The Association for Environmental Health and Sciences (AEHS) Foundation is proud to present
The 21st Annual International Conference on Soi l, Wa t e r, en e r g y, a n d air and AEHS Foundation Annual Meeting
March 14-17, 2011
Mission Valley Marriott, San Diego, California

• Over 200 Presentations • 12 Workshops • Socials • 45 Exhibitors •

The Association for Environmental Health and Sciences (AEHS) Foundation is proud to present
The 21st Annual International Conference on
SOIL, WATER, ENERGY, AND AIR
and AEHS Foundation Annual Meeting
March 14-17, 2011
Mission Valley Marriott, San Diego, California

CONFERENCE DIRECTORS: Paul Kostecki, Ph.D. and Edward Calabrese, Ph.D., University of Massachusetts, Amherst, MA
DIRECTORS EMERITI: John Hills, Irvine Ranch Water District, Irvine, CA
Stephen Eikenberry, PG, LPG, AEHS Foundation, Amherst, MA
Dear Conference Attendee,

Welcome to the 21st Annual International Conference on Soil, Water, Energy, and Air, March 14-17, 2011, San Diego, CA. The conference, which had its beginnings in petroleum contaminated soils supported by a few interested parties when it first began in 1990, has evolved to encompass a broad range of important contaminants in different media. It has drawn interest from around the world and has been supported by an impressive array of dedicated professionals serving on the Scientific Advisory Board and from other organizations who have provided the necessary resources. Appreciation goes out to the many Sponsors and Supporters who have generously contributed to our conferences throughout the years.

In 2010 the AEHS Foundation assumed the conduct of the Annual International Conference on Soils, Sediments, Water, and Energy held on the campus of the University of Massachusetts, every Fall. Last October’s conference, the 26th, was a tremendous success and we invite you to consider joining us next October in Amherst. Between the West Coast and East Coast conferences, the Foundation will reach over 1200 environmental professionals annually! You will see subtle changes as the two conferences co-evolve taking on the best aspects of each.

We are very excited about the Foundation’s new online education program. The Foundation launched its first course in September 2010 and has 8 courses in development for 2011. We will continue to expand course offerings and are in discussion with several Universities to assign college credit to our courses. Check our website for course offerings and schedules.

Attendees who registered for the West Coast Conference before March 1st had the opportunity to become a member of the AEHS Foundation for the current calendar year. Members receive the International Journal of Phytoremediation, Human & Ecological Risk Assessment, or Soil and Sediment Contamination as a primary journal (as selected on your registration form). Please note that you have the option to add either or both of the other journals for a fee of $65/ additional journal/year. Members will automatically receive hard copies of their journal(s) and online access (including access to back issues). Please see the Foundation website (www.aehsfoundation.org) or contact the office for details.

The AEHS Foundation is pleased to announce the continuation of the International Society of Environmental Forensics (ISEF) whose mission is to provide an international forum dedicated to the consolidation and exchange of information related to environmental forensics. The Foundation and ISEF have presented fourteen highly successful workshops on environmental forensics over the past nine years. Members of ISEF receive the journal, Environmental Forensics, discounts to ISEF workshops, and other unique benefits. Please check our website for membership information and future workshop postings.

The Foundation and Society are committed to serving its membership and providing an essential forum for ideas, discussion, and debate as well as solutions to a wide array of environmental problems. I hope you find that this year’s conference is one of the ways we fulfill this goal.

Sincerely,

Paul Kostecki, Ph.D.
President
Mondays, March 14, 2011
7:00 am – 3:00 pm  Registration ......................................................... Foyer
10:00 am – 10:30 am  Break ................................................................. Foyer
3:00 pm – 3:30 pm  Break ................................................................. Foyer

Workshops
Workshop 1  (8:00 am – 12:00 pm)  Geochemical Evaluations of Metals in Environmental Media: How to Distinguish Naturally Elevated Concentrations from Site-Related Contamination ................................................................. Sierra 5
Workshop 2  (8:00 am – 12:00 pm)  Advances in LNAPL Site Management - Management Options Resulting from Better Understanding ................................................................. Sierra 6
Workshop 3  (9:00 am – 5:00 pm)  In-Situ Chemical Oxidation: Focus on Green Remediation ................................................................. Santa Fe 3
Workshop 4  (1:00 pm – 4:00 pm)  California Goes Green – California's Green Chemistry Initiative ................................................................. Salon G
Workshop 5  (1:00 pm – 5:00 pm)  Classic and Emerging Environmental Forensics Techniques and Cases ................................................................. Salon H
Workshop 6  (2:00 pm – 5:00 pm)  Updated LUFT Manual: Risk Evaluation: Soil Screening Tables and Vapor Intrusion ................................................................. Salon G
Workshop 7  (2:00 pm – 5:00 pm)  Environmental Fate of Hydrocarbons in Soils and Groundwater ................................................................. Sierra 6

Tuesdays, March 15, 2011
7:00 am – 7:00 pm  Registration ......................................................... Foyer
9:00 am – 7:00 pm  Exhibit Hall ................................................................. Salons A-F
10:00 am – 10:30 am  Break ................................................................. Salons A-F
12:00 pm – 1:30 pm  Luncheon ................................................................. Cabrillo
Lunch Speaker: "The Role of Fuel Cells in the Energy Future" Scott Samuelsen, Mechanical, Aerospace, and Environmental Engineering, University of California, Irvine, CA
3:00 pm – 3:30 pm  Break ................................................................. Salons A-F

Mornings Platform Sessions
Session 1: Water Resources (8:30 am – 11:30 am) ................................................................. Sierra 5
Session 2: Ozone Treatment Optimization (9:00 am – 12:00 pm) ................................................................. Salon G

Afternoons Platform Sessions
Session 1: In-Situ Chemical Reduction (1:30 pm – 5:00 pm) ................................................................. Sierra 5
Session 2: Heavy Metals (1:30 pm – 4:30 pm) ................................................................. Salon G

Poster Session and Social
3:00 pm – 5:00 pm  (Subject to change) ................................................................. Santa Fe 3-4 and Sunroom

Welcome Reception/Wine and Cheese Social
5:00 pm – 7:00 pm  (Free to all registered conference attendees) ................................................................. Salons A-F (exhibit hall)

Workshops
Workshop 8  (8:30 am – 5:00 pm)  Addressing Regulatory Challenges in Vapor Intrusion: A State-of-the-Science Update ................................................................. Pavilion
Workshop 9  (8:30 pm – 9:30 pm)  Assessment and Evaluation of Vapor Intrusion at Petroleum Release Sites ................................................................. Sierra 5
Workshop 10  (7:00 pm – 9:00 pm)  Admissibility of Scientific Evidence in Court ................................................................. Salon G

Workshops 2, 6, 8, 9, & 11 are FREE to State, Federal, and Municipal Regulatory Personnel. See Registration Desk to Sign Up.

Wednesdays, March 16, 2011
7:00 am – 7:00 pm  Registration ......................................................... Foyer
9:00 am – 7:00 pm  Exhibit Hall ................................................................. Salons A-F
10:00 am – 10:30 am  Break ................................................................. Salons A-F
12:00 pm – 1:30 pm  Luncheon ................................................................. Cabrillo
Lunch Speaker: "What Has Happened to the Deepwater Horizon Oil Plume in the Gulf of Mexico?" Gary Andersen, Lawrence Berkeley National Laboratory, Berkeley, CA
3:00 pm – 3:30 pm  Break ................................................................. Salons A-F
3:30 pm – 3:30 pm  Online Courses Information Session ................................................................. Balboa 2

Mornings Platform Sessions
Session 1: Site Assessment/Field Sampling (8:00 am – 12:00 pm) ................................................................. Sierra 5
Session 2: Special Federal Agencies Optimization: The Evolution and Future of Remediation Optimization (8:00 am – 12:00 pm) ................................................................. Salon G
Session 3: Petroleum Hydrocarbon Vapor Intrusion I (8:30 am – 12:00 pm) ................................................................. Pavilion

Afternoons Platform Sessions
Session 1: Energy and the Environment (1:30 pm – 5:00 pm) ................................................................. Sierra 5
Session 2: Principles and Application of Remediation Risk Management (RMR) at Contaminated Sites (1:30 pm – 5:00 pm) ................................................................. Salon G
Session 3: Petroleum Hydrocarbon Vapor Intrusion II (1:30 pm – 4:30 pm) ................................................................. Pavilion
Session 4: Integrated Site Remediation Approaches (1:30 pm – 4:30 pm) ................................................................. Cabrillo

Poster Session and Social
3:00 pm – 5:00 pm  (Subject to change) ................................................................. Santa Fe 3-4 and Sunroom

Evening Social
5:00 pm – 7:00 pm  (Free to all registered conference attendees) ................................................................. Salons A-F (exhibit hall)

Workshops
Workshop 11  (6:00 pm – 9:00 pm)  Project Risk Management for Site Remediation ................................................................. Sierra 5
Workshop 12  (6:30 pm – 9:30 pm)  Utilization of Stable Isotopes in Environmental and Forensic Geochemistry Studies ................................................................. Salon G

Thursdays, March 17, 2011
8:00 am – 2:00 pm  Registration ......................................................... Foyer
9:00 am – 12:00 pm  Exhibit Hall ................................................................. Salons A-F
10:00 am – 10:30 am  Break ................................................................. Salons A-F
12:00 pm – 1:30 pm  Luncheon ................................................................. Pavilion
Luncheon Speaker: Student Contest Winners
Announcement: "Contaminants, Compliance, and Caveats: Field Studies at Doe's Ridge Integrated Field Research Challenge [IFRC] Site"
Kenneth Williams, Lawrence Berkeley National Laboratory, Berkeley, CA
3:00 pm – 3:30 pm  Break ................................................................. Foyer

Mornings Platform Sessions
Session 1: Bioremediation (9:00 am – 12:00 pm) ................................................................. Sierra 5
Session 2: Air Environment Forensics (8:30 am – 12:00 pm) ................................................................. Salon G
Session 3: Uses and Abuses of Modeling in Litigation and the Regulatory Decision Making Process (9:00 am – 12:00 pm) ................................................................. Santa Fe 3

Afternoons Platform Sessions
Session 1: Innovative Remedial Technologies (1:30 pm – 4:30 pm) ................................................................. Sierra 5
Session 2: Vapor Intrusion (1:30 pm – 5:00 pm) ................................................................. Salon G
Session 3: Environmental Forensics (1:30 pm – 4:30 pm) ................................................................. Santa Fe 3

General Information

Exhibit Hours (Salons A-F and Foyer)
Tuesday, March 15 ................................................................. 9:00 am – 7:00 pm
Wednesday, March 16 ................................................................. 9:00 am – 7:00 pm
Thursday, March 17 ................................................................. 9:00 am – 12:00 pm

Poster Sessions (Santa Fe 3-4 and Sunroom)
Tuesday, March 15 ................................................................. 3:00 pm – 5:00 pm
Wednesday, March 16 ................................................................. 3:00 pm – 5:00 pm

Socials
Tuesday, March 15 (Sunroom/Patio)  Accompanies poster session 3:30 pm – 5:00 pm
Tuesday, March 15 (Salons A-F)  Wine/welcome reception 5:00 pm – 7:00 pm
Wednesday, March 16 (Sunroom/Patio)  Accompanies poster session 3:30 pm – 5:00 pm
Wednesday, March 16 (Salons A-F)  Evening social 5:00 pm – 7:00 pm

Exhibitors (See floor plan handout for booth locations)
Accutest Laboratories
Adventus Group
Air Toxics
AirSep Corporation
AMEC Geomatics
American Analytics
Beacon Environmental Services
Blaine Tech Services
Boat Longyear
Calscience Environmental Laboratories
Cascade Drilling Center LABS, LLC
CETCO
Columbia Analytical Services
Confluence Environmental
Cupolex Building Systems
Dataforensics, LLC
ETEC, LLC
FMC Corporation
FRX
Geo-Cleanse
International Groundwater & Environmental Services (GES)
H&P Mobile
GeoChemistry
In-Situ
Interstate Technology and Regulatory Council
JRW Bioremediation, LLC Kerfoot Technologies MatCon Maxam Analytics
McDaniel Lambert
Microbial Insights
Microseps
Orange Coast Analytical
PerkinElmer
Professional Technical Media
Regenesis
RSI Drilling
SIREM
Stantec Consulting Corporation
TestAmerica Drilling Corp.
USEPA / TFSD
USEPA Office of Research and Development
WDC Exploration & Wells
Weck Laboratories
Willowstick Technologies
Announcing the 2nd Annual AEHS Foundation Achievement Awards

Presented at the Welcome Reception, Tuesday, March 15th, 5:00 pm – 7:00 pm

The Annual International Conference on Soil, Water, Energy, and Air is pleased to announce the recipients of the AEHS Foundation Achievement Award. This award is presented to individuals or organizations that have shown significant contributions to the field as well as outstanding environmental stewardship. This year’s winners are Yue Rong, California Regional Water Quality Control Board, Los Angeles, CA; Susan Henry, UCI Extension, Irvine, CA; and Stephen E. Eikenberry, retired from Naval Facilities Engineering Service Center, Port Hueneme, CA.

Yue Rong (a.k.a. “Y.R.”) is currently the Environmental Program Manager for the Underground Storage Tank Program at the California Regional Water Quality Control Board, Los Angeles Office. He has more than 20 years’ experience with the Agency in dealing with groundwater contamination problems in the Los Angeles area of California, U.S.A. He is an Associate Editor for the peer-reviewed journal of Soil and Sediment Contamination and an Associate Editor for the Journal of Environmental Forensics. Dr. Rong was elected in 2006 and re-elected in 2008 as the president on the board of directors for the Southern California Chinese American Environmental Protection Association (SCCAEPA), serving the local minority community. He is also the Editor-in-Chief for the peer-reviewed SCCAEP Online Journal. Dr. Rong is the author or co-author for about 30 peer-reviewed publications, and the editor of the book entitled “Practical Environmental Statistics and Data Analysis.” He was the recipient of the California Regional Water Quality Control Board Outstanding Achievement Award and Supervisor Performance Award. Dr. Yue Rong has his Ph.D. in Environmental Health Sciences from the University of California at Los Angeles (UCLA) and M.S. in Environmental Sciences from the University of Wisconsin.

Susan Henry enjoys a 30-year career in the environmental field that has included teaching, research, and consulting. Her early focus was environmental microbiology and bioremediation of xenobiotics, particularly chlorinated solvents, which expanded to include natural attenuation. The focus of more recent efforts has been assessment and remediation of soil and groundwater contamination, and she teaches an R/S remediation class through UCI Extension. Susan obtained a B.A. in Biology from Earlham College, an M.S. in Environmental Science from Virginia Tech, and a Ph.D. in Environmental Engineering from Stanford University. She has published and presented extensively, edited books, organized and chaired symposia, and is author of the famed “Bioreclamation Rap” which topped the charts in 1991.

Stephen Eikenberry has been an environmental professional for nearly 40 years with work ranging from evaluating acid mine drainage to advocating research and development programs. He was the head of the Naval Facilities Engineering Service Center Environmental Department where he was responsible for oversight of the Navy’s environmental research and development efforts such as the Department of Defense’s National Test Site, pollution prevention, and site cleanup programs. He also developed the Navy’s site remediation and the chemical quality assurance programs. Steve has been active with AEHS since 1993 and serves on Science Advisory Board for the San Diego Conference. He is a Registered Geologist in California and a Licensed Professional Geologist in Indiana. Steve lives in Ventura, California, with his wife and two daughters.
Vapor Attenuation:

-  Lessons learned from more than a decade of data collection, including spatial and temporal variability observed at sites and lessons from outlier site conditions.
-  Case studies.
-  Approaches to sampling frequency and data collection, and impacts on conclusions.
-  Challenges in investigating, assessing, and mitigating VI sites.

New directions and case studies illustrating.
Pre-emptive actions: applicability, benefits, costs, and drivers.
Cost-effective operations maintenance and monitoring, including the use of tracers such as radon.
Termination criteria.

This year's program will include posters and will emphasize audience and practitioner input and feedback with opportunities for questions and answers and open discussion. The agenda will be available in January 2011 at http://avirt.org.

INVITED SPEAKERS:

- Dr. Paul Johnson, Arizona State University, Tempe, AZ
- Dr. Daniel Steck, Minnesota Radon Project, St. John's University, Collegeville, MN
- Dr. Helen Dawson, U.S. EPA Office of Superfund Remediation and Technology Innovation, Washington, DC

Dr. Brian Schumacher, U.S. EPA Office of Research and Development, National Exposure Research Laboratory, Las Vegas, NV
Dr. William Wertz, formerly of New York State Department of Environmental Conservation, Albany, NY
Dr. Andy Herz, Golder Associates, Vancouver, BC, Canada
Mr. Todd McArdle, PE., PG., Geosyntec Consultants, Guelph, ON, Canada
Mr. Daniel Carr, PE., PG., Sanborn Head and Associates, Portland, ME

EPA SPONSORS/SPEAKERS:

- Steven Foster, U.S. EPA, Office of Solid Waste and Emergency Response, Washington, DC
- Douglas Grosse, U.S. EPA, Office of Research and Development, National Risk Management Research Laboratory, Cincinnati, OH

CONTACT:

- Robert S. Truesdale, RTI International, Research Triangle Park, NC

This workshop requires pre-registration – to sign up, see registration desk (free to regulators registered for conference).
Session 1: IN-SITU CHEMICAL REDUCTION (ISCR)

(1:30 pm – 5:00 pm) Sierra 5

Moderator: Stephen Koenigsberg, Adventus Group, Corona Del Mar, CA

1:30 In-Situ Reductive Immobilization of Dissolved Metals Using Zero Valent Iron and Organic Carbon Substrates
Andrzej Przepiora, Adventus Group, Mississauga, ON, Canada; Alan Seech, Adventus Americas, Inc., Irvine CA

2:00 Microorganisms Pumping Iron: Anaerobic Microbial Iron Oxidation and Reduction
John D. Coates, University of California, Berkeley, CA

2:30 In-Situ Chemical Reduction: A Discussion of ZVI and Combined ZVI-Carbon Technologies for Site Remediation
Alan Seech and Stephen Koenigsberg, Adventus Group, Corona Del Mar, CA; Andrzej Przepiora, Adventus Group, Mississauga, ON, Canada

Session 2: HEAVY METALS

(1:30 pm – 4:30 pm) Salon G

Moderator: Rodney Crother, Stantec, Lakewood, CA

1:30 Laboratory and Field Experiments on Microbial Transformation of Arsenic
Claudia Gallert, Dominik Freikowski, and Josef Winter, KIT, Karlsruhe Institute of Technology, Karlsruhe, Germany

2:00 In-Situ Chemical Reduction of Hexavalent Chromium in Soils and Groundwater Using Ferrous Sulfide (FeS) Nanotechnology
Richard Christensen and Steven R. Irvin, Acuity Environmental Solutions, Fishers, IN; Jim V. Rouse, MWH Americas, Inc., Golden, CO

2:30 Decision Framework for Applying Natural Attenuation Processes to Metals and Radionuclides
Carl Spreng, Colorado Department of Public Health and Environment, Denver, CO; Dib Goswami, Washington State Department of Ecology, Richland, WA

WORKSHOPS

Workshop 8 (8:30 am – 5:00 pm) Pavilion
Addressing Regulatory Challenges in Vapor Intrusion: A State-of-the-Science Update
Workshop #8 is FREE to municipal, state, and federal REGULATORY personnel registered for the conference.

Workshop 9 (6:30 pm – 9:30 pm) Sierra 5
Assessment and Evaluation of Vapor Intrusion at Petroleum Release Sites
Robin Davis, Utah Department of Environmental Quality, Salt Lake City, UT
George DeVaul, Shell Global Solutions, Houston, TX
Blayne Hartman, Hartman Environmental Geoscience, Solana Beach, CA
Tom McHugh, GSI, Houston, TX
Todd Ririe, BP, La Palma, CA
Matthew Young, US EPA Office of Underground Storage Tanks, Washington, DC
Workshop #9 is FREE to municipal, state, and federal REGULATORY personnel registered for the conference.

Workshop 10 (7:00 pm – 9:00 pm) Salon G
Admissibility of Scientific Evidence in Court
Ioana G. Petrisor, Ph.D., Haley & Aldrich, Costa Mesa, CA
Kevin C. Mayer, Esq., Crowell & Moring LLP
Jeffrey L. Caufield, Esq, Caufield & James LLP, San Diego, CA

Welcome Reception
Tuesday 5:00 pm - 7:00 pm Salons A-F (Exhibit Hall)
Please join us for:
• Wine Tasting Social & Networking Reception
• Achievement Award Ceremony (see page 4 for details)
• Hors d’oeuvres
• Free to all Registered Attendees
• Exhibits

Welcome Reception Sponsored by
Session 1: SITE ASSESSMENT/FIELD SAMPLING
(8:00 am – 12:00 pm) Sierra S
Moderator: Gary Foote, AMEC Earth & Environmental, Oakland, CA

8:00 Use of Bail-Down Tests to Estimate LNAPL Transmissivity
Ranga Muthu and Atul M. Salhotra, RAM Group of Gannett Fleming, Houston, TX

8:30 A Minimally Invasive Method for Characterizing Contaminated Karst and Other Complex Groundwater Systems
Val Gardner and Paul Rollins, Willowstick Technologies LLC, Draper, UT

9:00 Analytical Validity of Total Petroleum Hydrocarbon (TPH) Fractionation from Sub-Surface Samples
Jace Jones and Steve Jones, Jones Environmental, Inc., Fullerton, CA; Teri L. Copeland, Environmental Toxicologist-Private Consultant, Aguara Hills, CA

9:30 Evaluation of Field Portable Gas Chromatographs for Groundwater Hydrocarbon Analysis
Rachel Mohler, Chevron Energy Technology Company, Richmond, CA; Sheldon N. Nelson and Karen A. Synowiec, Chevron Energy Technology Company, San Ramon, CA

10:00 Break

10:30 Robust Delineation of Contamination for Remedial Design Planning to Minimize Uncertainties for Project Execution
Howard Cumberland, GeoSyntec Consultants, Portland, OR; William J. Priore, Lynchburg, OH; Darrell Nicholas, Resource Engineering & Testing, Monterey, TN

11:00 Application of an Analytical Technique for Determining Alkyl PAHs, Saturated Hydrocarbons and Geochemical Biomarkers in Water, Soil, and Tissue

11:30 Greater Understanding of Sub-Surface Contamination Via Chromatographic Profiling
Steve Jones and Jace W. Jones, Jones Environmental, Inc., Fullerton, CA; Ted Koelsch, K2 Enviro, Inc., Lake Forest, CA

Session 2: SPECIAL FEDERAL AGENCIES OPTIMIZATION: THE EVOLUTION AND FUTURE OF REMEDIATION OPTIMIZATION
(8:00 am – 12:00 pm) Salon G
Moderator: Kathy Yager, US EPA, North Chelmsford, MA

8:00 Optimization in the Superfund Program: It’s Not Just for Pump and Treat Anymore!
Kathy Yager, US EPA, North Chelmsford, MA

8:30 EPA Optimization Case Studies – Part I: Investigation and Design
Doug Sutton, GeoTrans, Inc., A Tetra Tech Company, Freehold, NJ

9:00 EPA Optimization Case Studies – Part II: Remediation, LTMO and Green Remediation
Doug Sutton, GeoTrans, Inc., A Tetra Tech Company, Freehold, NJ

9:30 USN - Green and Sustainable Remediation – Perspective and Case Study
Karla Harre, Tanwir Chaudhry, and Amy Hawkins, US Navy, Port Hueneme, CA

10:00 Break

10:30 USAF - Nationwide Optimization Program – Progress, Lessons Learned and Performance-Based Future
Javier Santillan, AFCEE, Lackland AFB, TX; SriRam Madabhushi, Booz Allen Hamilton, San Antonio, TX

11:00 U.S. Army - Future Direction of Optimization
Dave Becker, US Army Corps of Engineers, Omaha, NE

11:30 EPA’s Proposed Nationwide Optimization Strategy
Kathy Yager, US EPA, North Chelmsford, MA

Session 3: PETROLEUM HYDROCARBON VAPOR INTRUSION I
(8:30 am – 12:00 pm) Pavilion
Moderator: Todd Ririe, BP America, Inc., La Palma, CA

8:30 Sampling Considerations for Vapor Intrusion Assessments at Petroleum Hydrocarbon Sites
Blythe Hartman, Hartman Environmental Geoscience, Solana Beach, CA

9:00 Transport and Biodegradation of Petroleum Hydrocarbon Vapor Components in the Subsurface; A Soil Column Study
Eisly Escobar, Paul Dahlen, and Paul C. Johnson, Arizona State University, Tempe, AZ

9:30 Incorporating Barometric Pressure and Wind Effects into Vapor Intrusion Simulations
Hong Luo and Paul C. Johnson, Arizona State University, Tempe, AZ

10:00 Break

10:30 Vapor Cloud Model to Estimate Sub-Slab to Indoor Air Attenuation Factor
Atul Salhotra and Venkat Sambana, RAM Group of Gannett Fleming, Houston, TX

11:00 A Static Chamber for Measurements of Benzene Vapor Fluxes for Risk Evaluation
Federica Belloro and Giovanni Ferro, Ingegneria e Servizi Ambientali Ferro S.r.l., Savona, Italy

11:30 Empirical Data Supporting Groundwater Benzene Concentration Exclusion Criteria for Petroleum Vapor Intrusion Investigations
Tom Peargin, Chevron, San Ramon, CA; Ravi Kolhatkar, Chevron, Houston, TX

Information Session:
AEHS ONLINE PROFESSIONAL EDUCATION SERIES

Please join Dr. Paul Kostecki, Executive Director, and Dr. David Ludwig, Director of Education and Training, AEHS Foundation, for a special information session to discuss the Foundation’s latest endeavor: Professional Education and Online Learning. We will discuss upcoming courses and address questions related to online teaching and learning. We encourage anyone interested in gathering information about (or teaching for) AEHS Online Courses to attend.

This informal information session is during the scheduled session break. Please join us - refreshments will be served.

LUNCHEON
12:00 pm - 1:30 pm - Cabrillo

WHAT HAS HAPPENED TO THE DEEPWATER HORIZON OIL PLUME IN THE GULF OF MEXICO?
Speaker: Gary Andersen
Lawrence Berkeley National Laboratory, Berkeley, CA
Session 1: ENERGY AND THE ENVIRONMENT
(1:30 pm – 5:00 pm) Sierra 5

Moderators: Wally Hise, HDR, Salt Lake City, UT; Clay Sandidge, Sandidge Consulting, Rancho Santa Margarita, CA

1:30
The Critical Role of Fuel Cell Systems in Sustainable & Renewable Power Generation
Jack Brouwer, Perlg Margalif, and Scott Samuelson, University of California, Irvine, CA

2:00
Hawaii Interisland Cable/Wind Initiative: Regulatory and Technical Challenges
William Kucharski, AECOM, Honolulu, HI; Allen G. Karm, State Energy Office, Honolulu, HI

3:00
Siting and Permitting Utilility-Scale Solar Energy Projects
Henrik Christensen, HDR Engineering, Inc., Las Vegas, NV

3:30
Panel Discussion: “Port Sustainability Program”
Dave Cameron, City National Bank, Long Beach, CA
Capt. Richard B. McKenna, Manne Exchange of Southern California, San Pedro, CA
Anthony Lumina, Chevron Energy Solutions, Pasadena, CA
John Powell, Advanced Cleanup Technologies, Inc., Rancho Dominguez, CA
Clay Sandidge, Sandidge Consulting, Rancho Santa Margarita, CA
Leo Rossi, Highway One Management, San Pedro, CA

Session 2: PRINCIPLES AND APPLICATION OF REMEDIATION RISK MANAGEMENT (RRM) AT CONTAMINATED SITES
(1:30 pm – 5:00 pm) Salon G

Moderator: Kathy Yager, US EPA, North Chelmsford, MA

1:30
Managing Project Risks in Site Remediation
Ning-Wu Chang, DTSC/Cal EPA, Cypress, CA; Sriram Madabhushi, Booz Allen Hamilton, San Antonio, TX

2:00
RRM – Principles and Practices
Keisha Long, 3DHEC, Columbia, SC

3:30
Air Force Restoration Performance Risk Management Case Studies
Samuel Brock, AFCEE, Lackland AFB, TX; Douglas Downey, CH2M Hill, Evergreen, CO

4:00
Department of Energy’s RRM Case Study
Bob Perry, Brown and Caldwell, Livermore, CA

4:30
RRM Next Steps – Green and Sustainable Remediations
Sriram Madabhushi, Booz Allen Hamilton, San Antonio, TX; Tom O’Neill, NJ DEP, Trenton, NJ

Session 3: PETROLEUM HYDROCARBON VAPOR INTRUSION II
(1:30 pm - 4:30 pm) Pavilion

Moderator: Todd Ririe, BP America, Inc., La Palma, CA

1:30
Seal Beach, CA Case Study on Petroleum Hydrocarbon Vapor Intrusion: Or Why Residential Street Soil Vapor Samples Should Not Be Used as the Sole Basis for Risk Management Decisions
Todd Ririe, BP America, Inc., La Palma, CA; Blayne Hartman, Hartman Environmental Geoscience; Solano Beach, CA; Chuck Lambert, McDaniel Lambert, Inc., Venice, CA

2:00
Spatial and Temporal Behavior of Subsurface Petroleum Hydrocarbon Vapors
Robin V. Davis, Utah Department of Environmental Quality, Salt Lake City, UT

2:30
Site Conditions Conducive for Potential Petroleum Vapor Intrusion (PVI) Risk
Robert E. Sweeney, Petroleum and Environmental Geochemistry, Etta, CA

3:00
Break

3:30
Challenges to Multiple Lines of Evidence Vapor Intrusion Evaluations at Petroleum Release Sites
Robert Ettinger, GeoSyntec Consultants, Santa Barbara, CA

4:00
Cold Climate Vapor Intrusion Research Study - Seasonal Monitoring at Petroleum-Impacted Site in Saskatchewan, Canada
Ian Hers, Golder Associates Ltd., Burnaby, BC, Canada; Matt Lahvis and George DeVaull, Shell Global Solutions US, Inc., Houston, TX; Paul Dahlen, Emma Hong Luo, and Paul Johnson, Arizona State University, Tempe, AZ

Session 4: INTEGRATED SITE REMEDIATION APPROACHES
(1:30 pm – 4:30 pm) Cabrillo 2

Moderators: Rick Gillespie and Suzi Rosen, P.G., REGENESIS, San Clemente, CA

1:30
Pilot-Scale Biobarrier Using 3DM™ in Fractured Granite
Rebecca H. Mora, Holly Holbrook, Melissa Boysun, and Sarah Grossi, AECOM, Orange, CA; Patrice Hallman, U.S. Air Force 95th Air Base Wing, Edwards AFB, CA

2:00
Bench-Scale Evaluation of Biostimulation Versus Bioaugmentation of Chlorinated Solvents in Groundwater
Launre LaPat-Polasko and Nimisha Patel, AMEC Geomatrix, Scottsdale, AZ; Linda Conlan and Samantha Curtis, AMEC Geomatrix, Newport Beach, CA

2:30
Enhanced In-Situ Bioremediation in a Dense Residential Setting Using Re-Circulation to Remediate Recalcitrant Hydrocarbons
Maya Key and Ed Childers, Kennedy Jenkins Consultants, Rancho Cordova, CA

3:00
Break

3:30
Combining ISCO Application & Enhanced Recovery Techniques for Weathered and Other Highly Sorbed Contaminants
Craig Sandefur, REGENESIS, San Clemente, CA

4:00
Advancements in Vapor Mitigation Technology for Brownfield Redevelopment
Peter Grant, Land Science Technologies, San Clemente, CA

WORKSHOPS

Workshop 11 (6:00 pm – 9:00 pm) Sierra 5
Project Risk Management for Site Remediation
Ning-Wu Chang, DTSC, Cypress, CA
Sam Brock, AFCEE, Lackland AFB, TX
Dave Becker, USEA; Omaha, NE
Rula Deeb, Malcolm Pirnie, Inc., Emeryville, CA
Sriram Madabhushi, BAH, San Antonio, TX
Workshop #11 is FREE to municipal, state, and federal REGULATORY personnel registered for the conference.

Workshop 12 (6:30 pm – 9:30 pm) Salon G
Utilization of Stable Isotopes in Environmental and Forensic Geochemistry Studies
Paul Philip, University of Oklahoma, Norman, OK

POSTER SESSION & SOCIAL • Cash Bar • Refreshments • Hors d’oeuvres
Wednesday 3:00 pm – 5:00 pm
Santa Fe 3-4 and Sunroom
Authors will be available for individual discussion at their posters

EVENING SOCIAL
FREE TO ALL REGISTERED ATTENDEES
Wednesday 5:00 pm - 7:00 pm
Salons A-F, Exhibit Hall
Please join us for:
• Social & Networking Reception
• Hors d’oeuvres
• Open Bar (for limited duration)
• Exhibits
**Platform Sessions**

**Thursday, March 17**

**Morning Sessions**

**Session 1: BIOREMEDIATION**

(9:00 am – 12:00 pm) Sierra 5

**Moderator:** Song Jin, University of Wyoming, Laramie, WY

**9:00** High-Volume Soluble Substrate Injection to RemEDIATE Trichloroethene and Perchlorate Source Area

David Springer and Joachim Eberharder, Tetra Tech, Inc., Santa Barbara, CA; Amena Atta, Department of the United States Air Force, Vandenberg AFB, CA

**9:30** Evaluating Bioventing Scale-Up Factors for Petroleum Hydrocarbons

Alamgir Khan and Dr. Richard G. Zytner, University of Guelph, Guelph, ON, Canada

**10:00** Break

**10:30** Performance of Enhanced Anaerobic Dechlorination (EAD) via Groundwater Recirculation at Two PCE/TCE Sites

Brian Timmins, Benc, LLC, Portland, OR

**11:00** BP Oil Spill Evaluation: Aerobic Marine Degradation of Crude Oil in the Gulf of Mexico

James Jacobs, Environmental Bio-Systems, Inc., Mill Valley, CA; Stephen M. Testa, California State Mining and Geology Board, Sacramento, CA

**11:30** Side Effects of Shallow In-Situ Bioremediation

Brian Hitchens and Sam Williams, Geosyntec Consultants, San Diego, CA

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**Session 2: AIR ENVIRONMENT FORENSICS**

(8:30 am – 12:00 pm) Salon G

**Moderator:** Stephen Wall, California Department of Public Health, Richmond, CA

**8:30** Advances in Single Particle Characterization by Microscope Spectroscopy for Air Environment Forensics Source Identification

Stephen Wall, Jeff Wagner, Zhong-Min Wang, and Sutapa Ghosal, California Department of Public Health, Richmond, CA

**9:00** Identification of Airborne Microbial Agents Utilizing Raman Micro-Spectroscopy

Sutapa Ghosal, Janet Macher, and Stephen Wall, California Department of Public Health, Richmond, CA; Kadra Ahmed, University of California, Berkeley, CA

**9:30** Identification of Airborne Particles and Dispersible Powders Using FTIR, Polarized Light, and Electron Microscopy

Jeff Wagner, Donald Scales, Sutapa Ghosal, Zhong-Min Wang, Glenn Smith, and Stephen Wall, California Department of Public Health, Richmond, CA

**10:00** Break

**10:30** Assessing Ambient Concentrations of PAHs to Determine Appropriate Clean-Up Levels

Lisa Moretti and Matt Scheeline, Environmental Resources Management, Sacramento, CA; Benjamin Leslie-Bole, Environmental Resources Management, Walnut Creek, CA

**11:00** Source Characterization of Automobile Brake Wear Emissions

Zhong-Min Wang, Jeff Wagner, and Stephen Wall, California Department of Public Health, Richmond, CA

**11:30** Phased Sequential Soil Gas Investigations to Delineate a Soil VOC Source of Underlying Groundwater Contamination

Joachim Eberharder, David Springer, and Brian Dow, Tetra Tech, Inc., Santa Barbara, CA; Harry O’Neill, Beacon Environmental Services, Inc., Bel Air, MD; Craig Nathe, Department of the United States Air Force, Vandenberg AFB, CA

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**Session 3: USES AND ABUSES OF MODELING IN LITIGATION AND THE REGULATORY DECISION MAKING PROCESS**

(9:00 am – 12:00 pm) Santa Fe 3

**Moderator:** Sam Williams, Geosyntec Consultants, San Diego, CA

**9:00** Pitfalls of Statistical Analyses in Environmental Investigations

Yue Rong, Los Angeles Regional Water Quality Control Board, Los Angeles, CA

**9:30** Modeling: The Need for Transparency


**10:00** Break

**10:30** Myths, Fables, Fairy Tales and Science: The Uses and Abuses of Modeling in Environmental Litigation

Jim Derouin, Gallagher & Kennedy, Phoenix, AZ; Kevin C. Mayer, Crowell & Moring LLP, Los Angeles, CA

**11:00** Remedy Evaluation and Optimization of Perchlorate Impacted Groundwater Using Fate and Transport Modeling

Lansana Coulibaly, SGS-Sallent, San Diego, CA; Michael Foster, Kleinfelder, San Diego, CA

**11:30** Uses and Abuses of Groundwater Models Developed for Litigation

Sam Williams, Geosyntec Consultants, San Diego, CA; John Gallinatti, Geosyntec Consultants, Oakland, CA

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**LUNCHEON**

12:00 pm - 1:30 pm - Pavilion

**CONTAMINANTS, COMPLIANCE, AND CAVEATS: FIELD STUDIES AT DOE’S RIFLE INTEGRATED FIELD RESEARCH CHALLENGE (IFRC) SITE**

Speaker: Kenneth Williams,

Lawrence Berkeley National Laboratory, Berkeley, CA

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**STUDENT COMPETITION**

We are proud to announce the 7th Annual Adventus Americas Student Competition at the AEHS Foundation West Coast Conference. $500.00 (each) will be awarded to the two best student presentations. Winners will be announced at the Thursday luncheon.

**Last Year’s (2010) Winners:**

- Kimberly Rickman, California State University at Long Beach, Department of Chemistry and Biochemistry, for her platform presentation on “Removing Pharmaceuticals from Contaminated Waters using Radical Reactions”.
- Ryoji Naito, Kyoto University, Port and Airport Research Institute, Coastal and Estuarine Environment Research Group, for his poster presentation on “Environmental Fate of Polycyclic Aromatic Hydrocarbons in Sediments of Nagoya Port”.

Must be entered prior to the conference in order to compete.
Session 1: INNOVATIVE REMEDIAL TECHNOLOGIES
(1:30 pm - 4:30 pm) Sierra 5
Moderator: Susan Henry, UCI Extension, Irvine, CA

1:30 An Enzyme-Based Treatment Technology for Heavily Contaminated Dredged River Sediment
Nian She, Seattle Environmental Science and Technology, Bellevue, WA

2:00 Surfactant Enhanced Soil Washing of Oil and Gas Wastes Tank Bottom Sludge, Drilling Cuttings, Oil Sands and Impacted Soils with Associated Oil Recovery Opportunities North and South American Case Studies
George Ivey, Ivey International, Inc., Campbell River, BC, Canada

2:30 Superoxide Catalysts for In-Situ Reduction of VOCs
Will Moody and Dan Bryant, Geo-Cleanse International, Inc., Matawan, NJ; John Vidumsky, DuPont Corporate Remediation Group, Wilmington, DE

3:00 Break

Session 2: VAPOR INTRUSION
(1:30 pm – 5:00 pm) Salon G
Moderator: Elizabeth Miesner, ENVIRON, San Francisco, CA

1:30 Application of Indoor Air Mitigation System Influx/Effluent to Mitigation System Termination at the CDOT MTL Site, Denver, Colorado
Jeffrey Kurtz and Jim Cowart, EnviroGroup Limited, Centennial, CO

2:00 Updated Results from an EPA Research Program on the Vertical & Temporal Variations on Soil Gas Concentrations Near and Under a Slab
Greg Swanson, Tetratech EMI, San Diego, CA; Blayne Hartman, Hartman Environmental Geoscience, Solana Beach, CA; Brian Schumacher and John Zimmerman, EPA-ORD NERL, Las Vegas, NV; James Elliot, Tetra Tech, Santa Barbara, CA

2:30 Evaluating Paired Attenuation Factors for PCE and Radon: A Montana Case Study
Ben Martich, CDM, Helena, MT; Aimee Reynolds, Montana Department of Environmental Quality, Helena, MT

3:00 Break

Session 3: Environmental Forensics
(1:30 pm – 4:30 pm) Santa Fe 3
Moderator: Ioana Petrisor, Haley & Aldrich, Inc., Costa Mesa, CA

1:30 Beyond Litigation - Environmental Forensics Application in Site Cleanup
Ioana Petrisor, Haley & Aldrich, Inc., Costa Mesa, CA; Yvan Razafindrakotra, Avocat au Barreau de Paris, Paris, France

2:00 Is it Organic or Inorganic? – Evaluating Lead at a Former Refinery
Kanan Patel-Coleman, URS Corporation, Los Angeles, CA; William Ruoff, URS Corporation, Denver, CO; Andy Davis and Gregory G. Kipp, Geomega, Inc., Boulder, CO; Leslie Klinchuch, Chevron Environmental Management Company, Bakersfield, CA

2:30 Seeing Double: Statistical Evaluation of the Split Sediment Samples Analyzed for PCB Aroclors
Akilu Tesfamichael, Brian R. Hitchens, and Sam Williams, Geosyntec Consultants, San Diego, CA

3:00 Break

4:00 Environmental Isotope Forensics for Site Investigation and Remediation
Yi Wang, ZymaX Forensics Isotope, Escondido, CA
TUESDAY, MARCH 15
Transport of Lead in Soils Treated with Municipal Solid Waste Ash (MSWA) 
Saud S. Al-Dud, King Saud University, Riyadh, Saudi Arabia

Organic solvents for removing trace heavy metals - An alternative to ion exchange resins 
George Atther, Bomin, Inc., Fermind, MI

Concentration of Molybdenum and Selenium in Malaysian Sea Basal from the Straits of Malacca, Malaysia 
Nigar Banan and Mahyar Sakati, National University of Malaysia, Selangor, Malaysia

Hydropower & its Production via Rijke's Simple Machine 
Rohan Tharatha, In-Chandra Multiple Campus, Kathmandu, Nepal; Rijan Karki Nobel Academy Higher Secondary School, Kathmandu, Nepal

Results of In-Situ Chemical Oxidation Pilot Testing Using Sodium Permanganate 
Chad Bedr, Geosyntec Consultants, San Diego, CA; Bruce Marvin, Geosyntec Consultants, Oakland, CA

Variation of Metal Binding Fractions in Severely and Slightly Contaminated River Sediments: A Longitudinal Approach 
Jing-jong Chang, Li-chu Tsai, and Kuang-chung Yu, Cha-Nan University of Pharmacy and Science, Tainan, Taiwan

Rapid Removal of Perchlorate from Water Using Magnetic Permanently Confined Micelle Arrays 
Kristi Clark and Arthur A. Keller, University of California, Santa Barbara, CA; John Tokar III and Stanley Ostaszewski, Edgewood Chemical and Biological Center, Edgewood, MD

Degradation of Water Quality Due to Heavy Metal Pollution in Haryana, India 
J.S. Dhankhar, R.R. Dahija, R.P. Narwal, and R.S. Malik, CCS Haryana Agricultural University, Haryana, India

Developing Remediation Strategies to Address Ecological Risk at the United Heckathorn Superfund Site 
Brad Sample, Ecological Risk, Inc., Rancho Murrieta, CA; Cameron Irving, CHM Hill, Sacramento, CA; Karl Gustavson, USAEC ERDC, Washington, DC; Sharon Lin, U.S. EPA, San Francisco, CA

Primary Screening of Heavy Metals Pollution in Boushehr, Iran 
Asgar Shaker, Zamin Payesh Research Center, Shiraz, Iran; Ladan Rokhzardmaleh, Department of Environment, Tehran, Iran

Influence of Rapechin on Cucumber Tolerance and Bioaccumulation by zeas mays 
Alina Stintu, "Gheorghe Asachi" Technical University of Iasi, Romania

Dispersions and Stabilization of Zeranol: Iron Nanoparticles via Gelatin, Algicid, and Sodium Alginate 
Li-chu Tsai, Cha-Nan University of Pharmacy and Science, Tainan, Taiwan

Statistical Analysis of PCB Congener Patterns for Source Identification 
Alan Weston, Sophia Dore, Donald Pope, Leah Pabst, and Christa Nunn, Conestoga-Rovers & Associates, Niagara Falls, Canada

Wednesday, March 16
Quantifying the Responses of Urban Tree Species to Elevated Carbon Dioxide and Flooding 
Kamran Abdolah and Zhu H. Xing, Southern Urban Agricultural Research and Extension Center, CO

Effects of Atmospheric CO2 on NO3- Utilization in a Riparian Giant, Fremont Cottonwood (Populus fremontii) 
Lisa Auchincloss and James H. Richards, University of California, Davis, CA

Profiles of Successful Site Remediation with California’s UST Cleanup Funding 
Walter Bahr, State Water Resources Control Board, Sacramento, CA

Dispersal in Thin Clay Formations Using Ek3 Technology 
Jason Beaudin and Lori Johnston, Ground Effects Environmental Research and Extension Center, Toronto, ON, Canada

Characterization of Subterranean denitrifiers like-Bacteria 
Found in a Marine Sediment Under Bio-Remediation 
Herbert Fang, The University of Hong Kong, China

Water Buffaloes Remediation: The Water Buffalo as a Nutrient Changes Agent Poor Water Bioavailability and Recycling 
Andrew Kanzler, Cal State Polytechnic University, Pomona, CA

A Cost-Effective Treatment Train Approach for Redevelopment-Focused NAPL and Chlorinated Solvent Remediation 
Carl Lenker and Leo M. Rebele, Geamin Retiming, Irvine, CA

Atomic Absorption Determination of Cadmium in NANO Soil 
Determined by Alkylate-336 and 2-Heptanone 
Cen Li, King Abdullah University of Science and Technology, Jeddah, Kingdom of Saudi Arabia

A study of the biotechnological potential of rice straw - An effective substrate for the production of Lactobacillus paracasei 
Asmaa Moulay and Neitha Ziani, University of Applied Sciences and Technology, Blida, Algeria

Characterization and Suitability Evaluation of Major Agricultural Soils Towards Rational Land Area Allocation for Biofuel Feedstocks Production Cagayan Valley, Philippines 
Artemio A. Morin, Isabela State University, Isabela, Philippines; R. B. Badayos, University of the Philippines-Los Baños, Laguna, Philippines

The Selective and Specific Method for the Analysis of Hydroxides in Water and Soil 
Charis Neslund, Lancaster Laboratories, Inc., Lancaster, PA; Jia Wang, Thermo Fisher Scientific, San Jose, CA

The Method for the Analysis of NDMA at the Low Part Per Trillion Level 

LC-MS/MS Analysis of Selected Perfluorinated Alkyl Acids in Drinking Water 
Charles Neslund, Lancaster Laboratories, Inc., Lancaster, PA; Jia Wang, Thermo Fisher Scientific, San Jose, CA

Chelating Polymers for Heavy Metal Removal from Industrial Wastewaters 
Lutfur Rahman, Mahmoud B. Kabeel, and Masahith M. Yousuf, University Malaysia Pahang, Kuantan, Pahang Malaysia

An In-Situ Chemical Oxidation of Herbicides in Groundwater Using KlozuTM Activated Persulfate 
Buny Rakewich and R.W. Dicke, Nichols Environmental (Canada) Ltd, Edmonton, AB, Canada

Column Test Evaluation of Petroleum Hydrocarbon Remediation in a Biowall 
David Schroder, Stantec Consulting Corporation, Sylvia, OH; Marisa Patterson, Stantec Consulting Corporation, Okemos, MI

Experimental Study of Ground Water Contamination of Blended Containing Biodiesel 
Adeladea Tiaw, Gopal V. Kakani, Oklahoma State University, Stillwater, OK; David Weiner, Newcastle University, Newcastle, UK

Control System for a Wind Turbine with Continuously Variable Transmission 
Christa Torna, Christopher Angus, and Raevngh Singh Centennial College, Toronto, ON, Canada

Light, Water, and Heat Stress Effects on Fremont Cottonwood Photosynthesis 
Emily Izzy and James H. Richards, University of California, Davis, CA

Real-Time Treatment Optimization Utilizing In-Situ Chemical Oxidation 
Stephanie Turiot, Will Moody, Dan Bryant, Geo-Cleanse International, Inc.; Matawan, NJ; Eric Schluach, Hudson Environmental Services Inc., Somerville, NJ

Transport and Activity of Microorganisms in the Capillary Fringe 
Josef Winter, Daniel Jost, and Claudia Gallert, KIT, Karlsruhe Institute of Technology, Karlsruhe, Germany

Phytoremediation: Cost-Benefit Analysis Comparing Current European Legislation and Economic Human Toxicological Risk Assessment 
Neile Williams, Theo Theys, Nele Weyens, Jaco Vangronsveld, Hasselt University, Diepenbeek, Belgium; Robert O. Mendenhall, Yale University, New Haven, CT

Biopolymers Systems from Leather Wastes for Degraded Soils Remediation 
Gabriel Zamescu, Rodica R.Constantinescu, National R&D Institute for Textile and Leather, Bucharest, Romania; Petre Voicu, Olga Gata, Research Institute for Soil Science and Agrochemistry, Bucharest, Romania; Lucia Sandru, Research Institute for Plant Protection, Bucharest, Romania
The AEHS Foundation attributes the success of this conference, in large part, to a very dedicated and hard working Scientific Advisory Board (SAB). The SAB evaluates abstract submissions, recommends invited papers and presenters, advises with regard to session topics, and serves as conference ambassadors. The SAB is crucial to the conference development. Care is taken to create a board that represents philosophical, scientific, regulatory, and geographical balance.

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