



SURF REPORT – SUMMER 2016

SURF 31: CLIMATE CHANGE AND RESILIENCY WITHIN REMEDIATION

SURF 31 was held March 2nd and 3rd at PARSONS headquarters in Pasadena, California and focused on climate change and resiliency within remediation. The meeting included presentations from government and academia; participants liked the “mixture of practical and strategic topics” and commented that it was “great that SURF is leading [the charge] in identifying and addressing new and emerging challenges.”

An article highlighting the Keynote’s presentation is provided on page 6.



SURF’s 2016 Board of Trustees pictured at SURF 31 in Pasadena, CA. (L to R: John Simon, President; Tammy Rabideau, Secretary; Rick Wice, Member At-Large; Keith Aragona, Treasurer; Aaron Thom, Past Member At-Large; Kristin Mancini, Member At-Large; Barbara Maco, Vice President; Maile Smith, Past President)

UPCOMING MEETING:

SURF 33 – October 19-20, 2016
Boeing Washington, DC Office in
Arlington, Virginia (see page 8)

Registration and details for future SURF meetings will be available on the SURF website:

www.sustainableremediation.org

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Open

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Paul Favara, CH2M
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Contact chairs for volunteer opportunities!

ABOUT SURF

The Sustainable Remediation Forum (SURF) promotes site assessment and remediation that protects human health and the environment while maximizing environmental, social, and economic benefits throughout the project life cycle by:

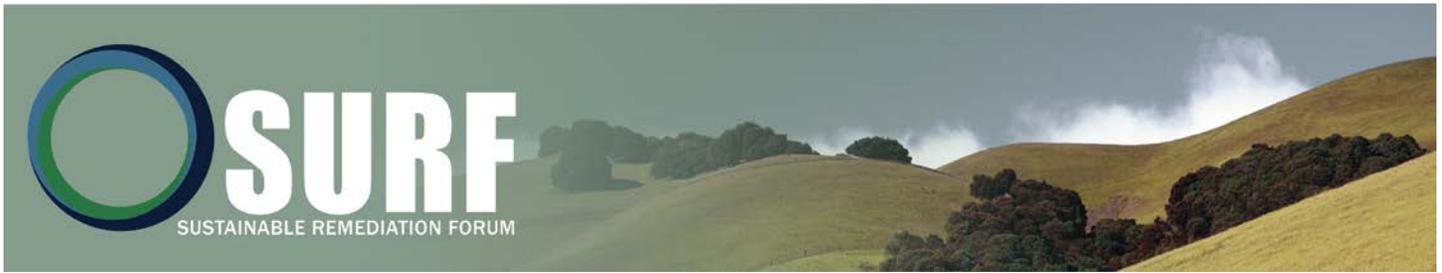
- Advancing the science and application of sustainable remediation
- Developing best practices
- Exchanging professional knowledge
- Providing education and outreach

Greetings from SURF! This newsletter is published quarterly by the SURF Communications Committee to provide you with highlights of SURF's activities and opportunities and developments in the field of sustainable remediation.

The SURF website, www.sustainableremediation.org, continues to be our primary resource for sharing the latest and greatest news about SURF and sustainable remediation. Our Online Resources page provides a one-stop shop for resources, tools, information, and documents. The Calendar shows remediation, sustainability, and related conferences, as well as deadlines for submitting abstracts. Suggestions for additions and improvements are welcome by using the Contact SURF form on the website or by emailing administrator@sustainableremediation.org.

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CSU STUDENTS AND SURF MEMBER PAUL FAVARA DISCUSS LIFE-CYCLE ASSESSMENTS

SURF member and former SURF President Paul Favara (CH2M and SURF Gold Sponsor) presented “How Engineers Can Integrate Sustainability into Engineering Projects Using System Thinking and Life Cycle Assessment (LCA)” to SURF’s Colorado State University (CSU) student chapter and other student groups on April 13th. The presentation focused on how system thinking and LCA brings broader awareness of potential environmental, societal, and economic impacts to remediation decision making. This broader awareness can drive the decision-making process to reduce sustainability impacts of current remediation technologies through minimization and optimization. But Paul believes we can do better than simple minimization and optimization—system thinking and LCA can be the innovation engine that helps us identify industry solutions that can result in the development of new and more sustainable remediation technologies and strategies.



Paul presented an example of how CH2M improved the technology of in situ bioremediation. Although in situ bioremediation is considered sustainable, it has sustainability impacts related to embedded water, agriculture impacts, and use of arable land. By using locally available substrate and renewable energy, the impacts related to embedded water, agriculture runoff, and arable land use were reduced along with cleanup costs.

After his presentation, Paul answered the students’ questions about his presentation, sustainable remediation in general, and engineering education related to sustainable remediation. Dr. Tom Sale, CSU Student Chapter Advisor, hosted a small group dinner for SURF student chapter members.

Contributed by Paul Favara



SURF MAKES A SPLASH AT BATTELLE

The Tenth International Conference on Remediation of Chlorinated and Recalcitrant Compounds was held on May 22-26 in Palm Springs, California. Overall, the conference provided a great meeting ground for subject matter experts, technical knowledge transfer and current research developments.

Keynote Jay Famiglietti (University of California, Irvine and NASA Jet Propulsion Laboratory) presented his work, which highlights global groundwater depletion using data from NASA's Gravity Recovery and Climate Experiment (GRACE) mission and has been incorporated into complex numerical simulators used to predict and understand global change.



Several technical tracks featured Green and Sustainable Remediation (GSR) topics:

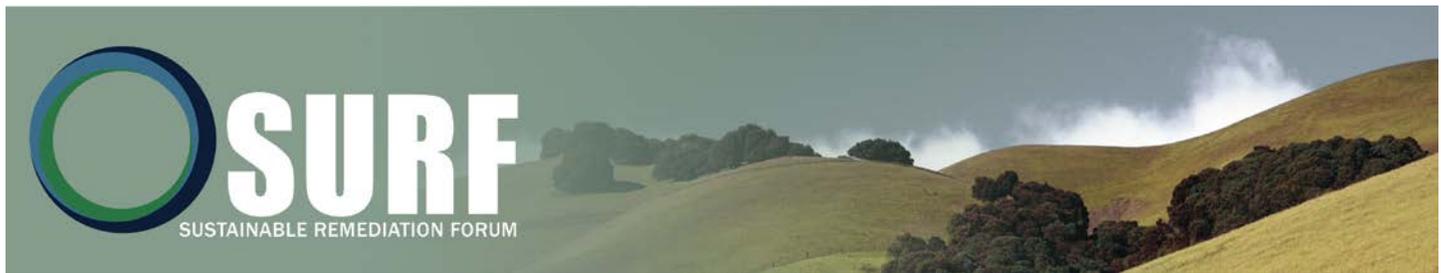
- Evaluating GSR metrics using case studies
- Restoring the environment through best management practices
- Incorporating sustainability to develop, advance, and improve remediation technologies

- Reusing and revitalizing contaminated sites
- Conserving and reusing groundwater for sustainable remediation and redevelopment
- Incorporating ecological considerations in GSR through methods and tools

Many SURF members attended the conference and several members moderated and presented as well:

- **ASTM Greener Cleanup Standard** – John Simon (Gnarus Advisors) discussed the development and voluntary use of the standard across the nation.
- **SURF Social Aspects Technical Initiative** – Melissa Harclerode (CDM Smith) described this initiative, which focuses on accounting for the impacts to the social element of the triple bottom line. She reviewed the broad impact categories and methodologies in SURF's white paper on this topic.
- **EPA Protocol: Ecosystem Service Evaluation** – Jewel Lipps (EPA) presented the protocol and tools for evaluating ecosystem services and described their integration with the green remediation evaluation process. An issue paper is anticipated to be released soon.
- **Battelle EcoVal™ Tool** – Stephanie Hines (Battelle) presented the Battelle EcoVal™ tool that assesses three categories of environmental quality: ecological integrity, intrinsic value, and utilitarian value.

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**2016 UPDATE:
SURF INITIATIVES & COMMITTEES**

Earlier this year, we endeavored to research what engages SURF members by conducting a member survey and receiving membership input during SURF 31. The survey confirmed the following overarching goals of our members: (1) increase and sustain membership and (2) expand SURF’s role as a think-tank organization.

The survey respondents, along with SURF 31 participants, ranked a number of initiatives as a high priority for 2016, including strategic organizational partnering, strengthened case studies, a sustainable

remediation proprietary database, and climate change and resiliency. The table below lists all of SURF’s initiatives and the designated leaders.

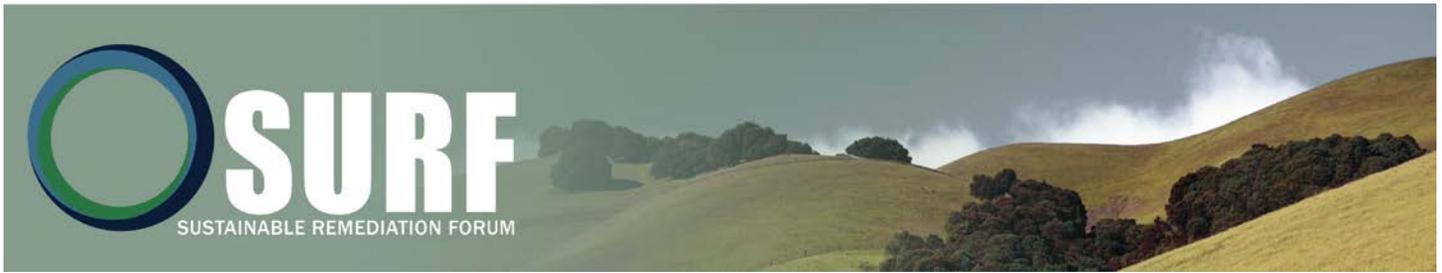
SURF has set the bar for sustainable remediation, beginning with our 2009 White Paper and continuing with other publications, presentations, and symposia (including our recent successful SURF 31 meeting in Pasadena). Clearly, SURF has established itself as a respected thought leadership organization.

The 2016 SURF Board continues to maintain the momentum the organization has built over the years. As a member, your contributions are vital to

2016 Priority Initiatives

Priority Initiative	Leader(s)	Leader E-Mail Address
Continue meetings and programs	Kristin Mancini	kristin.mancini@sustainableremediation.org
Partner with another organization and/or conference	Maile Smith	maile.smith@sustainableremediation.org
	Paul Hadley	paul.hadley@sustainableremediation.org
Conduct quarterly webinar to increase and sustain membership	Barbara Maco	vice-president@sustainableremediation.org
Communicate value of sustainable remediation to non-SURF community	Erin Healy	erin.healy@sustainableremediation.org
Create proprietary database of GSR approaches and/or products	John Simon	president@sustainableremediation.org
Strengthen Case Study Initiative	Amanda McNally	amanda.mcnally@sustainableremediation.org
Research role of sustainable remediation and reuse in climate change and resiliency (new technical initiative)	Barbara Maco	vice-president@sustainableremediation.org
Focus academic outreach	Rick Wice	rick.wice@sustainableremediation.org
Develop awards program	Tammy Rabideau	secretary@sustainableremediation.org
Coordinate with EPA	John Simon	president@sustainableremediation.org
Expand on-line communications	Maile Smith	maile.smith@sustainableremediation.org
	Jake Torrens	Jake.torrens@sustainableremediation.org
Conduct outreach on Groundwater Conservation and Reuse Technical Initiative findings	Paul Hadley	paul.hadley@sustainableremediation.org
Develop Phase II of Social Dimension Technical Initiative	Melissa Harclerode	melissa.harclerode@sustainableremediation.org

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SURF 31 KEYNOTE: IMPLICATIONS OF CLIMATE CHANGE IN REMEDIATION

Lara Hansen, Chief Scientist and Executive Director of EcoAdapt, provided the Keynote for SURF 31. The goal of her presentation was to empower participants to evaluate the implications of climate change on remediation. Lara showed through case studies that when climate change is not explicitly considered in remediation planning, near-term efforts can be undermined and long-term goals will be unachievable.

Lara explained that sustainability requires adaptation (i.e., limiting the effects of current and committed climate change on human and natural systems). She described adaptation as a continuum, beginning with resistance (i.e., how to stop change from happening), resilience (i.e., how to make existing processes continue to function and obtain desirable results), and response (i.e., how to accelerate or move remediation). For each of these approaches, five overlying tenants exist:

1. Protect adequately and appropriately for a changing world.
2. Reduce non-climate stressors that are exacerbated by or exacerbate the effects of climate change.
3. Manage for uncertainty.
4. Reduce the rate and extent of local and regional climate change.
5. Reduce the rate and extent of global climate change.

Lara presented emerging examples of how these factors are being considered, including tools and methodologies, and encouraged SURF 31 participants to integrate these factors more broadly to create better long-term outcomes for remediation efforts.

*Contributed by Kathy Adams
and Lara Hansen*

SHARE YOUR NEWS; KEEP US POSTED

Do you have sustainable remediation news to share? SURF's LinkedIn page, managed by the SURF Communications Committee, can be used to spread the word about news and announcements and allows SURF members another opportunity to connect. Or, write a viral blog entry on the SURF News blog on SURF's website!

To join SURF's page on LinkedIn, search for "Sustainable Remediation Forum" and look for the SURF logo. To post a blog entry, contact Jake Torrens at jtorrens@haleyaldrich.com.

THANK YOU TO SURF'S SPONSORS!

Gold

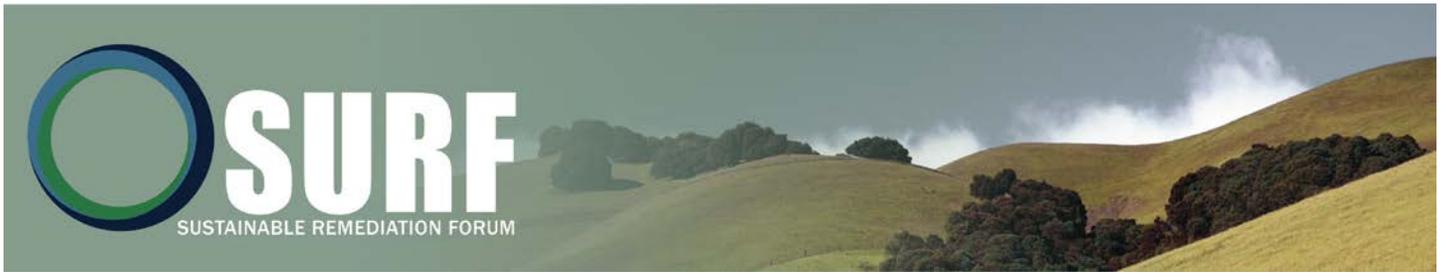
Boeing • CH2M • Shell

Silver

AECOM • Amec Foster Wheeler • Cascade Drilling
CDM Smith • Haley & Aldrich • Terra Systems

Bronze

Envirocon • ExxonMobil • Tetra Tech



SUSTREM 2016 SNAPSHOT: MEANINGFUL STAKEHOLDER ENGAGEMENT, INTERNATIONAL FRAMEWORKS AND PRACTICES, AND GLOBAL DEVELOPMENTS

Organized by SuRF-Canada, the 4th International Conference on Sustainable Remediation (SustRem 2016) was held April 26-28 in Montréal, Quebec, Canada, as part of the 2016 Federal Contaminated Sites National Workshop hosted by the Real Property Institute of Canada. (For more information, click [here](#).) SURF members and sponsors shined as members of the conference scientific committee, leaders of short courses, and platform presenters during the conference.



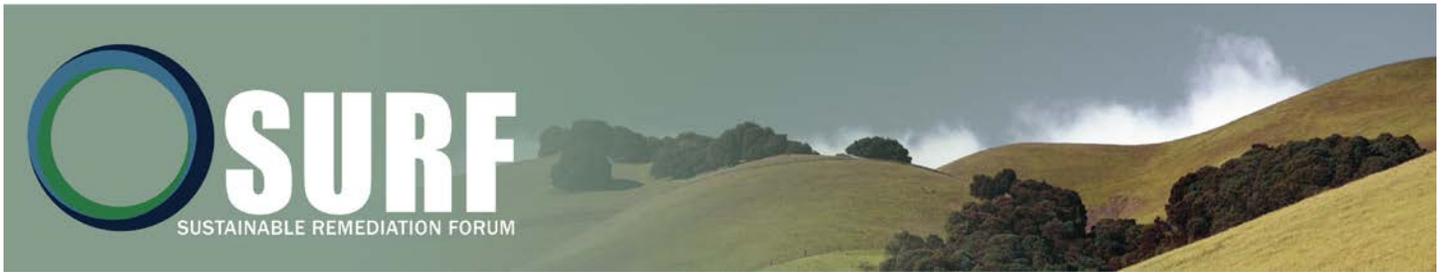
(L to R) Paul Favara, Mel Harclerode, Amanda McNally, and Barbara Maco enjoyed catching up over a gourmet spread at the École des métiers de la restauration et du tourisme de Montréal (former Brownfields site) during the SustRem networking dinner.

Meaningful stakeholder engagement – when and how best to incorporate stakeholders into the remediation process – was a key theme of several presentations and a short course (“The Role of Stakeholder Collaboration in Sustainable

Remediation: Its Purpose, Benefit, and Process”) taught by former SURF Board member Melissa Harclerode (CDM Smith, SURF Silver Sponsor) and Reanne Risdale (University of Saskatchewan, SuRF-Canada).

Several SURF members gave presentations on sustainable remediation frameworks and best management practices. One presentation from Deborah Edwards (ExxonMobil, SURF Bronze sponsor) and Anne Fitzpatrick (AECOM, SURF Silver Sponsor) featured the sustainability framework for the Portland Harbor Sustainability Project, the first of its kind for a large sediment Superfund project (“Developing a Sustainable Remediation Approach for Portland, Oregon Sediment Site”). Paul Favara (CH2M, SURF Gold Sponsor), a member of the SustRem scientific committee and former SURF President, gave a number of presentations, including one on resource conservation (“Utilization of Waste Materials, Non-refined Materials and Renewable Energy in In Situ Remediation”). The SURF Groundwater Reuse Initiative was featured in a presentation by Amanda McNally (AECOM, SURF Silver sponsor). This talk featured a new case study from Australia demonstrating the use of a solar thermal aerobic recirculation remediation system. Coffey, a Tetra Tech Company, SURF silver sponsor, was awarded the inaugural SuRF ANZ/ALGA Sustainable Remediation Project Award in 2015.

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2016 Update, continued from page 5

SURF's continued success in advancing the practice of sustainable remediation and expanding our role as a think-tank organization. We encourage you to challenge yourself, join us, and participate actively in SURF. If you'd like to participate in any of the efforts listed in the table on page 5, e-mail the leader listed or Tammy Rabideau at secretary@sustainableremediation.org.

*Contributed by John Simon
and Barbara Maco*

**SAVE THE DATE FOR SURF 33:
OCTOBER 19-20, 2016**

SURF 33 will be held October 19-20, 2016 at Boeing's Washington, DC Office in Arlington, Virginia. The meeting, Sustainable Remediation: What We've Learned and Where We're Going, will focus on sustainable remediation successes, failures, and improvements at the project, program, and organization level as well as innovative and new remediation strategies that support sustainable remediation. Abstracts should be submitted to Kristin Mancini (kristin.mancini@arcadis-us.com).



At SURF 31, John Simon (SURF 2016 President) and Maile Smith (SURF 2015 President) presented Kristin Mancini (Member At-Large) with a SURF Appreciation Award for all of her hard work and dedication as the SURF Meetings and Programs Committee Chair. Thanks so much for all you do Kristin!





SustRem 2016 Snapshot, continued from page 7

The final conference day featured a panel discussion with international SURF organization leaders and the Network for Industrially Contaminated Land in Europe (NICOLE) highlighting new global developments and initiatives. Barbara Maco (Wactor & Wick LLP, SURF Vice President) spoke on behalf of SURF, laying out SURF's strategic plan for the coming year, including initiatives on climate change and resiliency. SURF is also a participant in the newly formed International Sustainable Remediation Alliance (ISRA), a collaboration with the Common Forum of European regulators and NICOLE. ISRA aims to support the work of individual sustainable remediation networks by:

- Demonstrating a united purpose
- Cooperating in promoting the message of sustainable remediation globally
- Supporting the dissemination and adoption of sustainable remediation globally
- Exhibiting collaboration to large global bodies such as the United Nations

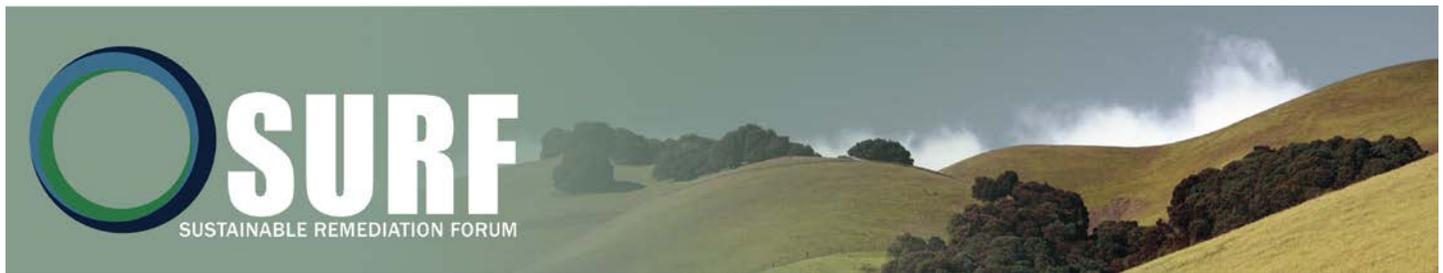
Thanks to the SURF members who contributed to this successful event. Participants left energized and inspired to continue their efforts in leading the remediation community toward a sustainable state. The opportunity to collaborate with our like-minded colleagues in this setting was unique, and we look forward to seeing the progress made at upcoming SURF meetings and SustRem 2018.

Contributed by Amanda McNally

SURF at Battelle, continued from page 4

- **Landfill Cover Design** – Anthony Eallonardo (OBG) discussed landfill cover design from the perspective of an ecologist. He presented success stories of constructed wetlands that mimic the plant diversity and conditions of at-risk local ecosystems.
- **Sustainable Techniques in Temperature Management** – Ryan Belcher (Amec Foster Wheeler) discussed two nearly identical remediation systems: one in the Californian desert and the other in central New Hampshire. Sustainable techniques in temperature management were discussed, as well as the importance of working with the climate in each case.
- **Remediation Decision Making and Behavioral Economics Survey** – Wilson Clayton (Trihydro Corporation) discussed the results of this industry survey that revealed the common use of gut intuition in the remediation industry compared with decision analysis.
- **Balanced Remedial Approach** – Stephen Kessel (Brown and Caldwell) discussed the challenges associated with the redevelopment of a former chemical manufacturing site. A power plant will be constructed on a portion of the site while the remaining areas will be the location of a wetland and public walking trails.

Contributed by Deepti Nair



UPCOMING EVENTS AND CONFERENCES

6th Nordic Joint Meeting on Remediation of Contaminated Sites – September 5-8, 2016 – Aalto University, Espoo, Finland

Nordrocs 2016 will be held September 5-8, 2016 in Finland. The theme of the conference is “Circular Economy,” which means reusing, repairing, refurbishing, and recycling existing materials and products. The aim is to look beyond waste and to close the loop of the circular economy. For more information or to register, click [here](#).

32nd Annual International Conference on Soils, Sediments, Water, and Energy – October 17-20, 2016 – University of Massachusetts at Amherst, Amherst, MA

This annual conference will be held October 17-20, 2016 in Amherst, Massachusetts. The theme of the conference is “Assessment, Remediation, Regulation, and the Energy Environmental Interface.” Registration will begin in July. To view a preliminary program, click [here](#).

Ninth International Conference on Remediation of Contaminated Sediments – January 9-12, 2017 – Sheraton New Orleans, New Orleans, LA

This conference will be held January 9-12, 2017 in New Orleans, Louisiana, with the goal of sharing research results, practical experiences, and opportunities associated with remediating, restoring and managing the environmental and economic vitality of waterways. Anticipated topics include sustainability in terms of remedy implementation and management approaches. For more information, click [here](#).

Fourth International Symposium on Bioremediation and Sustainable Environmental Technologies – May 22-25, 2017 – Hyatt Regency Miami Hotel, Miami, FL

The Fourth International Symposium on Bioremediation and Sustainable Environmental Technologies will be held May 22-25, 2017 in Miami, Florida. Anticipated topics include green and sustainable remediation; sustainable site management strategies; bioremediation technologies; evaluating and mitigating vapor intrusion; and biodegradation of emerging contaminants. For more information, click [here](#).

Please note: there are too many events and conferences to list in the SURF newsletter, for a complete list of upcoming environmental and remediation events please view the SURF calendar: <http://www.sustainableremediation.org/calendar/> for links to conference websites and information.

GET SOCIAL WITH SURF!



Search LinkedIn for
“Sustainable
Remediation Forum”
to join



@SR_Forum

SURF MEMBERSHIP

NEWSLETTER SUBMITTALS:

Deadline is the 15th of March, June, September, and December for the following quarterly issue. Contact the Newsletter Editor by email for submittal:

Gerlinde Wolf, AECOM
newsletter@sustainableremediation.org

Submittals are subject to editing for space considerations.

Address Changes

Please submit to the SURF Secretary at secretary@sustainableremediation.org.

Circulation

The newsletter is circulated to about 500 individuals directly and is posted online at www.sustainableremediation.org.

Sponsorship

Sponsorship is a great way to demonstrate to your communities, clients, employees, or shareholders that you are committed to advancing the science and application of sustainable remediation.

As an appreciation for sponsorship:

- Your company or organization will receive complimentary SURF memberships and meeting registrations
- Your company's or organization's name will be displayed on the SURF website and hyperlinked to your webpage
- Your company's or organization's name will be displayed in the SURF newsletter and announced during SURF events
- Your company or organization may use the SURF Sponsor logo

To inquire about sponsorship options, contact:
membership@sustainableremediation.org.

Join SURF or Renew your Membership TODAY!

SURF provides great value to our members, the public, and the practice of remediation. We do this by supporting:

- Alignment with organizational sustainability goals
- Environmental footprint reduction
- Social responsibility and public outreach
- Reduced remediation costs and long-term liabilities
- Innovative thinking, research, and real world application
- Peer benchmarking (domestic and international)
- Access to leading-edge case studies
- Opportunities to collaborate on publications
- Networking and access to subject matter experts
- Academic outreach and mentoring

By joining SURF, you establish partnerships and build relationships with a wide variety of remediation stakeholders: industry and agency peers, customers, clients, academia, technology vendors, and the public. Our website, meetings, and communications provide a clearinghouse and source for the latest information about policy, case studies, best practices, and educational opportunities.

As a member, you have the opportunity to participate in SURF's Technical Initiatives. SURF has published several groundbreaking guidance documents, and recent or current initiatives include examining more sustainable practices for water use and reuse, compiling sustainable remediation case studies, assessing the social aspects of sustainable remediation, and exploring the viability of a sustainable remediation site rating and professional certification system.

SURF has several membership levels based on an individual's qualifications: Regular Member (dues are \$150 annually for new members and \$140 for renewing members), Government Member (dues are \$50 annually), and Student Member (dues are \$25 annually).

The term for all classes of Members is February 1 through January 31 of the following year.

Learn more and apply for membership at www.sustainableremediation.org/membership/.