

June 2-6, 2024 | Denver, Colorado

**Thirteenth International Conference on Remediation
of Chlorinated and Recalcitrant Compounds**

Call for Abstracts

ABSTRACTS DUE October 30, 2023

battelle.org/chlorcon
#Chlorinated2024

BATTELLE

Battelle's Chlorinated Conference provides the most comprehensive update on innovations and technologies to address chlorinated- and recalcitrant compound-contaminated sites.

The Thirteenth International Conference on Remediation of Chlorinated and Recalcitrant Compounds will be held June 2-6, 2024, in Denver, Colorado, at the Colorado Convention Center.

Battelle's Chlorinated Conference is the premier meeting, with the most comprehensive overview, on the application of innovative technologies and approaches for characterization, monitoring, and management of recalcitrant compound-contaminated sites.

The 2022 Conference presented the most extensive technical program offered to date with nine wide-ranging technical tracks, educational opportunities, exhibits, live demonstrations, and networking opportunities. With more than 1,100 platform and poster presentations in 82 technical sessions, 10 short courses, six panel discussions, and 25 Learning Lab demonstrations to choose from, there were untold opportunities to meet, learn, and share ideas with more than 1,500 members of the environmental remediation community from 27 countries.

The 2024 Conference will be another outstanding opportunity for the environmental remediation community to meet, learn, and network with the best-of-the-best in science, engineering, consulting, and regulation from universities, state and federal government agencies, R&D, and manufacturing firms from around the world.

The technical program will be conducted Monday–Thursday, June 3–6. Short Courses will be conducted on Sunday, June 2, and Tuesday afternoon, June 4. The breadth and depth of the technical program, combined with daily opportunities to meet and engage with other environmental professionals, will make participation in the Conference a valuable investment for you and your organization.

The Preliminary Program brochure will be available at www.battelle.org/chlorcon in March 2024.

IMPORTANT DATES

October 16, 2023

General exhibit sales open

October 30, 2023

Abstracts due

November 13, 2023

Short Course proposals due

November 13, 2023

Learning Lab proposals due

Conference Sponsors

Battelle gratefully acknowledges the financial commitment and support of the following organizations. Information about Conference Sponsorship can be found on the Conference website on the **Sponsors & Exhibitors** page.

The Conference is organized and presented by Battelle.

Battelle's environmental engineers, scientists and professionals offer focused expertise to government and industrial clients in the U.S. and abroad. Combining sound science and engineering solutions with creative management strategies, Battelle works with clients to develop innovative, sustainable and cost-effective solutions to complex problems in site characterization, assessment, monitoring, remediation, restoration, and management.

Every day, the people of Battelle apply science and technology to solving what matters most. At major technology centers and national laboratories around the world, Battelle conducts research and development, designs and manufactures products, and delivers critical services for government and commercial customers. Headquartered in Columbus, Ohio, since its founding in 1929, Battelle serves the national security, health and life sciences, and energy and environmental industries.



Technical Program Scope

Examples of anticipated presentation topics are listed below; use the numerical codes to reference topics you believe are the best match for your proposed presentation. **This is neither a final nor comprehensive list. Abstracts are welcome on all relevant topics.** Presentations will address the full range of technologies that can be used to remediate sites contaminated by chlorinated and other recalcitrant compounds. Risk, regulatory, and site management issues associated with these technologies will be discussed. The program will emphasize field applications, case studies, and rational site-closure approaches, but submissions on fundamental research and laboratory, pilot, and modeling studies are encouraged. **Researchers are also encouraged to consider presenting experimental artifacts in their laboratory and field research, and how those were addressed.**

Remediation Technology Innovations

- 1a. Abiotic and In Situ Biogeochemical Processes: Applications and Lessons Learned
- 1b. Bioremediation: Advances in Amendment Formulations
- 1c. Permeable Reactive Barriers: Best Practices and Lessons Learned
- 1d. Combined Remedies and Treatment Train Technologies
- 1e. Electro-Enhanced Technologies
- 1f. Emerging Remediation Technologies
- 1g. Thermally Enhanced In Situ Degradation Processes at Sub-Boiling Temperatures
- 1h. Horizontal Wells: Applications and Lessons Learned in Site Characterization and Remediation
- 1i. In Situ Chemical Oxidation: Optimized Design Approaches and Lessons Learned
- 1j. Injectable Activated Carbon Amendments: Lessons Learned and Best Practices
- 1k. Innovations in ZVI Amendment Formulations and Applications
- 1l. Innovative and Optimized Amendment Delivery and Monitoring Methods
- 1m. In Situ Technologies: Lessons Learned
- 1n. Monitored Natural Attenuation: Innovative Monitoring Approaches/Lines of Evidence and Lessons Learned
- 1o. Advanced Oxidation Processes and Other Ex Situ Remediation Technologies
- 1p. Advanced and Synthetic Biological Treatment Applications
- 1q. Electrical Resistance Heating: Best Practices and Lessons Learned
- 1r. Thermal Conductive Heating: Best Practices and Lessons Learned

Assessing Remediation Effectiveness

- 2a. Remedial Design/Optimization: Applications of Mass Flux and Mass Discharge
- 2b. Remedy Implementation: Assessing Performance and Costs
- 2c. In Situ Activated Carbon-Based Amendments: Assessing Effectiveness and Performance
- 2d. Multi-Site Portfolios: Optimizing Data Management
- 2e. Compound-Specific Isotope Analysis: Case Studies in Evaluating Remedy Performance

- 2f. Site Closure: Models Used to Estimate Cleanup Timeframes
- 2g. Data Analytics: Use of Machine Learning and Artificial Intelligence Tools for Improved Analysis, Optimization and Decision Making
- 2h. Optimizing Remedial Systems
- 2i. Setting Cleanup Goal End Points: When Are We Done?

Green and Sustainable Remediation

- 3a. GSR Best Practices and Nature-Based Remediation Case Studies
- 3b. GSR Metrics and Sustainable Remediation Assessment Tools
- 3c. Climate Resilience and Site Remediation
- 3d. Aligning Remediation Goals with Environmental, Social, and Governance (ESG) Considerations

Addressing Challenging Site Conditions

- 4a. Adaptive Site Management: Lessons Learned for Site Characterization and Remedy Implementation
- 4b. Landfill Assessment and Remediation
- 4c. Landfill Post-Closure Redevelopment
- 4d. Large, Dilute and Commingled Plume Case Studies
- 4e. DNAPL Source Zone Remediation: Lessons Learned
- 4f. Low-Permeability Zone Challenges, Permeability Enhancements, and Case Studies
- 4g. Evaluating Surface Water/Groundwater Interactions: Innovative Monitoring Approaches and Modeling Applications
- 4h. TSCA-Regulated PCB Assessment and Remediation

Fractured Rock and Complex Geology

- 5a. Technical Impracticability: Challenges and Considerations for Evaluation of Fractured Rock Sites
- 5b. Depositional Environments and Stratigraphic Considerations for Remediation
- 5c. Remediation Approaches in Fractured Rock and Karst Aquifers
- 5d. Process-Based Conceptual Site Models (CSMs) for Informing Remediation
- 5e. Advances in the Application of Geologic Interpretation to Remediation

Petroleum and Heavy Hydrocarbon Site Strategies

- 6a.** Heavy Hydrocarbons: Characterization and Remediation
- 6b.** In Situ Remediation of Petroleum Hydrocarbons
- 6c.** LNAPL Recovery/Remediation Technology Transitions
- 6d.** Natural Source Zone Depletion
- 6e.** Surfactant-Enhanced Remediation
- 6f.** TPH Risk Assessment and Metabolites
- 6g.** LNAPL Sites: Understanding and Managing Risks

Per- and Polyfluorinated Alkyl Substances (PFAS)

- 7a.** Advances in the Analysis of Non-Target Per- and Polyfluorinated Alkyl Substances (PFAS)
- 7b.** Ex Situ PFAS Treatment Approaches
- 7c.** Ex Situ PFAS Destruction Technologies
- 7d.** Ex Situ PFAS Water Treatment Technologies
- 7e.** Ex Situ PFAS Treatment: Soils/Solids and Other Waste Streams
- 7f.** In Situ PFAS Treatment Approaches
- 7g.** PFAS and Bugs: The Search Continues
- 7h.** PFAS Fate and Transport
- 7i.** PFAS Fate and Transport Properties
- 7j.** PFAS Conceptual Site Model Approaches
- 7k.** PFAS Program Management in a Rapidly Changing Regulatory Environment
- 7l.** PFAS Human Health and Ecological Risk Assessment and Toxicity
- 7m.** PFAS Site Characterization
- 7n.** PFAS Source and Forensic Considerations
- 7o.** PFAS: Drinking Water Treatment Case Studies
- 7p.** PFAS: Groundwater Treatment Case Studies
- 7q.** Managing PFAS at Publicly-Owned Treatment Works (POTWs)

Metals

- 8a.** Managing Chromium-Contaminated Sites
- 8b.** Mining and Uranium Site Restoration
- 8c.** Precipitation and Stabilization of Metals

Vapor Intrusion

- 9a.** Advances in Vapor Intrusion Investigations
- 9b.** Vapor Intrusion Mitigation and Effectiveness
- 9c.** Vapor Intrusion Preferential Pathways
- 9d.** Vapor Intrusion Risk Assessment and Site Management

Characterization, Fate and Transport

- 10a.** Advanced Investigation Tools and Techniques
- 10b.** Advanced Sampling and Analysis Tools and Techniques
- 10c.** Advanced Geophysics and Remote/Direct Sensing Tools and Techniques
- 10d.** Conceptual Site Models: Improvements in Development and Application
- 10e.** Groundwater Modeling: Advancements and Applications
- 10f.** High-Resolution Site Characterization (HRSC)
- 10g.** MIP/HPT/LIF/UVOST: Realtime HRSC Tools and Techniques
- 10h.** HRSC Suites of Tools to Improve CSMs
- 10i.** Improvements in Site Data Collection, Data Management, and Data Visualization

Advanced Diagnostic Tools

- 11a.** Environmental Forensics: Site Characterization and Source Determinations
- 11b.** Remote Sensing, Drones, and Other Unmanned Systems for Remote Monitoring and Site Assessments
- 11c.** Using Omic Approaches and Advanced Molecular Tools to Optimize Site Remediation

Technology Transfer and Stakeholder Communications

- 12a.** Expedite Site Closure: Innovative Strategies and Approaches
- 12b.** Practice of Risk Communication and Stakeholder Engagement

International Environmental Remediation Markets

- 13a.** International Remedy Applications: Regulatory and Logistical Challenges of Remediation Abroad

Emerging Contaminants

- 14a.** 1,4-Dioxane Remediation Challenges
- 14b.** Advances in 1,4-Dioxane Biological Treatment Technologies
- 14c.** Explosives, Perchlorate
- 14d.** Microplastics
- 14e.** Pharmaceuticals and Viruses
- 14f.** Microplastics, Pharmaceuticals, and Other Emerging Contaminants

Abstract Preparation and Submittal

Abstracts are due October 30, 2023.

Battelle is in the process of implementing a new Conference Management System for all Conferences that will encompass abstract submission, Session Chair review and placement, Exhibitor management, and attendee registration.

Upon your first interaction with the new system, you will be prompted to create a username/password and attendee profile.

The program will be developed through an intense, multilevel review by the Program Committee and the Session Chairs.

To ensure full opportunity for placement in the program, abstracts should be submitted by October 30, 2023.

Content & Required Subheadings. Abstracts must be in English and be well-written to clearly and concisely outline the material being proposed for presentation. Abstracts with a pronounced commercial slant will not be accepted. Abstracts must convey the information reviewers will need to assess the scope of the work and the data likely to be available at the time of the presentation, determine its relevance, compare it with other proposed presentations, and, if accepted for the program, assign it to an appropriate session. More than 1,200 abstract submissions are expected.

Abstracts must be organized under the following required subheadings:

- 1) **Background/Objectives:** State the problems, situations, and objectives that led to the work intended to be presented. For pilot- or field-scale work, briefly summarize the history, climate, and other pertinent conditions of the site(s). If the site(s) cannot be named for reasons of confidentiality, provide enough information to establish context.
- 2) **Approach/Activities:** Describe the project scale (e.g., laboratory, field) and identify the scientific principles, technology, or combination of technologies being studied.
- 3) **Results/Lessons Learned:** Mention any results that can be discussed now and describe the types of data and analyses expected to be available at the time of presentation.

Submittal. Abstracts are to be submitted online via the link found on the “**Abstract Specifications and Submittal**” webpage. Abstracts submitted by email will not be accepted for review. The online submittal form will require complete contact information (postal mailing address, phone number, and email) for the primary author and for all co-authors. Session placement and format preference suggestions (platform or poster) may be entered on the submittal form.

The corresponding/presenting author's preferences will be considered by the reviewers but cannot be guaranteed. Final decisions on placement and format are made by the program committee and will be based on best overall design of the Conference program.

Notification of Acceptance/Placement. In late February 2024, the corresponding/presenting author of each abstract will be notified by email of the placement decision. If the abstract was accepted, this email will state the session and format (platform or poster) to which it was assigned and provide information on preparing the presentation and submitting an updated abstract shortly before the Conference.

Inquiries. Questions about abstract preparation and submittal should be addressed to chlorcon@battelle.org.

PROGRAM COMMITTEE

Conference Chairs

Carolyn Scala, PE, PMP (Battelle)

Kavitha Dasu, Ph.D. (Battelle)

Steering Committee

Greg Gervais, PE, SES (U.S. EPA)

Steve Gragert, CHMM (U.S. Army Corps of Engineers, Omaha District)

Ramona Iery, Ph.D. (U.S. Navy/EXWC)

Purshotam Juriasingani, PE (Tetra Tech)

Lisa Kunza, Ph.D. (South Dakota Mines)

Matthew Lahvis (Shell)

Samuel Moore (Battelle)

Vicki Pearce, MBUS (Ventia)

Ryan Thomas, Ph.D. (Parsons)

Roy Thun, MBA, PG, ENV SP (GHD)

Usha Vedagiri, Ph.D. (WSP)

Rick Wice, PG (Battelle)



Learning Lab Proposals

Learning Lab Proposals due November 13, 2023.

Generate exposure, demonstrate use, or solicit feedback for a technology, software, prototype, or tool in a 25-minute, hands-on demonstration, or user experience, in the Learning Lab, located in the Exhibit Hall. If selected, there is no additional fee to participate. Selection decisions will be based on the best overall design of the Conference program.

The link to the online **Learning Lab Proposal Form** can be found on the Conference website on the **Learning Lab** page.



Short Course Proposals

Proposals are due November 13, 2023.

Courses on topics within the general scope of the Conference will be offered on Sunday, June 2 and on the afternoon of Tuesday, June 4.

Proposals will be evaluated, and instructors will be notified of the results by December 30, 2023. If your course is selected, you will receive information about scheduling and how course registrations will be handled. Course descriptions will be posted on the website in January 2024.

The link to the online **Short Course Proposal Form** can be found on the Conference website on the **Short Courses** page.

Questions about courses should be addressed to **chlorcon@battelle.org**.

Student Participation

Students are encouraged to attend the Conference and will find participation valuable to their career development. In addition to the technical information gained by attending presentations and visiting exhibits, students can meet and talk with environmental professionals representing a wide range of work experience and employers.

Students who wish to present their work at the Conference should submit an abstract through the online system by the October 30, 2023, abstract due date.

Reduced Registration Rate. The student registration rate provides full access to technical sessions, exhibits, and meals. Full-time students are eligible; documentation of current enrollment is required.

The following special events are planned to enhance students' career development and networking opportunities:

Student Poster Competition. Students with abstracts accepted for the technical program as poster presentations will be given the opportunity to participate in a poster competition. Posters will be judged by a panel of experts and the winner will receive a \$500 prize at the closing session. Student registrants will be contacted by the Conference Office closer to the Conference.

Career KickStarter. This event is intended for students and young professionals (less than 5 years in their field). It is a program designed to foster networking and mentorship within the environmental sector.

Participants will be matched with an experienced professional in a mentorship relationship, which both mentee and mentor are committed to sustaining for 1 year.

Mentors will provide guidance and constructive criticism to students, actively engage their professional network to strengthen the student's, educate the student on the ins-and-outs of their own profession, have regular meetings to ensure the students goals are being met, and most importantly, provide encouragement.

All participation is voluntary and there is no cost to attend, but pre-registration is required to match mentors and mentees. A target of 20-30 professionals is desired for successful implementation.



Exhibits

Exhibits open for general sale October 16, 2023.

All Exhibits will be displayed in the Denver Colorado Convention Center (700 14th St., Denver, Colorado, 80202).

Organizations that provide environmental assessment, remediation, and management services and products are invited to exhibit. Exhibitors will have the opportunity to present information to a focused audience of approximately 1,500 people who acquire and use environmental management products and services at industrial and government sites around the world. Daily continental breakfasts, evening receptions, poster displays and presentations, and the Learning Lab, will be in the Exhibit Hall.

Booth Selection. Conference level and Learning Lab Sponsors receive priority booth selection and will select space on October 2, 2023. Exhibits will open for general sale Monday, October 16, 2023. Links to the Exhibit Hall floor plan, Exhibitor terms and conditions, and online booth application form will be posted on the Conference website on the **Sponsors & Exhibitors** page in early September. Booths can be reserved only online, and space will be assigned on a first-come/first-served basis, according to receipt of completed application and payment.

Booth Size	Paid by Dec. 18, 2023	Paid after Dec. 18, 2023
Gov./Non-Profit* 10'x10'	\$1,000	\$1,300
Standard Inline 10'x10'	\$3,695	\$3,995
Standard Inline 10'x20' (Endcaps not permitted)	\$6,995	\$7,295
20'x20' Island	\$12,995	\$13,295

***LIMITED QUANTITY AVAILABLE at the Govt./Non-Profit Rate (5 booth spaces; first-come, first-served)**

Only one 10'x10' booth per gov./non-profit organization may be purchased at this rate. Additional booths will be charged the standard inline 10'x10' rate and premium fees as seen below apply to applicable booth spaces as indicated on the Exhibit Hall floor plan. Booth space will not be held or reserved specifically for this rate and booth space may sell out at the regular rates prior to 5 spaces being purchased at this rate.

Premium/Corner Booths. Booths located in premium (high traffic) areas and corner booths are subject to the additional fees: (1) Corner=\$100, (2) Premium=\$200, (3) Premium + Corner=\$300.

TENTATIVE EXHIBIT HALL HOURS

- Sunday, June 2, 6:00-9:00 p.m.
- Monday, June 3, 7:00 a.m.-6:30 p.m.
- Tuesday, June 4, 7:00 a.m.-1:00 p.m.
- Wednesday, June 5, 7:00 a.m.-6:30 p.m.
- Thursday, June 6, 7:00 a.m.-1:00 p.m.

Inquiries. Please contact Susie Warner at 301-670-4990 or send an email to chlorinated2024@scgc.com.

Conference Registration

A link to online Conference registration will be available on the Conference website in early October 2023. Short course registration will be added to the website in December 2023.

The following technical program registration fees cover admission to all platform and poster sessions, exhibits, group lunches, receptions, and daily continental breakfasts and refreshment breaks.

	Paid by April 5, 2024	Paid after April 5, 2024
Industry	\$955	\$1025
Gov./Univ.*	\$730	\$830
Student**	\$440	\$490

*The university fee applies to **full-time faculty** and other teaching and research staff, including post-doctoral students. ** The student fee is reserved for **full-time students through Ph.D. candidates** whose fees will be paid by their universities or who will not be reimbursed for out-of-pocket payment. Documentation of current enrollment is required.

Booth Staff Registration. Booth staff will be registered by their exhibit managers.

Non-U.S. Registrants. For registrants outside the United States, it is recommended that you wait until your visa application has been approved prior to registering. Refunds will not be granted after the “no refund” date in the event your visa application is denied.

Registration Terms & Conditions. The full list of registration terms and conditions can be found on the Conference website on the **Registration** page. Registration terms and conditions are subject to change without notice and are applicable to all levels of registration, including booth staff and Sponsor/Exhibitor waived and discounted registrants. No one under 18 years of age will be admitted to any Conference event unless registered as a student, valid student ID required at check-in.

Presenter Registration Requirement. Financial assistance is not available to support registration or other costs of attending the Conference. All presenting authors (platform and poster), session chairs, and panel participants are expected to register and pay the standard technical-program registration fees. Registration fees are the major source of funding for the Conference and a significant percentage of registrants will make presentations or chair sessions.

Payment. Payment is required to confirm registration and registration discounts apply only to payments received by the specified dates. Checks will be accepted for registrations made through April 5, 2024. Beginning April 6, 2024, payment can be made only by major credit card. Purchase orders will not be accepted at any time. Fees are not transferable to other Battelle Conferences. Conference information meant for attendees only (e.g., links to mobile apps, abstracts, and registration lists) will only be sent to individuals who have paid in full.

Cancellations & Refunds. Registration cancellations and refund requests must be received in writing on or before the “cancellation requested date” below to qualify. Refunds will be processed to the credit card used for payment. By registering for the Conference, you agree to the following registration cancellation refund policy: 1) cancellation requested on or before February 9, 2024, will receive 75% of the registration fee; (2) cancellation requested February 10, 2024, through April 5, 2024, will receive 50% of the registration fee; (3) after April 5, 2024, no refunds. A \$150 service fee applies to each cancelled registration.

Closing
Reception
Sponsors



eaglesynergistic.com



Conference Venue and Hotel

Located one block from the 16th Street Mall and within walking distance to Denver Center for the Performing Arts, the Hyatt Regency Denver at the Colorado Convention Center offers a stylish stay in downtown Denver with access to the 27th-floor Peaks Lounge, the highest-rising lounge in the city with spectacular Rocky Mountain views.

The Hyatt Regency Denver at Colorado Convention Center is just steps away from the Convention Center. Subject to availability of rooms at the time reservations are made, the Conference rate may be used for check in as early as Friday, May 31, 2024, and check-out as late as Friday, June 7, 2024. The link for online reservations will be added to the Conference website in October, 2023. Be sure to obtain a registration confirmation number and to inquire about the hotel's cancellation and early check-out policies.

Hyatt Regency Denver at Colorado Convention Center	
Address	650 15th Street, Denver, Colorado 80202
Group Rate	\$259/night + tax (single)
	<i>A percentage of rooms will be available at the prevailing U.S. Government per diem rate (plus tax) for U.S. federal, state, and local government employees. Government ID will be required at check-in.</i>
Group Rate Expiration	May 19, 2024 , unless the block sells out before that date
Phone Reservations	844-209-2290
	<i>If you are making a reservation by phone, mention that you are attending the “Battelle 13th International Conference on Remediation of Chlorinated and Recalcitrant Compounds” to qualify for the group rate.</i>



The Chlorinated Conference does not have group rate agreements with any properties other than the Hyatt Regency Denver nor have we partnered with any travel agency or third-party for travel/hotel discounts. If you receive a call or an email offering assistance in making/changing hotel reservations, we advise caution. The Chlorinated Conference has no agreement with any organization to contact participants and offer reservation assistance, nor have we provided contact information to anyone for this purpose.



Denver and Surroundings

300 days of sunshine, a thriving cultural scene, diverse neighborhoods, and natural beauty combine for the world's most spectacular playground. A young, active city at the base of the Colorado Rocky Mountains, Denver's stunning architecture, award-winning dining and unparalleled views are all here, year-round.

Denver is near the mountains, not in them. The Mile High City is located on high rolling plains, 12 miles east of the "foothills," a series of gentle mountains that climb to 11,000 feet. Just beyond is the "Front Range of the Rocky Mountains," a series of formidable snowcapped peaks that rise to 14,000 feet. Denver might not be in the mountains, but the mountains still dominate the city. The picturesque mountain panorama from Denver is 140 miles long. There are 200 visible named peaks including 32 that soar to 13,000 feet and above.

www.denver.org