

RISK^eLearning

Bioavailability

Summary Report

July 2008



NIEHS
National Institute of
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Executive Summary

The National Institute of Environmental Health Sciences (NIEHS) Superfund Basic Research Program (SBRP) sponsors an interactive web-based lecture series “Risk-e-Learning” as part of an ongoing collaboration with the U.S. Environmental Protection Agency (EPA). In 2008, the Risk-e-Learning series was “**Bioavailability - Metals, Organics, and Use at Hazardous Waste Sites.**” This series focused on the science and policy issues of incorporating bioavailability into risk and exposure assessments. Largely drawing from the successful SBRP Bioavailability Workshop: “Assessing Bioavailability as a Determinant of Pollutant Exposure (<http://www.uncsbrp.org/conference/index.cfm>)” held in Tampa, FL (February 2008), the web seminar series featured SBRP researchers, EPA regulators, and National Priorities List (NPL) site engineers. The three-part series explored metals, organics and case studies where the consideration of bioavailability has significantly affected decisions about site management.

The three bioavailability seminars were attended by 931 participants from 48 states/territories and 11 countries representing academia, industry, government, private site owners, policy, and regulatory agencies. The pie chart below shows participant affiliations for the seminar participants. For the complete breakdown of participation by organization type for each session please refer to the appendix.

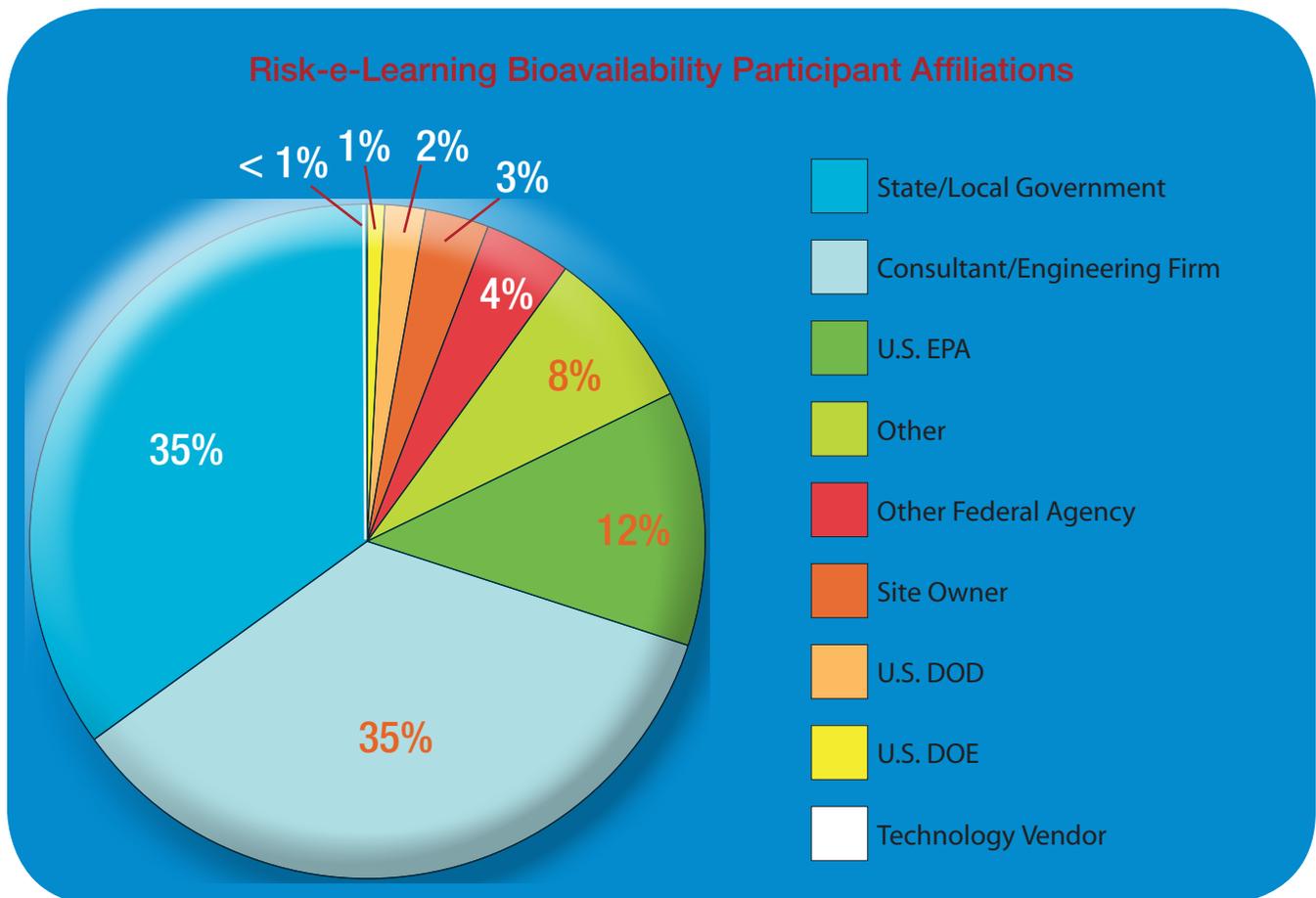


Table 1: Summary Statistics for the Number of Participants and the Number of Countries and States Represented

	May 28 th , 2008	June 11 th , 2008	June 18 th , 2008	Total	Average
No. of participants	424	280	227	931	310
No. of states represented	45	44	41	45	43
Countries represented	9	7	4	11	7

The seminar participants were well distributed across the United States with every state (including the District of Columbia) except Hawaii, North Dakota and Vermont being represented. New Jersey participants made up about 7.5% of the participants, Texas made up about 7% of the participants, Massachusetts and California each made up about 6% of the participants, and New York made up over 5% of the participants. See the appendix for a complete list of participation by state.

A large majority of participants were in the U.S. (93%) and Canada (5%), however participants attended from 9 other countries. In addition to the U.S. and Canada, participants attended from Australia, Brazil, Germany, Hungary, India, Italy, Mexico, Spain, and the United Kingdom.

After each session participants were given the opportunity to comment on the quality of the audio visual components as well as the subject matter and presentation delivery. The participants' comments are presented in the appendix.

The Bioavailability seminar series was organized by:

NIEHS: Kathy Ahlmark, Beth Anderson, Heather Henry, Claudia Thompson

MDB, Inc.: Maureen Avakian, Justin Crane, Melissa Fabiano, Larry Reed

The University of North Carolina at Chapel Hill SBRP: Fred Pfaender

The following sections give more detailed information about each session, including the presenters and moderators, a presentation overview, and the number of participants.

Bioavailability – Metals

<http://www.clu-in.org/conf/tio/bioavailability1/>

Seminar Information

Date: May 28th, 2008, 2:00 PM – 4:00 PM, EST

Moderators: Aaron Yeow (yeow.aaron@epa.gov), Environmental Health Scientist, Office of Superfund Remediation and Technology Innovation, USEPA; Dr. Claudia L. Thompson (thomps14@niehs.nih.gov), Acting Director of SBRP at NIEHS.

Presenters: Dr. Dominic Di Toro (dditoro@ce.udel.edu), Professor of Civil and Environmental Engineering, University of Delaware and Dr. Nicholas Basta (basta.4@osu.edu), Professor, Soil and Environmental Chemistry, Ohio State University.

Presentation overview: This, the first of three sessions, will feature Dr. Dominic Di Toro, Professor of Civil and Environmental Engineering, University of Delaware and Dr. Nicholas Basta, Professor, Soil and Environmental Chemistry, Ohio State University. Understanding and quantifying metal bioavailability is of central importance in performing scientifically sound risk assessments. Dr. Di Toro will review available models - the Free Ion Activity Model, the Biotic Ligand Model and Equilibrium Partitioning - and supporting data for water column, sediments and soils and will present example applications to human health in his presentation titled “Environmental Control of Metal Bioavailability”.

Dominic DiToro was fantastic. He did an excellent job of explaining the graphs and I greatly appreciated his including the references at the bottom of each screen, so that I could get more information later if needed.

Submitted by Margaret Bartee

Incidental soil ingestion is an important exposure pathway for assessing public health risks associated with contaminated soils. The bioavailability of Pb (lead), As (arsenic), and possibly other contaminants in soils can be determined by conducting dosing trials using acceptable surrogate animal models. To overcome the difficulty and expense associated with *in vivo* trials, *in vitro* gastrointestinal (IVG) methods, that simulate human gastrointestinal conditions, have been developed. The science of contaminant bioaccessibility has matured and several IVG methods have been reported. Dr. Basta will present data gaps, uncertainties and research needed to apply IVG methods to contaminated sites in his presentation titled “Assessing Contaminant Human (Bio)availability in Soil with *In Vitro* Gastrointestinal: Uncertainties, Data Gaps, and Research Needs”.

Number of participants: 424

Bioavailability – Organic Compounds: Methods and Case Studies

<http://www.clu-in.org/conf/tio/bioavailability2/>

Seminar Information

Date: June 11th, 2008, 2:00 PM – 4:00 PM, EST

Moderators: Dr. Karl Gustavson (karl.e.gustavson@usace.army.mil), Contaminated Sediment Liaison to US EPA, US Army Engineer Research and Development Center

Presenters: Dr. Edward Neuhauser (edward.neuhauser@us.ngrid.com), Principal Environmental Engineer, National Grid and Dr. Danny Reible (reible@mail.utexas.edu), Bettie Margaret Smith Chair of Environmental Health Engineering at the University of Texas.

Presentation overview: This, the second of the three sessions, will feature Dr. Edward Neuhauser, Principal Environmental Engineer, National Grid, and Dr. Danny Reible, the Bettie Margaret Smith Chair of Environmental Health Engineering at the University of Texas.

Dr. Neuhauser's presentation is titled: True Measurement of PAH Bioavailability in Sediments - Traditional regulatory guidance for screening PAH contaminated sediments have used the total EPA 16 parent PAH's and have correlated these values with summary values from a wide variety of studies. This approach has given very inconsistent results when comparing the EPA total 16 PAH's with actual laboratory toxicology testing. This study has developed a PAH measurement method, the Solid-Phase Microextraction (SPME) method, that actually measures the true bioavailability of PAH's in sediments. The SPME method does not measure the total amount of PAH's present in a sediment sample, but rather only that fraction of PAH's in sediments that are actually present in sediment pore water and are available to benthic organisms. This research has shown that the actual PAH toxicity is concentrated in the alkylated low molecular weight PAH's and that 5- and 6-ring PAH's actually contribute very little to sediment toxicity.

Yes, the material seems very relevant to my work and it was easy to participate. Plan to participate in June 18th seminar

Submitted by Rene Fuentes

The definition of exposure and risk to contaminants in sediments depends upon access to those contaminants, the extent to which accessible contaminants are bioavailable and the extent to which contaminants accumulate in organisms of interest. Dr. Reible's presentation will focus on efforts to understand and quantify these processes. Recent research associating interstitial water concentrations of PAHs and PCBs to bioaccumulation in benthic organisms will be reviewed. This research has provided an increasingly strong basis for the use of interstitial water concentrations as an indicator of bioavailability, bioaccumulation and ultimately exposure and risk of these contaminants to the benthic community. Building on this basis, field deployable solid phase microextraction devices were developed and used to evaluate bioavailability and mobility of organic contaminants in sediments. The use of these devices to assess, *in situ*, mechanisms and rates of chemical transport and the effectiveness of permeable containment or sorptive barriers (sediment caps) will be summarized.

Number of participants: 280

Bioavailability - Use of Bioavailability Information at Hazardous Waste Sites

<http://www.clu-in.org/conf/tio/bioavailability3/>

Seminar Information

Date: June 18th, 2008, 2:00 PM – 4:00 PM, EST

Moderators: Dr. Fred Pfaender (gregdad@email.unc.edu), Professor of Environmental Microbiology, Environmental Sciences and Engineering, and Public Health, University of North Carolina at Chapel Hill

Presenters: Mr. Mike Beringer (beringer.michael@epa.gov), U.S. EPA Region VII toxicologist and Dr. Mark Maddaloni (maddaloni.mark@epa.gov), U.S. EPA Region II toxicologist.

Presentation overview: The Superfund Basic Research Program (SBRP), in collaboration with the Environmental Protection Agency (EPA) Technology Innovation Program, presents the 2008 edition of Risk e Learning: “Bioavailability - Metals, Organics, and Use at Hazardous Waste Sites”. This series of online seminars focuses on the science and policy issues of incorporating bioavailability into risk and exposure assessments. Largely drawing from the successful SBRP Bioavailability Workshop: “Assessing Bioavailability as a Determinant of Pollutant Exposure” held in Tampa, FL (February 2008), the web seminar series features SBRP-funded and other academic researchers and EPA senior staff. The first seminar “Bioavailability of Metals” was May 28th, the second seminar “Bioavailability of Organic Compounds: Methods and Case Studies” was June 11th, and the third seminar “Use of Bioavailability Information at hazardous Waste Sites” is June 18th.

This, the third of the three sessions, will feature Mr. Mike Beringer, U.S. EPA Region VII toxicologist, and Dr. Mark Maddaloni, U.S. EPA Region II toxicologist.

Site-specific bioavailability is an important consideration in determining potential threats to human health that are posed by metals-contaminated soils at waste sites. It is important to consider bioavailability because metals may be absorbed to a lesser or greater extent following ingestion of contaminated soils as compared to the fraction absorbed in the studies used to establish toxicity values, such as a reference dose or a cancer slope factor. U.S. EPA’s Office of Superfund Remediation and Technology Innovation (OSRTI) has led an effort to develop guidance on evaluating and incorporating bioavailability adjustments into human health risk assessments. The guidance outlines a decision framework for deciding when to collect and incorporate site-specific bioavailability information; recommends a process for documenting the data collection, analysis, and site-specific implementation of a validated method; as well as provides recommended method validation and regulatory acceptance criteria for evaluating alternative methodologies. OSRTI has used these criteria to evaluate two separate methodologies for predicting the relative bioavailability of lead in soil and soil-like materials. OSRTI has determined that both an *in vivo* swine bioavailability bioassay and an *in vitro* bioaccessibility assay have sufficiently satisfied these criteria. Thus, they are considered regulatory methodologies appropriate for determining the relative bioavailability of lead for quantitative use in site-specific risk assessments. Mr. Beringer’s presentation will summarize the bioavailability guidance document and the basis for OSRTI’s decision regarding the two methodologies for predicting lead relative bioavailability.

Very informative; I will definitely be participating in the future.

Submitted by Austin Cooley

EPA's bioavailability guidance provides a framework for using bioavailability/bioaccessibility data to inform and refine site specific risk assessments. In the case of lead, which benefits from well-characterized studies on the absorption of this metal when bound to soil, the guidance is highly prescriptive. For many other metals that have limited characterization of their absorption profiles, the guidance is more open to interpretation. The bioavailability guidance will be "test driven" so to speak in a situation where the roadmap is less detailed. In this presentation Dr. Maddaloni will go over a case study involving a RCRA Corrective Action site with arsenic-contaminated soil.

Number of participants: 227

Seminar Statistics

The following statistics were calculated from attendance numbers provided by EPA's CLU-IN and MDB, Inc. as a tally of confirmed registrants who checked in to the series via internet and/or confirmed participation via follow-up phone calls or emails. Approximately 32% of registrants did not log in via the internet, and did not respond to emails or phone calls to verify attendance; therefore these numbers represent a conservative estimate of audience participation. Duplicate registrations were accounted for.

Figure 1: Participant Affiliations

Consultant/Engineering Firm	147	103	75	325	34.91
Other	26	31	19	76	8.16
Other Federal Agency	9	16	10	35	3.76
Site Owner	10	9	7	26	2.80
State/Local Government	169	84	77	330	35.45
U.S. DOD	9	6	4	19	2.04
U.S. DOE	8	0	0	8	0.86
U.S. EPA	46	30	35	111	11.92
Technology Vendor	0	1	0	1	0.11

Figure 2: Participant Countries of Origin

Australia	1	0	1	2	0.21
Brazil	3	0	0	3	0.32
Canada	12	24	11	47	5.05
Germany	2	1	1	4	0.43
Hungary	1	1	0	2	0.21
India	0	1	0	1	0.12
Italy	4	0	0	4	0.43
Mexico	1	0	0	1	0.12
Spain	0	1	0	1	0.12
United Kingdom	1	1	0	2	0.21
United States	399	251	214	864	92.80

Figure 3: Participant State of Origin

AK	15	3	4	2.36
AL	1	1	1	0.32
AR	1	2	1	0.43
AZ	8	6	2	1.71
CA	36	11	11	
CO	10	2	5	1.83
CT	1	2	2	0.54
DC	16	5	6	2.90
DE	16	3	5	2.58
FL	6	3	1	1.07
GA	12	10	3	2.69
IA	1	0	1	0.43
ID	10	2	0	1.29
IL	6	11	11	3.01
IN	0	1	1	0.21
KS	2	1	2	0.54
KY	8	3	5	1.72
LA	4	2	3	0.97
MA	24	14	18	
MD	9	1	0	1.07
ME	3	2	7	1.29
MI	7	14	7	3.01
MN	4	3	1	0.86
MO	1	4	5	1.07
MT	0	1	0	0.11
NC	13	5	9	2.90
NE	2	0	0	0.21
NH	4	1	0	0.54
NJ	25	30	14	
NM	1	1	1	0.32
NV	2	2	1	0.54
NY	18	21	11	
OH	13	9	14	3.87
OK	2	1	1	0.43
OR	18	5	4	2.90
PA	11	10	11	3.44
SC	19	1	2	2.36
TN	1	1	0	0.21
TX	32	16	17	
UT	2	1	1	0.43
VA	8	9	10	2.90
WA	14	10	6	3.22
WI	5	8	5	1.93
WV	1	1	1	0.32
WY	0	3	0	0.32
Blank	32	38	17	

Seminar Feedback Results

Delivery Media Question

I participated as a streaming audio simulcast participant.

	Seminar 1	Seminar 2	Seminar 3	Average
No	50.0%	35.7%	37.5%	41.1%
Yes	50.0%	64.3%	62.5%	58.9%

Instructor Comments

I had trouble hearing the instructor.

	Seminar 1	Seminar 2	Seminar 3	Average
Disagree	92.1%	71.4%	50.0%	71.2%
Neutral	5.3%	21.4%	31.3%	19.3%
Agree	2.6%	7.1%	18.8%	9.5%

The instructors are knowledgeable of the subject matter.

	Seminar 1	Seminar 2	Seminar 3	Average
Disagree	2.6%	3.6%	0%	2.1%
Neutral	5.3%	3.6%	12.5%	7.1%
Agree	92.1%	92.9%	87.5%	91.8%

I could easily follow the instructor's presentation and slides.

	Seminar 1	Seminar 2	Seminar 3	Average
Disagree	2.6%	3.6%	12.5%	6.2%
Neutral	15.8%	14.3%	31.3%	20.5%
Agree	81.6%	82.1%	56.3%	73.3%

Ample time was allowed for Q&A.

	Seminar 1	Seminar 2	Seminar 3	Average
Disagree	0.0%	3.6%	0.0%	1.2%
Neutral	13.2%	10.7%	0.0%	8.0%
Agree	86.8%	85.7%	100.0%	90.8%

Presentation Content Questions

I learned a great deal from this presentation.

	Seminar 1	Seminar 2	Seminar 3	Average
Disagree	0.0%	3.6%	0.0%	1.2%
Neutral	23.7%	17.9%	37.5%	26.4%
Agree	76.3%	78.6%	62.5%	72.4%

The content was too simplified.

	Seminar 1	Seminar 2	Seminar 3	Average
Disagree	65.8%	64.3%	68.8%	66.3%
Neutral	31.6%	35.7%	18.8%	28.7%
Agree	2.6%	0.0%	12.5%	5.0%

The presentation was too long.

	Seminar 1	Seminar 2	Seminar 3	Average
Disagree	55.3%	75.0%	56.3%	62.2%
Neutral	42.1%	25.0%	31.3%	32.8%
Agree	2.6%	0.0%	12.5%	5.0%

Will you recommend this seminar to other environmental professionals?

	Seminar 1	Seminar 2	Seminar 3	Average
Yes	5.3%	3.6%	12.5%	7.1%
No	94.7%	96.4%	87.5%	92.9%

Seminar Participant Comments

Seminar 1 Comments

Question 1: What additional subject matter or changes should be made to this seminar?

These two seminars were introductory, and general. And, I am assuming that future seminars will deal with more specific topics. That is my suggestion, get into better delineated, specific topics.

Submitted by [Ignacio Rivera-Duarte](#) at 3:41 PM EDT on May 28, 2008

None. This was a very informative seminar.

Submitted by [Bob Fares](#) at 3:41 PM EDT on May 28, 2008

Yes - I am looking forward to the next two Webinars on bioavailability.

Submitted by [Austin Cooley](#) at 4:01 PM EDT on May 28, 2008

material presented was great. Would be better to have a human health biologist address in vivo biological models. Also not discussed is the biomonitoring of effects in human populations.

Submitted by [Sophia Serda](#) at 4:02 PM EDT on May 28, 2008

Binding metals, specifically copper in an activated sludge plant to protect the bugs and then eventually the bound copper can be released via the effluent outfall.

Submitted by at 4:03 PM EDT on May 28, 2008

I was personally more interested in the aquatic toxicological segment and would have preferred a bit more on that rather than mixing the two topics. Of course, I had the option to stop listening.

Submitted by [Al Polonsky](#) at 4:04 PM EDT on May 28, 2008

Some additional speaker notes would help, as significant information was shared verbally.

Submitted by [David Comen](#) at 4:07 PM EDT on May 28, 2008

Application to inorganics and phytoremediation

Submitted by [Niles Keeran](#) at 6:47 PM EDT on May 29, 2008

Question 2: Did this seminar meet your needs? Are you likely to participate in the future? Why or why not?

sort of....slides were not clearly helpful i.e. BLM, was not sure what it stands for....acronyms need to be defined.

Submitted by [Jeanelle Martinez](#) at 2:41 PM EDT on May 28, 2008

Dominic DiToro was fantastic. He did an excellent job of explaining the graphs (even over the web!), and I greatly appreciated his including the references at the bottom of each screen, so that I could get more information later if needed.

Submitted by [Margaret Bartee](#) at 2:55 PM EDT on May 28, 2008

Yes, it was what I was expecting, and I would like to participate in future seminars.

Submitted by [Ignacio Rivera-Duarte](#) at 3:41 PM EDT on May 28, 2008

Yes to both questions.

Submitted by [Bob Fares](#) at 3:41 PM EDT on May 28, 2008

I was interested in the ecological (non-human/ wild species) toxicity component and obtained a clearer understanding on what factors influence metal bioavailability in water, sediment and soils.

Submitted by [Daniel Mazur](#) at 3:45 PM EDT on May 28, 2008

Yes to both. I regularly try to take part in seminars that are work-relevant. Every program that I have taken part in has provided worthwhile knowledge to me.

Submitted by [Mike Cholko](#) at 3:58 PM EDT on May 28, 2008

Yes!....Great forum!!

Submitted by [Kofi Asante-Duah](#) at 3:58 PM EDT on May 28, 2008

Absolutely - good presentations by both presenters.

Submitted by [Austin Cooley](#) at 4:01 PM EDT on May 28, 2008

yes. but 2 hours is long time

Submitted by [Sophia Serda](#) at 4:02 PM EDT on May 28, 2008

My specialty is organic contaminants...so I am looking forward to the next seminar June 11th.

Submitted by [Ursula McKnight](#) at 4:02 PM EDT on May 28, 2008

Yes, still happy with the opportunity and will look for future broadcasts.

Submitted by [Al Polonsky](#) at 4:04 PM EDT on May 28, 2008

Yes. I have, and will continue, to attend various ITRC seminars.

Submitted by [David Comen](#) at 4:07 PM EDT on May 28, 2008

I hope the Bioavailability Series be repeated this year as some flexibility in the dates will benefit interested parties.

Submitted by [Sandra Toquica](#) at 4:09 PM EDT on May 28, 2008

Yes, I will likely participate in future seminars.

Submitted by [Jim Smith](#) at 4:14 PM EDT on May 28, 2008

This seminar met my needs. I am very interested in the next two sessions.

Submitted by [Ed Pfau](#) at 4:15 PM EDT on May 28, 2008

Yes - the seminar provided a good framework for the topic.

Submitted by [Steve Glaser](#) at 4:32 PM EDT on May 28, 2008

These online seminars are an excellent way of keeping current and/or acquiring new information in a cost effective manner. I would anticipate increased participation in light of rising fuel costs and higher travel expenses.

Submitted by [Hal Williams](#) at 4:39 PM EDT on May 28, 2008

The info was very useful to us as we examine issues regarding bioavailability of lead from artificial turf. We look forward to the rest of the series.

Submitted by [Sharon Kubiak](#) at 11:05 AM EDT on May 29, 2008

Yes. It explained the theory, techniques, and limitations of bioavailability studies.

Submitted by [Michael McMullen](#) at 12:17 PM EDT on May 29, 2008

Question 3: Additional comments or technical difficulties encountered?

I think it would be helpful if the points that were made were captured in writing, ie notes . Pictures and graphs are nice, but imp. points should be stressed.

Submitted by [Jeanelle Martinez](#) at 2:41 PM EDT on May 28, 2008

No technical difficulties encountered. I look forward to the next two sessions.

Submitted by [Bob Fares](#) at 3:41 PM EDT on May 28, 2008

There apparently had been a last minute change in call-in phone numbers but not sure where the email went that would have alerted me and others to that change.

Submitted by [Mike Cholko](#) at 3:58 PM EDT on May 28, 2008

Overall - great forum! Thanks!!

Submitted by [Kofi Asante-Duah](#) at 3:58 PM EDT on May 28, 2008

Justin did a great job introducing the seminar and address technical issues

Submitted by [Sophia Serda](#) at 4:02 PM EDT on May 28, 2008

thanks for providing this.

Submitted by [Al Polonsky](#) at 4:04 PM EDT on May 28, 2008

I am a novice in this field. You shed light inside of Bioavailability. Thankful to you for sharing your insights and to NIEHS for offering the course.

Submitted by [Maung Tun](#) at 4:12 PM EDT on May 28, 2008

I had some problems with the live audio simulcast during the first ten minutes. After that, the audio feed was continuous. Later in the simulcast, I was not able to hear several of the questioners from the phone-in line, although I was able to hear the speakers and moderators almost all of the time.

Submitted by [Ed Pfau](#) at 4:15 PM EDT on May 28, 2008

I participated via phone. Although I pressed *1 many times and did not have my phone on mute, I was never able to be heard. There didn't seem to be anything I could do in order to ask my questions. It would have been nice to have an alternative method for sending my question, such as sending it via online.

Submitted by [Roseanne Lorenzana](#) at 4:16 PM EDT on May 28, 2008

Jeanene Hanley at ADEQ and her cute baby are next to me and I forgot that I had my own line to this seminar...as well as mixed up dates for another seminar..

Submitted by [Niles Keeran](#) at 6:47 PM EDT on May 29, 2008

Seminar 2 Comments

Question 1: What additional subject matter or changes should be made to this seminar?

Nothing comes to mind at this time. If anything there should be more discussion of the difference in concentration likely to be found in "porewater" and what is likely to occur in a more dynamic transition zone between ground water and surface water. The dynamic aspect may make some of the conclusions in this seminar considerably different. It was discussed, but should be described in the slides.

Submitted by [Rene Fuentes](#) at 3:31 PM EDT on Jun 11, 2008

I have no recommendations for changes.

Submitted by [Bob Fares](#) at 3:32 PM EDT on Jun 11, 2008

Maybe more specific discussion on how the information can inform site characterization and decision-making.

Submitted by [Mary Logan](#) at 3:45 PM EDT on Jun 11, 2008

A discussion of the actual procedures used would be beneficial to an understanding of how applicable the methodologies presented are to future or on-going work.

Submitted by [Jeremy Bishop](#) at 3:59 PM EDT on Jun 11, 2008

A bit more on what the SPME device looks like, how to install, overall capabilities with respect to compounds targeted, other sampling applications SPME has been used in, etc.

Submitted by [Jay Hodny](#) at 4:00 PM EDT on Jun 11, 2008

I thought the material covered was perfect for the time available. Also, adding much more material in a single session might be overwhelming.

Submitted by [Eric Schwarz](#) at 4:07 PM EDT on Jun 11, 2008

I would have liked an overview of organic bioavailability in soils and sediments in the beginning. Also, I would have liked more information on organic bioavailability in soil. Not clear to me how bioavailability in porewater is directly applicable to soils as one of the instructors mentioned.

Submitted by [Louise White](#) at 4:10 PM EDT on Jun 11, 2008

Question 2: Did this seminar meet your needs? Are you likely to participate in the future? Why or why not?

Yes. I had taken part in several of these seminars and will continue to do so in the future.

Submitted by [mike cholko](#) at 3:21 PM EDT on Jun 11, 2008

Yes. I need to review the supporting publications to give a better answer (there should be supporting presentations available for all future presentations)

Submitted by [Eugene Peck](#) at 3:24 PM EDT on Jun 11, 2008

No - Basics not explained; lots of technical data presented with no relationship to real world; too beaurocratic.

Submitted by [William Chlebowy](#) at 3:25 PM EDT on Jun 11, 2008

Yes, the material seems very relevant to my work and it was easy to participate. Plan to participate in June 18th seminar

Submitted by [Rene Fuentes](#) at 3:31 PM EDT on Jun 11, 2008

Yes it did.

Submitted by [Bob Fares](#) at 3:32 PM EDT on Jun 11, 2008

Yes, Good way to transfer information

Submitted by [Barry Mower](#) at 3:35 PM EDT on Jun 11, 2008

Yes. Yes. Overall - great forum!

Submitted by [Kofi Asante-Duah](#) at 3:44 PM EDT on Jun 11, 2008

Yes - the seminar is relevant to my current projects where I have PAH contaminated sediments to investigate and remediate. I would be eager to participate in other seminars on this topic.

Submitted by [Mary Logan](#) at 3:45 PM EDT on Jun 11, 2008

Yes, I would participate in future presentations of follow-up research information. This research provides information about new USEPA procedures that will likely change the way sediments are evaluated for ecological risk.

Submitted by [Elsie Millano](#) at 3:45 PM EDT on Jun 11, 2008

Yes, it did. I will participate in this seminar in the future because it will give me a nice summary of work I need to understand.

Submitted by [Hongkyu Yoon](#) at 3:58 PM EDT on Jun 11, 2008

This seminar directly related to ongoing work that I am doing and was very useful. I will plan on attending future seminars when they are applicable.

Submitted by [Jeremy Bishop](#) at 3:59 PM EDT on Jun 11, 2008

This seminar is more related to the contaminant sites risk assessment, whereas I am working on human risk assessment via use of chemicals. Therefore the approach presented in this seminar is slight off my current focus. However, I would like to recommend it to the contaminant site assessment group within our department as it is a good seminar.

Submitted by [Hui Shen](#) at 3:59 PM EDT on Jun 11, 2008

Yes, and yes.

Submitted by [Jay Hodny](#) at 4:00 PM EDT on Jun 11, 2008

Yes and yes. This was the best seminar I've participated in, primarily because it had the perfect balance of basic science and practical application.

Submitted by [Eric Schwarz](#) at 4:07 PM EDT on Jun 11, 2008

Yes. I have participated in others.

Submitted by [Louise White](#) at 4:10 PM EDT on Jun 11, 2008

I will participate in the future due to the fact that I think dissemination of new information is key to keeping everyone educated with trends in science and cleanup of impacted sites.

Submitted by [Joe George](#) at 9:07 AM EDT on Jun 13, 2008

Question 3: Additional comments or technical difficulties encountered?

Glad that you were able to open a second site to accommodate the waiting list

Submitted by [Eugene Peck](#) at 3:24 PM EDT on Jun 11, 2008

I was disappointed by the inconsiderate behavior of a small number of participants who felt compelled to carry on personal conversations during the presentations despite the coordinator's reminders to mute their telephones or turn off their computer microphones, Other than that, I thought that the seminar was very well coordinated, and the presenters offered some excellent data and suggestions. Another great seminar.

Submitted by [Bob Fares](#) at 3:32 PM EDT on Jun 11, 2008

Early random chatter but the problem was rectified quickly!

Submitted by [Stephen Clough](#) at 3:41 PM EDT on Jun 11, 2008

Dr. Edward Neuhauser went to fast, he should have spent more time x slide Dr. Danny Reible should have mention the slide # more often

Submitted by [Franco Pala](#) at 3:44 PM EDT on Jun 11, 2008

Overall - great forum! Thanks!!

Submitted by [Kofi Asante-Duah](#) at 3:44 PM EDT on Jun 11, 2008

None.

Submitted by [Elsie Millano](#) at 3:45 PM EDT on Jun 11, 2008

The voice quality of the simulcast was poor and could use some improvement.

Submitted by [Jeremy Bishop](#) at 3:59 PM EDT on Jun 11, 2008

How does one join SCBA?

Submitted by [Jay Hodny](#) at 4:00 PM EDT on Jun 11, 2008

I had trouble keeping up with instructor's talk in some places because the individual slides sometimes took a bit of time to download. I would prefer if the presentation could be downloaded in advance so that moving from slide to slide was instantaneous.

Submitted by [Louise White](#) at 4:10 PM EDT on Jun 11, 2008

Seminar 3 Comments

Question 1: What additional subject matter or changes should be made to this seminar?

Presentation were too rambling, need to be targeted to one-time presentation, not like a one-day college lecture.

Submitted by [Stan Starling](#) at 4:02 PM EDT on Jun 18, 2008

Maybe better housekeeping - there seemed to be people without the mute button on at times, causing background noise. I am not sure how to solve this.

Submitted by [Austin Cooley](#) at 4:03 PM EDT on Jun 18, 2008

Question 2: Did this seminar meet your needs? Are you likely to participate in the future? Why or why not?

Yes. This area of research is of interest to me as a risk assessor.

Submitted by [Elsie Millano](#) at 3:59 PM EDT on Jun 18, 2008

-Yes. -Yes. -Useful forum!

Submitted by [Kofi Asante-Duah](#) at 4:01 PM EDT on Jun 18, 2008

Yes - very informative. I will definitely be participating in the future.

Submitted by [Austin Cooley](#) at 4:03 PM EDT on Jun 18, 2008

Yes to both questions. The seminar was very informative.

Submitted by [Bob Fares](#) at 4:20 PM EDT on Jun 18, 2008

Question 3: Additional comments or technical difficulties encountered?

The webcast did not work after slide 37 or so; it was repaired and worked well, but it wasn't until almost the end of the presentation. I used my downloaded copy of the presentation to follow the presenter.

Submitted by [Elsie Millano](#) at 3:59 PM EDT on Jun 18, 2008

Acoustics were particularly bad during the second speaker's talk (Maddaloni)

Submitted by [Usha Vedagiri](#) at 4:00 PM EDT on Jun 18, 2008

The presentation locked up on me at slide 31, causing me to have to exit, shut down my computer and re-enter. I believe this was a problem with Clu-In, as I was able to get to other Internet sites (e.g. ESPN.com - go Celtics!) during the time the presentation locked up.

Submitted by [Austin Cooley](#) at 4:03 PM EDT on Jun 18, 2008

The audio cycles on and off every 30 minutes.

Submitted by [Andrew Frishkorn](#) at 4:16 PM EDT on Jun 18, 2008

Server problems prevented me from seeing slides until very end of the broadcast. I was delayed in logging on because of a prior obligation. In trying to pull up the slides I kept getting a server error code. First time I've experienced this with the clu-in or ITRC programs. I'll still continue to take part and will recommend to others.

Submitted by [mike cholko](#) at 5:44 PM EDT on Jun 18, 2008

