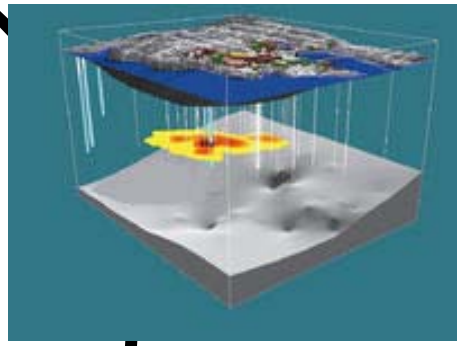
ESTCP Technology Transfer
FY 2015

Program Area Management Structure

Weapons Systems & Platforms

Energy & Water

Environmental Restoration



Resource Conservation & Climate Change

Munitions Response

Initial Work With Social Media

Recent Updates

Environmental Restoration Program, SERDP & ESTCP Video on SERDP effort led by César Torres from Arizona State University on low-cost technology using anode respiring bacteria to clean wastewater https://vimeo.com/89668755

Students clean wastewater with bacteria

vimeo.com · A team of Arizona State University students has developed a low-cost technology that uses bacteria to clean wastewater. In the process, it produces hydrogen gas,...

Like · Comment · Share · 17 hours ago

Environmental Restoration Program, SERDP & ESTCP EOS Remediation July Webinar: Dr. Shaily Mahendra from UCLA to discusses biomarker-based tools to validate 1,4-dioxane biodegradation https://lnkd.in/evs58um

Biomarker-based Tools to Validate 1,4-Dioxane Biodegradation

attendee.gotowebinar.com · 1,4-Dioxane is an emerging contaminant of concern, commonly associated with chlorinated solvent plumes. Due to its high solubility in water, resistance to biodegradation under natural conditions, and ineffective removal by technologies,...

Like (4) · Comment · Share · 15 days ago

J.D. Davis, Alessandro Cesarino +2

Focus and Lessons Learned

- Develop innovative technology transfer approaches
  - Primary target audience are end users
    - Remedial Project Managers (RPMs) within the military
    - Acquisition program managers
    - Energy managers
    - Natural resource managers
    - Regulatory agency representatives
    - Those responsible for updating design codes or standards
    - Other practitioners.
  - Different communities will benefit from approaches targeted to their needs and manner of receiving information.
  - Approaches may be applicable to a broad array of SERDP and ESTCP investment areas or narrowly focused. Both types are desirable.

2015 ESTCP FUNDED PROJECTS

Interactive Training System for Reductions in Cost and Complexity of Remediation and Long-Term Management of Contaminated Sites - David Reynolds/Geosyntec Consultants

- $369K/2 years
- Founded on ER-2313/Data Information Value to Evaluate Remediation (DIVER)
  - Computer Simulations/Virtual Site Datasets (VSDs)
  - Practitioners Guide – Return on Investments over varying site conditions
- Design/Develop Training for Environmental Monitoring Performance Optimization (TEMPO)
  - GUI interfaces DIVER and TEMPO
  - GIS interface allows deployment of investigation tools
  - 2 Training Modules – Site Investigation/Long-Term Monitoring

T2 Geophysics: A Technology Transfer Program for Facilitating Effective Use of Geophysics for Environmental Characterization and Monitoring at DoD Sites (Lee Slater/Rutgers U.)

- $339K/1 year
- Borehole Logging Technologies
- Electrical Resistance Tomography
- Technology Transfer Modules
  - Onsite 2-day Short Courses
  - Online Videos
  - Webinars
  - Online “Ask the Geophysicist” Forum
- CEUs
- Navy Alternative Restoration Technology Team (ARTT)

ER Wiki for Enhanced Transfer SERDP/ESTCP Research to Users (Bob Borden/Solutions IES, Inc.

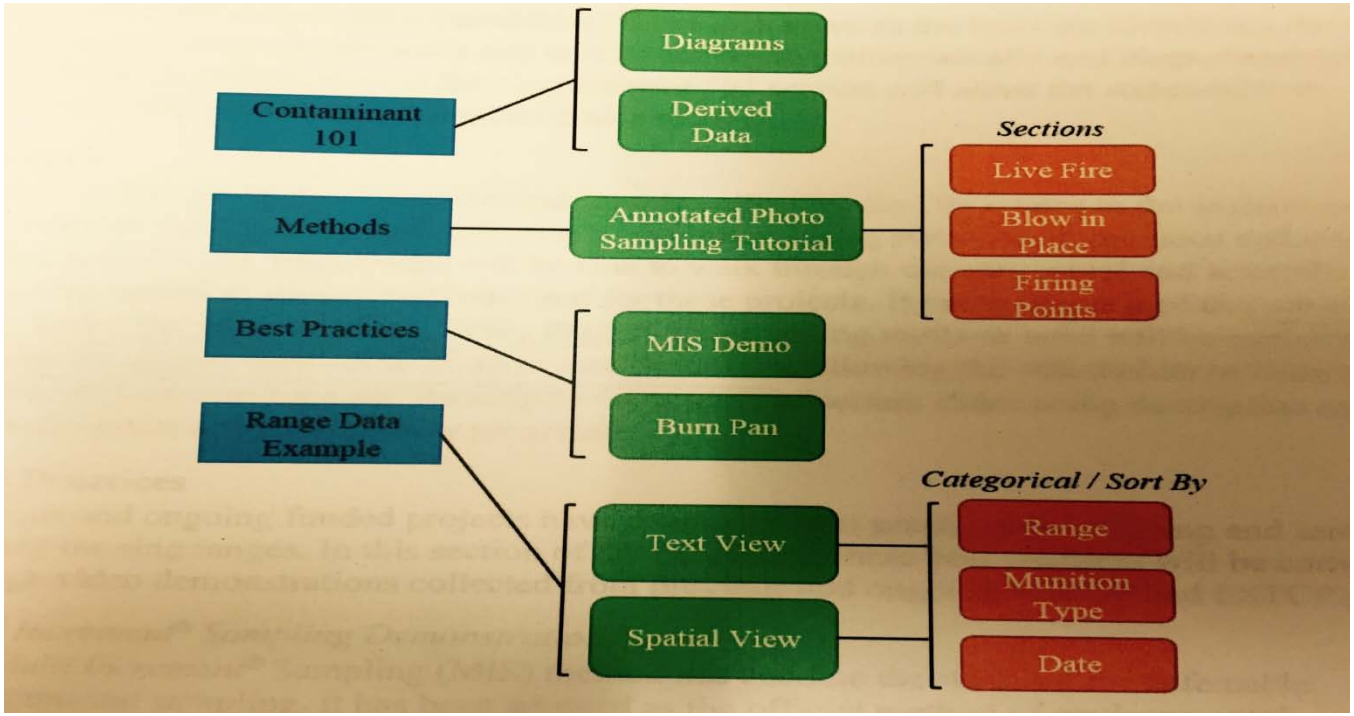
- $376K/1.5 years
- “Encyclopedia” of SERDP/ESTCP ER Information
  - Groundwater Contaminants
  - Fluid Flow and Transport
  - Characterization
  - Degradation Processes
  - Remediation Technologies
  - Performance Evaluation
  - Soil Vapor Intrusion
- Each Chapter Prepared by Academic/Industry Expert
- Hosted on SERDP/ESTCP Website
- Use of Existing Videos

Contaminant Flux and Fate in Fractured Bedock (Charles Schaefer/CDM Smith)

- $96K/1 year
- Six ½-Day Seminars at 6 Different Fractured Rock Sites
  - Identification of Contaminant Flux Zones in Fractures
  - DNAPL in Fractured Rock (architecture, groundwater impacts)
  - Diffusion in Rock Matrices
  - Sorption and Abiotic Reaction in Rock Matrices
  - Estimating Plume Longevity and Practical Limits of Remedial Effectiveness (via models, field testing techniques)
  - Discussion of Remedial Approaches

A Web-Based Repository for Energetics Contamination on Military Training Ranges (Susan Taylor/COE CRREL)

- $195K/1.5 years
- Repository Sections



Catalyzing Rapid Information Transfer Among Key Stakeholders on Per- and Polyfluoroalkyl Substances (PFASs) at Contaminated Military Sites (Jennifer Field/Oregon State U)

- $106K/1.5 years
- Frequently Asked Questions (FAQ)
- Reference Document
  - Structures, Glossary of Terms, Frequency of Occurrence Data
- Videos (3) Posted to YouTube and Program Website
- On-Line Workshops
  - Disseminate Info from FAQ and Reference Document
- On-Site Analytical Workshops for Vendor Laboratories
  - Hosted by Oregon State U and Colorado School of Mines
  - Sample Collection/Transport, Sample Prep, Analytical Strategies

Delivering Improved Understanding of Natural Attenuation Processes Using Massive Open Online Course (MOOC) (Pedro Alvarez/Rice U)

- $150K/1 year
- Enrolled Scheduled Class (9-week class)
  - Videos, Homework/Quizzes
  - Class Blog/Instructor Emails
  - Certificate of Completion
- Archived On-Demand Course (Self-paced)
  - Selected Videos, Optional Homework, Assignment Tracking
  - Review previous discussions/blogs
  - Certificate of Completion
- Utilizes Rice U's Coursera Platform

Expanding the Impact of SERDP/ESTCP Projects With On-Demand, End-User Focused, Internet Microlectures (Chuck Newell/GSI Environmental

- $315K/1 year
- Adaptation of Online El-Hi Khan Academy Approach
- Introduces SERDP/ESTCP PIs to end users
- Users see key equipment, methodologies, field sites
- Free Delivery Via SERDP/ESTCP YouTube Channel
  - Detailed Videos – 4-6 projects/8-10 minutes
  - Intermediate Videos – 4-6 projects/6-8 minutes
  - Limited Videos – 4-6 projects/4-6 minutes
- Involves all 5 SERDP/ESTCP Focus Areas

Path Forward

- SERDP/ESTCP
  - College And On-Demand Courses
  - Focused Technology Transfer Statements-Of-Need
  - Adaptive Learning Techniques
    - Artificial Intelligence
    - Game Format (e.g., ALGAE)
- User Community
  - What Courses/Videos Would You Like See SERDP/ESTCP Develop?
  - What Professional Certifications Do Regulators/RPMs Maintain and Who Is The Certifying Entity (e.g., ANSI/IACET)?

Web Site

https://www.serdp-estcp.org