

2023 Sediments Conference

January 9-12, 2023 | Austin, Texas



Closing Panel Wrap-Up Discussion

Moderators: Anne Fitzpatrick | Peggy Derrick

TRACK LEADERS

- A: Charlie Menzie, Exponent
- B: Mike Ciarlo, EA
- C: Steve Jawetz, Beveridge & Diamond
- D: Scott Cieniawski, EPA GLNPO
- E: Steve Garbaciak, Foth

EMERGING PROFESSIONALS

- A: Kristen Kern, USACE-Seattle
- B: Wardah Azhar, CDM Smith
- C: Hunter Young, EPA Region 10
- D: Laura Bateman, Anchor QEA
- E: Jason Raimondi, Geosyntec

Closing Panel Wrap-Up Discussion

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What did you hear or learn that will help you do your job better and is important enough to share with your colleagues?

What information were you hoping to hear or learn more about that wasn't addressed enough or at all?

What topic(s) do you think we should be preparing to discuss 2 years from now to help our projects and practice move forward?

TRACK A—Characterization, Assessment, and Monitoring

Charles Menzie | Kristen Kerns

- What's working?
 - Advances in passive sampler technology – application, cost savings, validation, standardization, regulatory acceptance
 - Use of rare PCB congeners for performance reference compounds
 - Use of passive samplers for methyl mercury
 - Modeling simplifications/streamlining for invertebrate toxicity and food web modeling
 - Better integration of sampling and modeling tools
 - Sample design and statistical analysis
 - More comprehensive pre-planning for sample collection
 - Understanding physical context of the environment

TRACK A—Characterization, Assessment, and Monitoring

Charles Menzie | Kristen Kerns

- What's working (continued)?
 - Advances in chemical forensics
 - PFAS sediment analysis
 - Sediment water interface and flux
- What is needed or needs to be fixed?
 - New characterization approaches for highly variable contaminant concentrations
 - Encourage international attendance
- What's next?
 - Innovative analysis of climate change impacts on sediment remedies
 - Passive sampling for PFAS
 - Microplastics

TRACK B—Environmental Processes and Modeling

Mike Ciarlo | Wardah Azhar

- PFAS Bioavailability, Bioaccumulation, and Risk Assessment
 - Remediation depends on how we handle the many precursors and breakdowns
 - ***Need more PFAS case studies in sediment***
- Ebullition
 - Advancements in methods and models, especially flow visualization
 - ***Case studies and guides to the new ASTM standards***
 - ***More examples of data analytics, video analysis, drone technology, etc.***
- Groundwater/Surface Water Interactions
 - Combine new technologies with historic knowledge
 - *More regulatory approaches to estimation and modeling*
 - **More remediation approaches and adaptive management successes**
- Contaminant Bioavailability and Uptake
 - BSAFs, *BSAFs*, ***BSAFs***
 - ***Translating from site-specific BSAFs to broader use***

TRACK B—Environmental Processes and Modeling

Mike Ciarlo | Wardah Azhar

- Geospatial Data Evaluation/Visualization + Advanced Data Analysis and Decision Tools
 - Integrated data management and visualization is well advanced – off the shelf software
 - Combining machine learning with conventional statistics
 - *More examples of visualization/analytics in documentation and stakeholder communication*
 - **How to incorporate climate change into geospatial representations**
 - **Hands on learning labs**
- Contaminant Fate and Transport
 - Incorporating climate change forecasting
 - Continuous challenge and refinement of the CSM
 - Novel bathymetry methods
 - ***Better representation of mobile pool and nepheloid layer***
- Hydrodynamics and Sediment Transport
 - ***Capturing uncertainty/error and applying it in planning and implementation***

TRACK C—Management Approaches and Policy

Steve Jawetz | Hunter Young

- Technologies for understanding NAPL and MGP sites continuing to improve, as are remedial options and construction methods
- Beneficial reuse of sediment is getting increased attention and may help manage costs and promote restoration in some circumstances
- Management of sediment behind dams is getting more attention
- Ohmylord can't the country follow the Great Lakes Restoration Initiative model?
- Techniques are available to improve stakeholder/community engagement
- Adaptive management has moved from novelty to accepted concept, though implementation details will require a lot of site-specific work and flexibility
- Overall: ROBUST DATA (AND CSMs) NECESSARY BUT NOT SUFFICIENT

TRACK C—Management Approaches and Policy

Steve Jawetz | Hunter Young

- “Concrete” examples of beneficial reuse (case studies)
- Quantitative assessments of effectiveness based on performance/LT monitoring
- More combined CWA and CERCLA work to manage and consider ongoing sources (background) for realistic remediation goals
- More transparency on current CSTAG/NRRRB approaches to consistency vs. flexibility
- Better approaches to allocation of massive costs (incl. schedule considerations); alternative funding sources
- Promote wider understanding of adaptive management, sustainability
- Ongoing learning on how to COPE with challenging EJ issues: OBTAINING STAKEHOLDER BUY-IN

TRACK D—Remediation and Restoration Planning

Scott Cieniawski | Laura Bateman

- What's working?
 - Understanding Data Needs and How to Utilize Data in Decision Making and Design
 - Developing New Tools and Techniques to Understand Site and Implement Projects
 - More and more case studies available
 - Includes use of in situ amendments
 - Starting to incorporate sustainability in decision making
 - Better tools and approaches for long-term monitoring
 - Incorporation long-term data needs early in the process

TRACK D—Remediation and Restoration Planning

Scott Cieniawski | Laura Bateman

- What is needed or needs to be fixed?
 - Nothing
 - Metals/PFAS
 - What works and what doesn't during collaboration
 - Case studies and data needs to get to final site closure
- What's next?
 - PFAS
 - Sustainability/Environmental Justice
 - General Approaches vs. Site Specific Needs
 - On-Site Disposal Options
 - Remedy Validation/Long-term Data
 - Balance between conservatism, risk, and costs

TRACK E—Remedy and Restoration Implementation

Steve Garbaciak | Jason Raimondi

- What's working?
 - Megsites have been remediated – effectiveness data coming in
 - Non-traditional methods have become the new normal
 - Stakeholder involvement can often accelerate the design and construction process
 - Flexible and transparent procurement helps facilitate contractor selection/remedy success
- What is needed or needs to be fixed?
 - There is a significant need for knowledge transfer to the next generation
 - Equipment and equipment capabilities continue to be misunderstood (e.g., hydraulic vs. mechanical dredging, dredge GPS systems, etc.)
 - Need for continued education on common, recurring lessons learned from past projects (e.g., surveying methods, data needs, procurement methods, etc.)

TRACK E—Remedy and Restoration Implementation

Steve Garbaciak | Jason Raimondi

- What's next?
 - Equipment types and equipment capabilities/limitations
 - Risk and cost drivers of sediment projects
 - Bioremediation details
 - Capping vs. dredging
 - Debris management
 - Long-term remedy effectiveness – agency perspective
 - Societal benefits and improvements as a result of sediment remediation
 - Transparency – challenging interactions – frank discussion

BATTELLE

It can be done