

# Candidate for President-Elect

## Katherine von Stackelberg, Ph.D



Dr. Katherine von Stackelberg is a Principal at NEK Associates LTD, specialized in developing risk-based modeling tools to support sustainable environmental decision-making. She is a Research Scientist at the Harvard Chan School of Public Health and an affiliate of the Harvard Center for Risk Analysis and is currently Director of Research Translation for a recently funded Superfund Research Program Center ([memcare.sph.harvard.edu](http://memcare.sph.harvard.edu)). She is also co-leader of the Biogeochemistry of Global Contaminants Group (BGC) at Harvard University. Dr. von Stackelberg has published on ecological resilience, the use of uncertainty analysis in decision making, bioaccumulation modeling, and use of decision analytic approaches to integrate ecosystem services and risk assessment for more effective decision-making. Dr. von Stackelberg is the former Area Editor for Ecological Risk Assessment for the journal *Risk Analysis* and serves on the editorial boards of *Human and Ecological Risk Assessment* and *Risk Analysis* and is a frequent peer reviewer for several additional journals. Dr. von Stackelberg served on the Board of Scientific Counselors at the U.S. EPA for six years and was Chair for the last three. She led the effort to explore the use of decision analytic tools and methods to support environmental decision making within the U.S. EPA Office of Research and Development. She is a member of the Scientific Advisors on Risk Assessment for the European Commission in Brussels, has served as Treasurer for the Society for Risk Analysis, and currently serves on the Board of Directors and Treasurer for the Society for Environmental Toxicology and Chemistry (SETAC). She is a frequent peer reviewer for the U.S. EPA (e.g., ecosystem services documents, STAR grant program), and served on a National Academy of Sciences Committee on Interventions to Increase the Resilience of Coral Reefs. Dr. von Stackelberg's current and recent research funding is through the Superfund Research Program and a Harvard Catalyst grant to develop exploratory analyses of per- and polyfluorinated substances (PFAS) exposures, mechanisms of immunotoxicity, and adverse outcome pathway development. Dr. von Stackelberg received an A.B. cum laude from Harvard College, and a Sc.M. and Sc.D. from the Harvard School of Public Health in Environmental Science and Risk Management.

## Statement of Goals

I was introduced to SRA in the early 1990s by my then-boss David Burmaster, and it has been one of my professional homes since that time. Understanding and predicting the conditional probability of an adverse outcome – risk – is more important than ever in the face of large-scale, global challenges with localized impacts. Risk is a part of every

day, from personal lifestyle decisions (I, myself am an eventer, with mounting evidence this may be the riskiest of the amateur sports!

<https://tsaco.bmj.com/content/6/1/e000728>) to biodiversity loss and climate change.

When I first started working at the then newly formed Gradient Corporation in the mid-1980s, risk assessment as applied to managing chemical exposures was a new field. US EPA's Integrated Risk Information System (IRIS) was founded in 1985, followed by publication of the Superfund Public Health Evaluation Manual in 1986. We manually entered data from laboratory printouts, and built simple deterministic, chemical-by-chemical spreadsheets in Lotus 1-2-3 with laboratory-derived toxicity values based on *in vivo* studies. Now we have machine-learning to help us understand the impacts of combined exposures to complex mixtures by harnessing reams of *in vitro* human cell culture data. But risk assessment as applied to chemicals is only one of the many ways risk analyses informs decision-making. There are potential risks across all domains, ranging from emerging technologies (e.g., synthetic biology, gene editing, large-scale changes to physical landscapes) to biodiversity loss (e.g., increased incidence of zoonotic diseases, provisioning of basic ecosystem services). At SRA, we are uniquely positioned to work collaboratively across domains to navigate a path forward that harnesses our collective experiences and provides future risk analysts with the skills to apply next generation tools and methods.

To better harness our collective wisdom, I would like to strengthen communication within the society to encourage stronger interactions across Specialty Groups and regional organizations. Despite an ever-growing interest in ecosystem services, our ecological risk assessment specialty group has amongst the lowest membership across all groups. The largest group, decision analysis and risk, is so fundamental to the field that it is unclear why it should even be a separate specialty group. Abstracts to the annual meeting are categorized by specialty group, which can undermine cross-cutting issues and inadvertently discourage active collaborations. Although our website references regional organizations globally, very few have any information or weblink. The website itself would benefit from a significant upgrade to improve opportunities for virtual membership interaction and user-friendliness.

The professional society landscape is a competitive one. Very few offer the unique transdisciplinary opportunities of SRA, united by the analytical, quantitative, and behavioral aspects of risk analysis. In an uncertain and rapidly changing biophysical world, risk practitioners are needed to inform decision-making across all domains. Through our professional society, we can work together more effectively to influence the issues that face us as a larger society. I believe I can make a positive contribution to strengthening our internal structure to better serve external decision-making.