

Please join scientists from Gradient to hear about careers for toxicologists in consulting, including real-life case studies and current opportunities

Topic: Gradient Presentation to MSU

Time: April 14, 2022 12:00-1:00 PM Eastern Time

Join Zoom Meeting

<https://zoom.us/j/99003792453?pwd=OXorUVBJdUswZHM5QVp2WlIBZVEvUT09>

Meeting ID: 990 0379 2453

Passcode: 510275

Consider applying yourself to some of the world's most challenging environmental and human health issues by working in consulting. Toxicologists from Gradient would like to introduce you to the world of scientific consulting by walking through some real-life project case studies in the areas of risk sciences, medical devices, and product safety.

About Gradient: Gradient is a scientific consulting firm known for our services evaluating the exposures and risks associated with substances and chemicals in a wide variety of settings. Our toxicologists assess the potential human health impacts of chemical exposures in the environment, workplaces, and from consumer products. Serving a variety of client types, our projects involve toxicology, as well as analytical chemistry, epidemiology, and exposure analysis. Our scientists also provide *pro bono* services for organizations that need our help. Please join this presentation to hear about how you might apply your technical skills at a place like Gradient.

At this virtual event, we will describe consulting and the areas in which our toxicologists work. We will have time for questions.

Presentations:

Barbara D. Beck, PhD, DABT
on Risk Sciences

In our risk sciences group, we work on a wide variety of projects, such as evaluating the cancer and non-cancer risk significance of groundwater contaminants or performing a weight-of-evidence analysis that a chemical is causally associated with a specific health effect. These projects are often multi-disciplinary involving not just toxicologists, but also individuals with expertise in epidemiology and in contaminant fate/transport modeling. We typically employ a variety of methods such as physiologically-based pharmacokinetic modeling, benchmark dose analyses, and mechanistic analyses to ensure that our conclusions are based on current science. Communication of our findings to different audiences, such as the general public, regulatory agencies, and scientific peers is often a component of these projects.

Project examples:

- Evaluation of cross-species toxicokinetic differences in selected PFAS compounds to facilitate interpretation of animal studies for human risk evaluation.
- Systematic review of the association between long-term exposure to fine particulate matter and mortality, and implications for air quality standards.

Joel M. Cohen, ScD, DABT
on Medical Devices

In our actively growing medical devices practice area, we evaluate potential risks to humans from the multitude of chemicals that might be released from medical devices in order to help regulatory agencies and manufacturers make decisions on the safety of the products. Specifically, we evaluate chemicals released from medical devices for systemic toxicity, genotoxicity, carcinogenicity, and developmental and reproductive toxicity hazards, relying on databases of toxicity test reports and the scientific literature. For chemicals where no toxicity data are available, we utilize *in vitro* and *in silico* methods to assess their potential to cause adverse effects. We often assist clients in their approaches to testing and in their discussions with regulatory agencies.

Project examples:

- Establish biological evaluation plan for a family of implantable devices and surgical instruments.
- Toxicological risk assessment of extractable and leachable chemicals from a variety of devices including orthopedic implants, humidifier drug delivery devices, and dialysis equipment.

Jiaru Zhang, MPH, DABT
on Consumer Product Safety

In our product group, we perform technical analyses to address product safety issues from chemicals found in foods, industrial chemicals, personal care, and consumer products. These projects may be conducted in the context of regulatory requirements, product formulation, product recalls, or assisting in response to questions from the public regarding product safety. We evaluate critically the scientific basis of product safety claims and product liability concerns, examining the underlying toxicology information, testing methodologies, and understanding of potential exposures. We also assist clients to proactively evaluate the safety of their product portfolio using tools such as hazard or risk ranking and alternative assessments.

Project examples:

- Evaluating ingredient safety for product formulation and assessing feasibility of potential alternatives.
- Skin sensitization risk assessment for wearable consumer products.

For more information about Gradient, please contact Cindy Langlois
(clanglois@gradientcorp.com).
<https://gradientcorp.com>

Links to Gradient's bios of the presenters:

Barbara D. Beck, PhD, DABT - <https://gradientcorp.com/bio/Beck>

Joel M. Cohen, ScD, DABT - <https://gradientcorp.com/bio/Cohen>

Jiaru Zhang, MPH, DABT - <https://gradientcorp.com/bio/Zhang>