



# 2010 ONR Naval S&T Partnership Conference

Next Generation Technologies for Today's Warfighter

Director of Innovation Portfolio  
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[www.onr.navy.mil/innovate](http://www.onr.navy.mil/innovate)

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Revolutionary Research . . . Relevant Results

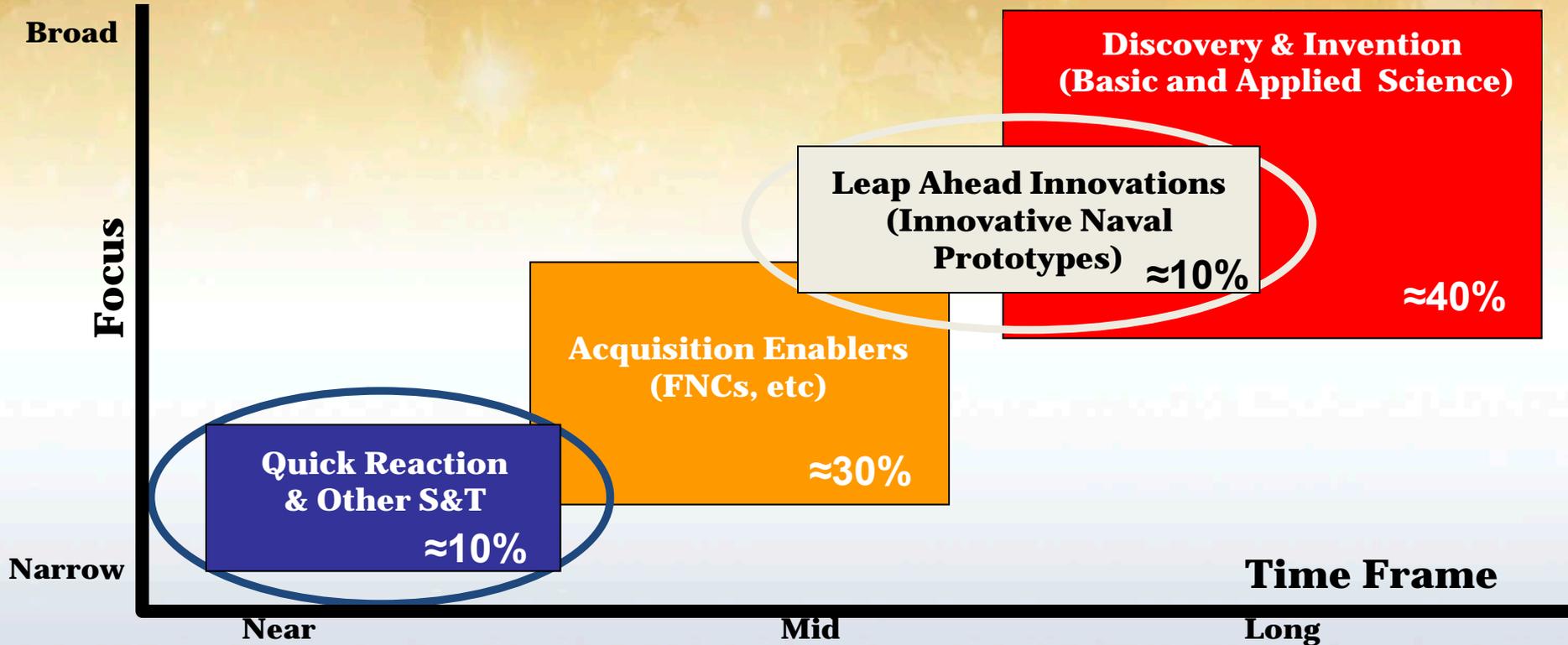
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# Innovation Opportunities

- **Innovative Naval Prototypes:**
  - High-risk, high-payoff game- changing technologies
- **SwampWorks:**
  - Developing new technologies in an accelerated timeframe
- **TechSolutions:**
  - Provide rapid-response S&T solutions to Warfighter requests
- **CNR Challenge:**
  - A platform to help bring innovation to fruition
- **Potomac Breakout Room:**
  - Come see me in my breakout room to speak about these programs and open innovation



# Director of Innovation (DOI) Portfolio



**Innovative Naval Prototypes (INP) and SwampWorks (SW) Projects are High-Risk, High-Payoff Game Changers**

**TechSolutions (TS) and Experimentation (Exp) Projects Directly Support Warfighters and Mitigate Acquisition Risk**

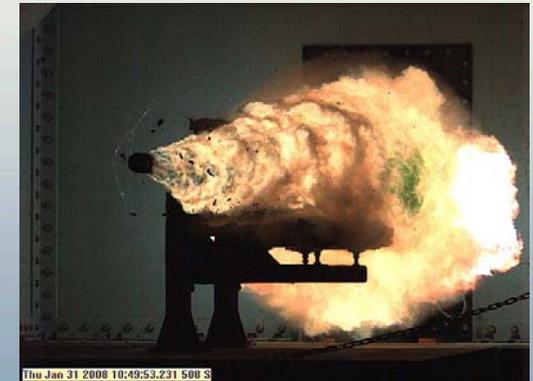
# Innovative Naval Prototype Programs

## Deputy Director of Innovation



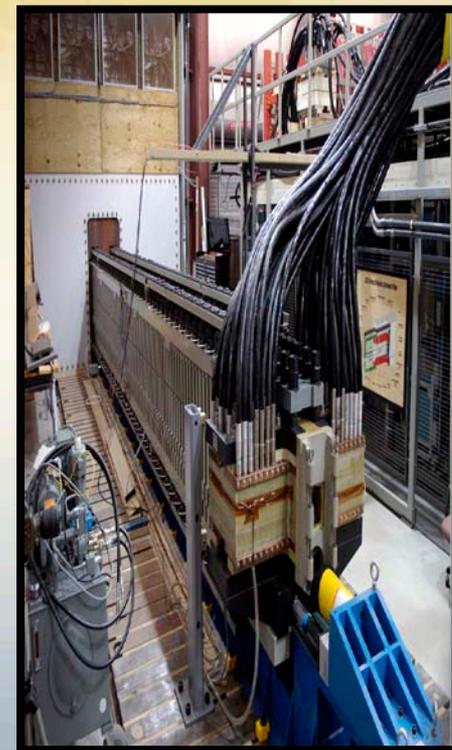
Mr. Craig Hughes

- Purpose:
  - Explore high-risk, game-changing technologies and to advance the capabilities of the warfighter
  - Reduce the acquisition risk of disruptive technologies and capabilities
- Approved by VCNO, ASN (RDA) and ACMC
- Current Innovative Naval Prototypes:
  - Tactical Satellites - Bob McCoy, ONR Code 32
  - Sea Base Enabler - Kelly Cooper, ONR Code 33
  - Persistent Littoral Undersea Surveillance – Theresa Paluszkiwicz, ONR Code 32
  - Electromagnetic Railgun - Roger Ellis, ONR Code 35
  - Free Electron Laser - Quentin Saulter, ONR Code 35
  - Integrated Topside - Betsy DeLong, ONR Code 31

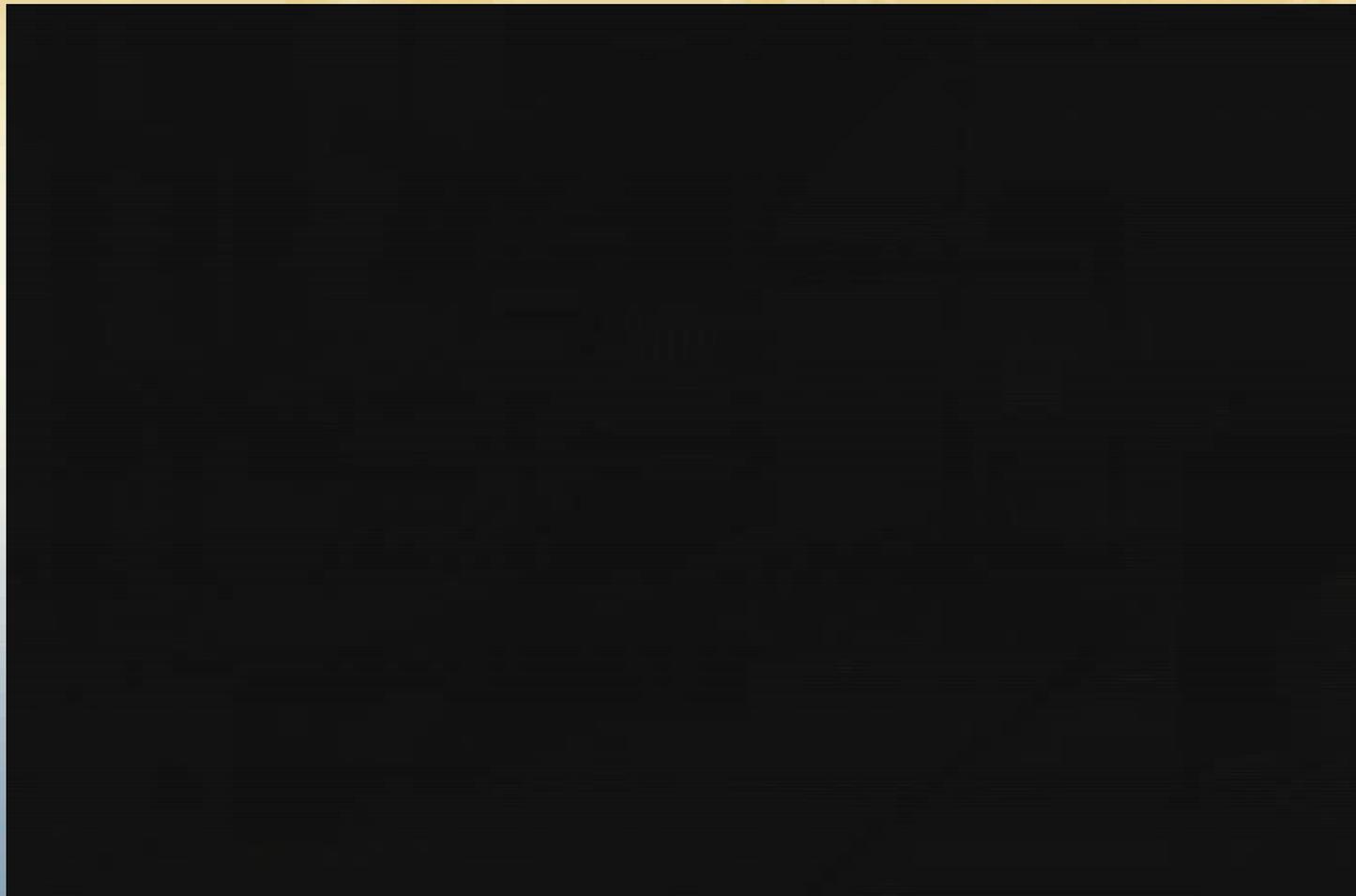


# Electromagnetic Railgun (EMRG)

- Objective:
  - Develop an electromagnetic railgun that provides a long-range, high-energy gun launch system that uses electricity to launch projectiles
- The Technology:
  - Electricity generated by the ship is stored over several seconds in a pulsed power system
  - An electric pulse is sent to the railgun, creating an electromagnetic force accelerating the projectile
- Value to Warfighter:
  - Provides wide-area coverage, quick-response and deep-magazines for surface-fire support
  - Extends the reach and lethality of ships
- Visit the breakout rooms to learn more about this program as well as other INPs



# Railgun Sequence Shot



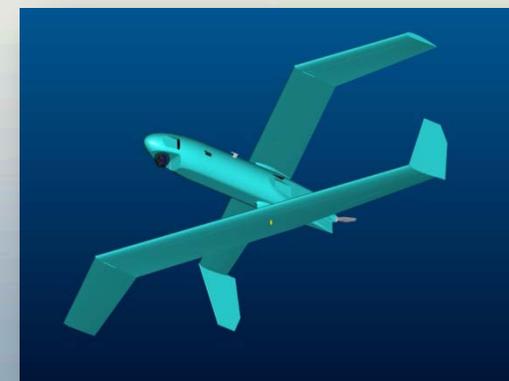
# SwampWorks Programs

## Program Manager



**Mr. Jim Blesse**

- Purpose:
  - Develop and demonstrate newly invented or recently discovered technologies in an accelerated timeframe
  - Develop prototypes for experimentation to satisfy Warfighter requirements
  - Pilot disruptive and open innovation processes and tools
- Approved by the DOI on behalf of the Chief of Naval Research
- Engage with SwampWorks:
  - Our door is always open for new and innovative ideas/challenges
  - During April, March, and May of each year FY “Next Starts” are considered
  - Please contact the SwampWorks program at **[swampworks@onr.navy.mil](mailto:swampworks@onr.navy.mil)**
- Please visit the Potomac breakout room to learn more about SW programs



# Experimental Fuel Cell (XFC) Unmanned Air System

- Objective:
  - Develop a fully autonomous, man-portable, fuel cell powered long-endurance ,small unmanned air system (UAS) that is able to be tube-launched from land or sea
- The Technology:
  - Use of a high powered hydrogen fuel cell to power a small tube launched UAS with a stabilized Electro-Optic/Infrared (EO/IR) payload
- Value to Warfighter:
  - Provides a low cost, long endurance, small, stealthy, intelligence, surveillance and reconnaissance (ISR) capability
  - Extends the range of the Navy's ISR



# Experimental Launch



# TechSolutions Programs

## Program Managers



ETCM Charles  
Ziervogel

Ms. Stephanie  
Everett



Technology Solutions brief on Day 2  
4:00-4:30

## Purpose:

- Provide rapid-response S&T solutions to immediate deck-plate level issues in response to Warfighter requests
- Develop applications of existing and emerging technologies to meet high-interest, near-term fleet/force needs
- Demonstrate prototype solution within 14 months of request

A “solutions broker” process driven by the Warfighter

## Engage with TechSolutions:

- TechSolutions’ programs come directly from the Warfighter – the ultimate customer
- Please contact the TechSolutions program at **[techsolutions@onr.navy.mil](mailto:techsolutions@onr.navy.mil)**

Please visit the Potomac breakout room and exhibit hall to learn more about TS programs

# Powered Rope Ascender (PRA)

- Objective:
  - Develop a powered rope ascending device suitable for visit, board, search and seizure (VBSS) teams, remote casualty evacuation, helicopter extraction operations, and mountain warfare assault teams
- The Technology:
  - High power density battery and compact high horse power motor for human lifting device
  - Compatible with current climbing equipment and procedures
- Value to Warfighter:
  - Reduced fatigue and increased mission efficiency
  - Increased speed and opportunity for helicopter extraction



# PRA Demonstration



# 2010

# CNR Challenge

Next Generation Technologies  
for Today's Warfighter

- Seedling Research Funding: Bring your innovative ideas here and help us uncover the “next big thing”
- Nov. 8-10, 2010: White papers submitted at the ONR Naval S&T Partnership Conference in the Director's breakout room (Potomac)
- Funding will be provided for innovations that fit the theme of the conference and the six featured science and technology topics
- Featured on Challenge.gov
  - Presidential initiative to harness Open Innovation



# People You Should Meet

Name	Program/Field	ONR Code	Room
Mr. Craig Hughes	Innovative Naval Prototypes	03I	Potomac
Mr. Jim Blesse	SwampWorks	03I	Potomac
ETCM Charles Ziervogel	TechSolutions	03I	Exhibit Hall & Potomac
Ms. Stephanie Everett	TechSolutions	03I	Exhibit Hall & Potomac
Dr. Chris Fall	Innovation Policies & Processes	03I	Potomac
Ms. Melody Cook	Strategic Planning & Innovation Outreach	03I	Potomac

## Questions/Comments?

Larry Schuette

[larry.schuette@navy.mil](mailto:larry.schuette@navy.mil)

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