## 3-Day Problem Characterization and Risk Remediation Analysis Training --Featuring the FRAMES 1.3, MEPAS®, and SUM³ Software packages with other related tools.

In this course you will learn concepts and methodologies for evaluating health impacts and remediation alternatives for environmental problems and issues. The sessions begin with defining the problem and characterizing the site. With this information you will then convert the problem into a conceptual site model. You will analyze both health/environmental impacts and remediation alternatives that will be applied to evaluate the environmental problem.

You will integrate and evaluate contaminant source, fate/transport through environmental media for multiple exposure routes to achieve health consequences for radionuclide and chemicals, using the MEPAS® software package.

The training is divided into three days.
- Day 1 will focus on FRAMES, Source Term Models, Waterborne Transport, Airborne Transport, Calibration and Hands On experience.
- Day 2 builds on these concepts, and introduces among other things Sensitivity and Uncertainty Analysis, and Modular Risk Approach.

Included in the training cost is an optional Day 3 with three sessions: Bringing Models into FRAMES, Working with Specifications and Integrating Models into FRAMES.

**Register for an upcoming training session now featuring FRAMES 1.3 and MEPAS 4.1.1! Attendance is limited to 12 participants and early registration is recommended. To register, complete the following registration form for each attendee and return by mail or fax:**


Battelle Attn: Randal Taira
Battelle Seattle Research Center
**4500 Sand Point Way NE Suite 100**
**Seattle, Washington 98105**
**Phone: (206) 528-3258**
**Fax: (206) 528-3556**
**Email: TairaR@battelle.org**


WHEN: June 4-6, 2002
Tuesday the 4th, 8am to 5pm
Wednesday the 5th, 8am to 5pm
Thursday the 6th, 8am to noon

WHERE: Richland, Washington

COST: $995 per Person
Covers all Training, Written Materials and Equipment.

FRAMES is available at no additional charge. MEPAS price listings are available from the Battelle Press webpage at http://www.battelle.org/bclscrpt/Bookstore99/default.cfm.
**For additional information, http://mepas.pnl.gov:2080/earth/index.htm**

**Payment Fee:** Please send payment to Randal Taira. Please make payment out to Battelle. Major credit cards are also accepted.

Name: _____

Title: _____

Company/Affiliation: _____

Address: _____

_____

_____

Phone: _____

Fax: _____

E-mail: _____

Area of Expertise/Interest: _____

The following information is for badging purposes and is requested for all attendees and substitutes. If you are a non-US citizen, additional information will be requested.
US Citizen: ☐ Yes ☐ No

Date of Birth:_____

Social Security Number:_____

Specify: ☐ Attending all three days
☐ Attending just June 4th and 5th

For our planning purposes, please indicate your training level: ☐ Basic ☐ Advanced

Optional Activity(s): ☐ Hanford Site Tour
☐ Winery Tour

Additional information on lodging, schedule, and course location will be sent upon receipt of the registration form. If you are unable to attend, substitutions are welcome. The training registration is non-refundable. Training materials will be sent to individuals that are unable to attend alternate training sessions or send a substitute.

**You will learn several environmental modeling software tools in this course.**

FRAMES 1.3 (Framework for Risk Analysis in Multimedia Environmental Systems) is intended to provide a forum from which various models can interact with each other and facilitate a "plug-and-play" atmosphere to site assessments. The FRAMES software is Windows™ based and was created with many features to aid the user in conducting assessments. The FRAMES platform is a key tool that can be used effectively to analyze environmental contaminant scenarios, benchmark models, and communicate scenarios and results to others. These features serve to enhance the user's interaction with the underlying scientific models used in many assessments.

MEPAS® 4.1.1 (Multimedia Environmental Pollutant Assessment System) integrates and evaluates contaminant release and migration through multiple environmental media and estimates human health impact from multiple exposure pathways for chemical and radioactive contaminant release.

SUM$^3$ (Sensitivity /Uncertainty Multimedia Modeling Module) was designed to allow statistical analysis using the existing deterministic models available option in FRAMES. SUM$^3$ randomly samples input variables and preserves the associated output values in an external file available to the user for evaluation. This enables the user to calculate deterministic values with variable inputs, producing a statistical distribution of results. Statistical characterization can be based on distributions, correlations and a new method using equations!

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# Evaluating Problem Characterization, Fate/Transport, and Human Health Impacts for Environmental Problems

A Comprehensive Approach Including "*Hands-On*" Software Sessions

Battelle
Putting Technology to Work