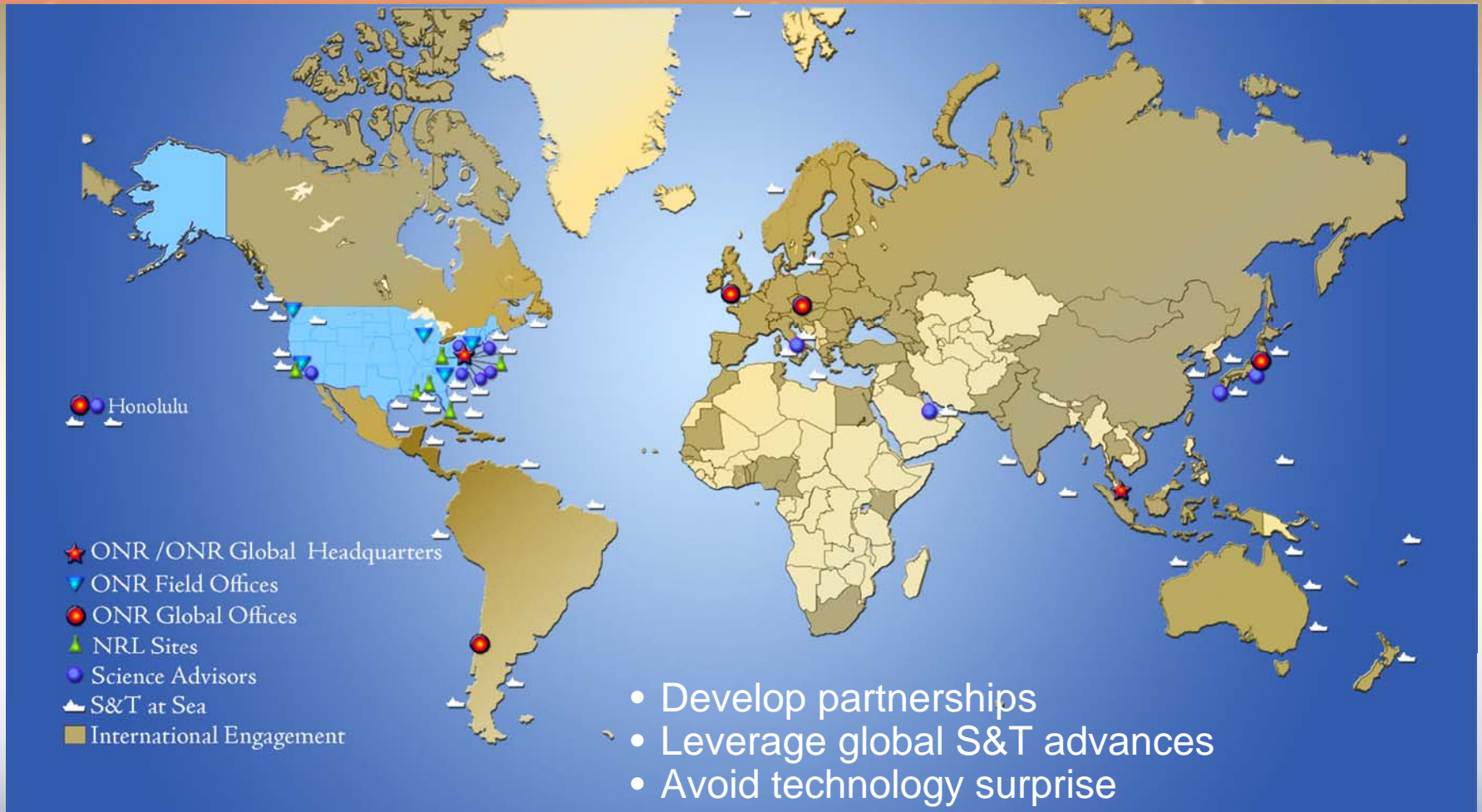


## Focus Areas

- Power and Energy
- Operational Environments
- Maritime Domain Awareness
- Asymmetric & Irregular Warfare
- Information Superiority and Communication
- Power Projection
- Assure Access and Hold at Risk
- Distributed Operations
- Naval Warfighter Performance
- Survivability and Self-Defense
- Platform Mobility
- Fleet/Force Sustainment
- Total Ownership Cost



# ONR Global



# International Science Program Tools

- **Visiting Scientist Program:** Introducing new S&T ideas to Naval Researchers
  - FY09: Scientists from 24 countries ... 64 visits
- **Conference Support Program:** Workshops with high Naval impact
  - FY09: 98 Conferences in 34 countries
- **Naval International Cooperative Opportunities Program:** International scientists addressing Naval S&T challenges
  - FY09: 23 NICOPs in 12 countries



## Alternative Energy:

- Ground Renewable Expeditionary ENergy System (GREENS) provides mobile solar power for USMC
- Microbial Fuel Cells (a Time Magazine 2009 Innovation of the Year)
- Fuel Cell Vehicles – Testing hydrogen Fuel Cell vehicles at Camp Pendleton and Quantico



## Desalinization:

- Expeditionary Unit Water Purification (EUWP) is deployable on a C-130, and can produce over 100,000 gallons of water/day while using 65% less energy



## Energy Neutral Buildings:

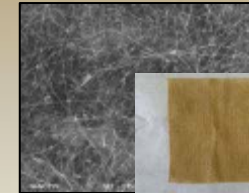
- Provide low cost, energy self-sufficient facilities that are easy to install and can be left behind
- Experimental Forward Operating Base (ExFob) is testing USMC solutions for generating power, water and shelter



-Lighter  
-Longer lasting  
-More power

## Hemostatic Agents

- Two areas of research: (1) An absorbable synthetic-fibrin dressing to control bleeding, and (2) a spray-dried infusible plasma product.



Syn-Fibrin Dressing



Spray-Dried Plasma

## Closed Loop Fluid Delivery System

- Develop a fluid resuscitation system that automatically adjusts the amount of fluid provided based on blood pressure.



## Infectious Disease Research

- Navy Medical Research Unit (NAMRU-3) located in Cairo, Egypt conducts research with partners to improve surveillance and response to diseases of critical public health importance
- NAMRU-2 is located in Jakarta, Indonesia



-Medical responsiveness  
-Patient stability  
-Patient transportability

# Training

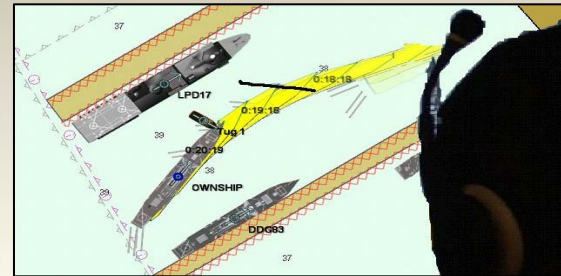
## Socio-Cultural:

- Future Immersive Training Environment (FITE) creates and reinforces complex decision making skills in culturally relevant virtual scenarios
- Infantry Immersive Trainer (IIT) is a mixed reality trainer that prepares USMC for Iraq/Afghanistan



## Seamanship:

- Conning Officer Virtual Environment (COVE)



## Language Learning:

- Integrated System for Language Education and Training (ISLET) tests new Arabic language training technology
- Rapid tactical language and cultural training uses innovative intelligent tutors and games (Tactical Iraqi developed with DARPA)



## Simulation Experiments (SIMEX):

- SIMEXs help develop tactics, techniques and procedures for new technologies and sensors. Provides valuable training for Irregular Warfare in a controlled environment.

- Address cultural factors
- Improve knowledge/skills
- Reduce training time