Human Health Risk Assessment

VME 6607

Fall 2012, 4 credits
CEHT Conference Room, Wednesday and Friday, 12:50 – 2:45pm

Instructors

Steve Roberts, Professor (smroberts@ufl.edu) and Leah Stuchal, Assistant Professor (lstuchal@ufl.edu)

Contributing Lecturers

Roxana Weil (reweil@ufl.edu), Keith Tolson (KTolson@Geosyntec.com), Patricia Cline (pcline@ufl.edu), Kendra Goff (kendra_goff@doh.state.fl.us), and Chris Borgert (cjborgert@apt-pharmatox.com)

Course Description

The purpose of this course is to introduce students to the concepts, data sources, and methodologies used in the field of human health risk assessment and to provide the students with an understanding of current issues in this field. The course will include presentations by faculty and guest lecturers, as well as discussion of key papers from the literature. Students will obtain enough hands-on experience to be able to conduct a risk assessment.

Course Objectives

Upon successful completion of the course, students will be able to:

1. Identify and use data sources for hazard identification
2. Demonstrate ability to read and use toxicological reports for dose-response assessments
3. Use EPA documents to conduct exposure assessments
4. Demonstrate familiarity with a range of risk models
5. Conduct a risk assessment
6. Demonstrate an understanding of how risk assessments are used and the impact of risk assessments on public policy and public health issues.

Course materials

There is no textbook for this course. The primary readings will be from the literature and EPA and ATSDR documents.

Course expectations and grading

It is expected that students will come prepared for class, including discussion of reading assignments. Some class activities will require the use of a computer, including installing and running software.

Grading will be based on results from three examinations and class participation as follows:

Midterm I	30%
Midterm II	30%
Final Exam	30%
Class participation	10%

Class Schedule

Date	Topic/Assignment	Presenter
Aug 22	Course Overview; Regulatory Framework for Risk Assessment	Roberts/Stuchal
Aug 24	Hazard Identification; Causation; Design of toxicology studies for hazard ID	Roberts
Aug 29	No class	
Aug 31	No class	
Sep 5	Hazard Identification; Carcinogenicity	Roberts
Sep 7	Dose-Response Assessment, Non-cancer: NOAEL/LOAEL approaches, Hazard quotients; Uncertainty Factors	Weil
Sep 12	Dose-Response Assessment, Non-cancer: Benchmark Dose approaches	Stuchal
Sep 14	Dose-Response Assessment, Cancer: Threshold and non-threshold approaches, Margins of Exposure	Stuchal
Sep 19	RPF and TEF Approaches	Stuchal
Sep 21	Midterm Examination	--
Sep 26	Exposure Assessment: Exposure measurement	Weil
Sept 28	Exposure Assessment: Exposure modeling	Stuchal
Oct 3	Vapor Intrusion	Stuchal
Oct 5	Evaluating Risk from Mixtures	Borgert
Oct 10	Background Analysis and Fingerprinting	Stuchal
Oct 12	Risk Characterization, Deterministic and Probabilistic: Portraying cancer and non-cancer risks	Stuchal
Oct 17	No Class	--
Oct 19	Risk Assessment in the Department of Health	Goff
Oct 24	Risk Characterization, Probabilistic: Microbial risk assessment	Tolson
Oct 26	Midterm Examination	--
Oct 31	Approaches to Cumulative Risk Assessment	Stuchal
Nov 2	Risk from lead: IEUBK model	Stuchal
Nov 7	Risk from radionuclides	Cline

Nov 9	No Class – Homecoming	--
Nov 14	Developing risk-based cleanup levels: Soil	Roberts
Nov 16	Developing risk-based cleanup levels: Groundwater and air	Roberts
Nov 21	No class - Thanksgiving	--
Nov 23	No class - Thanksgiving	--
Nov 28	Risk Communication	Roberts
Nov 30	Review session for final exam	Roberts/Stuchal
Dec 5	Final examination	--