

NAVAL EARTH SCIENCES AND ENGINEERING PROGRAM

CAPABILITIES, EXPERIENCE AND SERVICES



DRI scientists and engineers provide a wide-range of research and development support and specialized services for the U.S. Navy, Army, Air Force, Marine Corps and the Department of Energy.

DRI's Naval Earth Sciences and Engineering Program (NESEP) was created in 2009 to serve as an organizational focal point for the applied science and engineering research, development and services DRI provides to the Navy and its stakeholders. Today approximately 40 DRI faculty and staff contribute their expertise in atmospheric, geologic and hydrologic sciences as well as civil, geotechnical and mechanical engineering.

DRI performs tasking for the Navy through three different contract vehicles:

1. Registered with SeaPort under contract number N00178-15-D-8333
2. Maintains an Educational Partnership Agreement with NAWCWD, No. 16-2194-2009.
3. Several ongoing direct and indirect contract pathways with NAWCWD and Jacobs Engineering.

CAPABILITIES AND EXPERIENCE IN ENGINEERING AND EARTH SCIENCES

- Applied science and engineering research, development, service to U.S. Navy and its stakeholders.
- Development of effective solutions to problems in earth sciences and engineering in: ranges operations and sustainability, fleet capability and readiness, and novel operational tools to support the warfighter.
- Created, developed, and operates core service functions: Real-Time Environmental Monitoring and Alerting System (REMAS), High Performance Computational Services (HPCS).
- Development of breadth and depth of subject matter expertise and an approach to problems that involves broad stakeholder involvement from the outset to develop 'enough of an answer' to enable rapid decision making with across-the-board consensus in highly complex technical, political and bureaucratic environments.



CONTACT

Dave Decker, Ph.D. NESEP Director
and Research Professor
2215 Raggio Pkwy., Reno, NV

PHONE:
EMAIL:
WEBSITE:

775/673-7353
Dave.Decker@dri.edu
dri.edu/nesepp



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NESEP RESEARCH FACULTY AND ENGINEERING AND SUPPORT STAFF

Dave Decker, Ph.D.
Research Professor/Director
dave.decker@dri.edu

Yvonne Rumbaugh
NESEP Business Manager

Rick Susfalk, Ph.D.
Associate Research Scientist/
Lead, REMAS Programmer

Brad Lyles
Associate Research Scientist/
Lead, Field Program

Chris Pearson
Associate Research Scientist/
Field Program

John Goetz
Associate Research Scientist/
Programmer

David McGraw
Associate Research Scientist/
Programmer

Steve Bacon
Associate Research Scientist/
Geomorphology, Geotechnical
Engineering

Jenny Chapman
Research Scientist/Hydrogeology

Greg Pohl, Ph.D.
Research Professor/Hydrogeology

Eric Wilcox, Ph.D.,
Associate Research Professor
Climatology

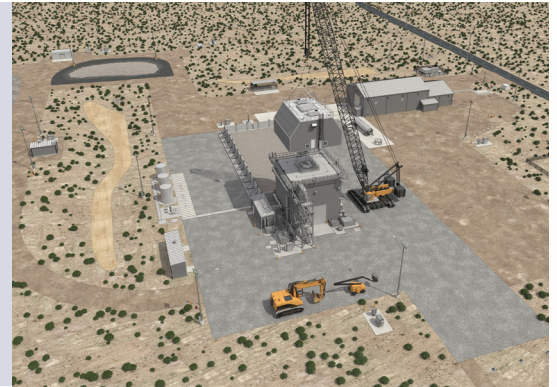
Vic Etyemezian, Ph.D.,
Research Professor Atmospheric
Sciences

Margie Stuart
Assistant Business Manager

CAPABILITIES AND EXPERIENCE IN ENGINEERING AND EARTH SCIENCES

OHIO REPLACEMENT PROGRAM SUPPORT

- Research and development in mechanical and geotechnical engineering to support test facility design.
- Ranges and instrumentation design to support facility function.
- Modeling, simulation and meteorological forecasting to support facility operational safety.



REAL-TIME ENVIRONMENTAL MONITORING AND ALERT SYSTEM (REMAS)

- Continuous environmental monitoring of NAWCWD test bays, magazines and laboratories.
- Designed and operated to enable significantly faster response by government personnel to address power, temperature and relative humidity problems before the test-article or test-operation is impacted.

HIGH PERFORMANCE COMPUTATION SERVICES (HPCS)

- Oasis - 400-core 0.5 PB computer as fast as ARL Supercomputer 'Excalibur' at a fraction of the cost.
- Serving U.S. Navy and internationally recognized science and engineering firms such as Karagozian and Case, Inc. (www.kcse.com).



EXAMPLE ENGINEERING AND APPLIED SCIENCE PROJECTS

- Earth science and engineering support for Ohio Replacement Program's 'Launch Test Capability'.
- Meteorological measurement, analysis, forecasting.
- Atmospheric plume fate and transport modeling at sub-meter scale.
- Paleo lake and landscape reconstruction, dust and sand transport, desertification, and SHPO cultural resource mapping optimization.
- Groundwater resources sustainability analysis, leadership
- Open-burn, open-detonation gas, aerosol measurement and transport.
- Novel ordnance disposal methodology development.
- Application of earth sciences and engineering to new weapon and countermeasures development.