



# HEADLINES

FALL 2018

DoD's Environmental Research Programs

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## ANNOUNCEMENTS

SERDP and ESTCP Continue Webinar Series - [View Schedule](#)

## CALENDAR

[November 27-29](#)

SERDP-ESTCP Symposium 2018  
Washington, D.C.

## RELATED EVENTS

[December 10-14](#)

AGU Fall Meeting 2018  
Washington, D.C.

## REGISTER NOW FOR THE 2018 SERDP AND ESTCP SYMPOSIUM

The 2018 Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP) Symposium will be held from November 27-29, 2018, at the Washington Hilton Hotel in Washington, D.C. As in years' past, the [2018 Symposium](#) will be centered on technical sessions that span the wide

spectrum of SERDP and ESTCP investments. For a full list of the technical session topics and speakers confirmed to date, please visit the [Symposium website](#). The technical sessions will be complemented by two poster sessions that highlight SERDP- and ESTCP-funded efforts along with the relevant work of others in the community. As in previous years, a number of short courses will be offered that provide attendees the opportunity to dive deeper into different topics and earn continuing education credits. A full list of short courses can be found on the [Symposium website](#). You must sign up to attend all short courses through the Symposium registration portal. In addition, there will be a lunch for students on Wednesday, two technology transfer panel discussions Wednesday evening, and a SERDP and ESTCP funding opportunities overview on Thursday. There will be many opportunities for networking and collaboration with the nearly 1,000 attendees from the Department of Defense (DoD), industry, and academia. [Register](#) for the 2018 Symposium today; we hope to see you there!



## ENVIRONMENTAL RESTORATION SHORT COURSE AND TECHNICAL SESSIONS

The [SERDP and ESTCP Symposium](#) is rapidly approaching and one [short course](#) and several technical sessions will be offered that highlight projects funded by the Environmental Restoration Program Area.

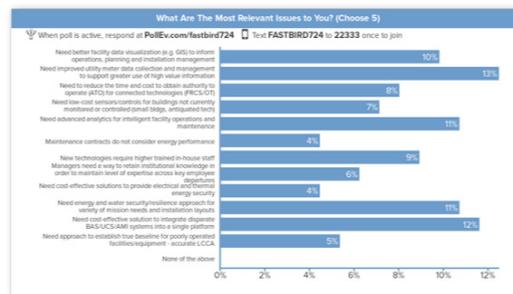
Thursday afternoon (November 29, 2018), Dr. Eric Suuberg from Brown University will present a short course based on work conducted under his [ESTCP project](#) involving finite element modeling tools for analyzing vapor intrusion. The course will teach participants the basics of the finite element method with specific application to vapor intrusion modeling through the use of COMSOL®.



Topics to be covered include geometry generation, choice and application of appropriate physics, meshing, solver configuration, and various tips and tricks. Finally, the skills learned will be used to create and run a vapor intrusion model based on a vapor intrusion site, using the site's data as inputs, with subsequent analysis of results. This short course will provide hands-on training of a software tool that will improve both site investigation and remediation. The short course requires [registration](#) and a modest fee to participate. [MORE](#)

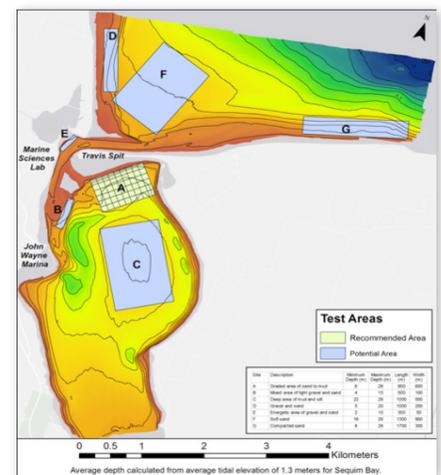
## STAKEHOLDER-BASED NEEDS IDENTIFICATION RESEARCH

To demonstrate technologies that meet/solve the current and future needs of the Services and align with the mission energy goals, under the FY18 solicitation, in collaboration with the Office of Naval Research (ONR), ESTCP funded a demonstration project that initiated a research phase of identifying Service needs. This phase applied an innovative approach to identifying and solving problems to the area of facilities energy/water management and operations. The process—Hacking for X (H4X)—includes a rigorous evaluation of identified problems through facilitated stakeholder engagement to determine root cause and prioritize them based on mission needs. The main objective of the project is to demonstrate an effective process of collaboration with installation energy staff to identify common issues and develop solutions through ESTCP technology demonstrations. [MORE](#)



## UNDERWATER MUNITIONS RESPONSE TEST SITE

Several SERDP and ESTCP Munitions Response projects have completed their initial tests or shakedown demonstrations and are ready for final testing or a final demonstration at a controlled site. Mike Richardson, a technical advisor to the Munitions Response Technical Committee, has been working for the last several years to pull together a plan for a standardized underwater test site. This plan is being put into a higher gear starting this year.



The planning started with the success of the [Standardized UXO Test Sites](#) for terrestrial systems at Aberdeen and Yuma as a model. Almost all SERDP- and ESTCP-developed technologies visited Aberdeen or Yuma—often several times—during their development and final testing as did a number of technologies developed with other support. As the state of munitions detection and classification technologies improved, the test sites underwent several generations of upgrades to maintain their usefulness. Results at the test sites were valuable both to individual developers to guide

STRATEGIC ENVIRONMENTAL  
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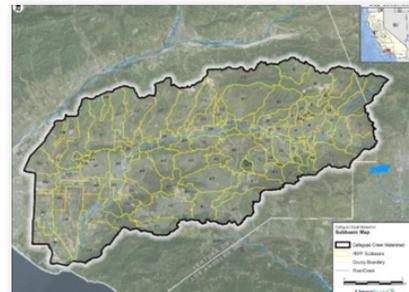
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their efforts and to the munitions response community at large to measure the progress of the entire program. After completing its use by SERDP and ESTCP, the Aberdeen site has transitioned to use by the [DoD Advanced Geophysical Classification Accreditation Program \(DAGCAP\)](#). [MORE](#)

## DEMONSTRATION AND VALIDATION OF A LINKED WATERSHED- RIVERINE MODELING SYSTEM

The DoD manages millions of acres of land in the United States through their installations and test ranges. To improve the management of water resources on these lands, SERDP and ESTCP support research related to natural resources, including watersheds and surface waters. ESTCP works to demonstrate the tools, technologies, and methodologies for the management of water resources within an installation. These methodologies seek to limit the degradation of land and surface waters due to erosion, siltation, and runoff.



Recently, Dr. Billy Johnson from the U.S. Army Engineer Research and Development Center (ERDC) led a successful [ESTCP project](#) linking a watershed and riverine modeling system for DoD installations across varying climatic and hydrologic regions. The system allows land managers to assess outcomes resulting from military activities and support installation sustainability through informed watershed management of water, water quality, contaminants, and land-use impacts. [MORE](#)

## HYDRAZINE ALTERNATIVES FOR LIQUID PROPULSION

In 2014, SERDP invited proposals for the development of environmentally-sustainable monopropellants, hypergolic bipropellants, and gas generators that avoid the use of hydrazines for divert-attitude control systems (DACS) and other liquid rocket propulsion systems. Two projects were selected and have since been working toward meeting the objectives stated within the [Statement of Need](#).

The U.S. Navy and Joseph Clubb at the [Naval Air Warfare Center - Weapons Division](#) are investigating alternative fuels that replace hydrazine-based formulations of liquid fuel systems. Hydrazine has been used as fuel for many rockets and spacecraft, including the space shuttle. The Navy has several mission-critical propulsion systems that operate using traditional liquid hypergolic formulations that include hydrazine.

The use of hydrazine and its derivatives increase overall risk to the DoD with respect to the potential for exposure to personnel and to the environment. Mr. Clubb, along with research partners from [Purdue University](#) and [Frontier Aerospace](#), have demonstrated the capability to create bi-propellant hypergolics based on biofuels ([project webpage](#)), while researchers at [Aerojet Rocketdyne](#) are leading a project to eliminate hydrazine from monopropellants used for liquid-based gas generators ([project webpage](#)). [MORE](#)

