

## **DRSG TeleSeminar**

**Second in a series of discussions on the National Academy of Sciences (NAS) report, "Science and Decisions: Advancing Risk Assessment"  
June 9, 2009**

Paul Feder, DRSG Chair, welcomed members of both the SRA's DRSG and SOT's RASS and introduced Jeff Gift who indicated that the TeleSeminar will be recorded.

Jeff Gift, Moderator  
USEPA, National Center for Environmental Assessment

Today's call will focus on activities that are currently ongoing that are consistent with the NAS report recommendations. The next TeleSeminar in September will focus on what work should be pursued consistent with the recommendations of the NAS report.

### **John Lipscomb, Presenter**

**USEPA, National Center for Environmental Assessment**

**Chemical-Specific Adjustment Factors: The IPCS Approach to Developing Non-Default Values for Inter and Intra-Species Extrapolation.**

John's presented IPCS activities on chemical-specific adjustment factors (CSAF). Mode(s) of action should be considered and the relevance of the mode of action to the human situation should be considered when CSAF are developed. This guidance addresses variability and the development of non-default uncertainty factors (UF) used in the development of RfD or RfC are changed from UF to adjustment factors (AF).

Key steps in the development of CSAF include determining the active chemical species to know what to look for; choosing the dose metric; and evaluation of the experimental data for relevance of populations, route, dose and adequacy of subjects and samples.

The methodology is mature and internationally supported and has been successful applied to environmental contaminants. Bette Meek (University of Ottawa), Lynne Haber (TERA), Jay Zhao (USEPA), and the WHO/IPCS – CASF staff contributed to the work presented in this discussion. The document can be obtained at:

<http://www.who.int/ipcs/methods/harmonization/areas/uncertainty/en/>

Rick Hertzberg led an interesting discussion regarding reducing the uncertainty in risk estimates including comments by Ted Simon, Mark Maddaloni, and Peg Coleman.

**Linda K. Teuschler, Presenter**  
**USEPA, National Center for Environmental Assessment**  
**Categorical Regression Modeling of Multiple Effects from Chemical Mixture Exposures in Cumulative Risk Assessment**

Linda's presented EPA's work on categorical regression modeling of multiple effects from chemical mixture exposures in cumulative risk assessment. Both primary and secondary effects were considered in the development of the cumulative risk assessment methods – EPA/600/R-06/014F (US EPA 2007).

The document proposes a quantitative approach to conduct multiple-effects dose-response modeling for each single chemical in a mixture using categorical regression and using model results in component-based chemical mixtures risk assessment with an evaluation of toxicological interactions and uncertainties. The document also includes the development of risks above the reference dose. Multiple effect dose-response curves were produced and used to develop an All Effects Toxicity Doses (AETDs). This data shows that you can account for multiple effects and mixtures in the same analysis. Categorization of effects could be different based on sensitive subpopulations.

Data presented were developed using SAS, however Linda recommends the use of EPA's CatReg model which can be downloaded from EPA's website.

<http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=18162>

Rick Hertzberg led the discussion that centered on the issue that this approach may be misleading in that it gives precision to something that is fairly subjective and more work is needed in developing severity categories. Michael Dourson, Paul Feder, Mark Maddaloni, Paul Feder, Jeff Gift, and Santhini Ramasamy all contributed to the discussion on the practical aspects of this methodology.

Paul Feder indicated that the next business meeting will be July 7<sup>th</sup> and the next TeleSeminar will be in September where we will explore future research needs. Questions from the first teleseminar will be used to focus the discussion of the September TeleSeminar. Members may still submit questions to: [NAS08report@yahogroups.com](mailto:NAS08report@yahogroups.com)

Submitted by Julie Fitzpatrick