LRI PROGRAM BEACON

ICCA-LRI Workshops

Better Information for Better Decisions

Advances in biomonitoring, exposure science, and technologies for toxicity testing promise innovations in the science of chemical risk and safety assessment. The International Council of Chemical Association's Long-Range Research Initiative (ICCA-LRI) specifically addresses key questions: What research is needed to bridge the gap between these advances and meaningful interpretation of the data? How to harness the data and knowledge to better inform decisions about public health? How best to communicate emerging research outcomes? Since 2005, ICCA-LRI workshops have provided dynamic forums to foster interactions among researchers and stakeholders, to stimulate discussions that can improve the scientific basis for policy-making, and to support consensus building that can advance risk and safety assessments for chemicals. These workshops continue to showcase the global impact of ICCA-LRI supported science; they provide venues for active exchange among industry, academia, and governmental agencies regarding areas of mutual interest in chemical management.

Addressing Current Scientific and Regulatory Challenges

Biomonitoring—the measurement of chemicals or their breakdown products in human samples or specimens—and the related scientific and communication challenges was the theme for the first ICCA-LRI workshop in 2005. While it was clear that biomonitoring results could indicate whether an exposure to a chemical had occurred and whether levels were increasing or decreasing with time, the data alone were insufficient to determine whether risks to human health existed. The 2005 workshop focused on identifying issues in policy, product stewardship, and communications concerning biomonitoring and highlighted the knowledge gaps and uncertainties that needed to be addressed through additional research. The workshop was designed to mobilize industry scientists around the issue of biomonitoring, share lessons learned, and develop coordinated approaches for communications, product stewardship, and regulatory interactions.

ICCA-LRI Workshops

2005 – ***Workshop on Human Biomonitoring*** – **Paris, France.** Examined biomonitoring from the perspectives of product stewardship, policy/advocacy, communication, and existing scientific knowledge gaps.

2006 – ***Making Sense of Human Biomonitoring Data*** – **Minneapolis, Minnesota, USA.** Fostered consensus on priorities for future research in biomonitoring for ICCA-LRI and other research organizations.

2007 – ***Public Health Applications of Human Biomonitoring*** – **Research Triangle Park, North Carolina, USA.** Provided a venue for discussions about the strengths and weaknesses of biomonitoring for the purposes of public health tracking, intervention, and protection.

2008 – ***Twenty-First Century Approaches to Toxicity Testing, Biomonitoring, and Risk Assessment*** – **Amsterdam, The Netherlands.** Addressed advances in the new technologies for toxicity testing and biomonitoring; considered approaches for effective communication of the deluge of data from these new technologies; and promoted exchange of views on how these technological advancements can be used to improve the science of human health risk assessment.

2009 – ***Connecting Innovations in Biological, Exposure and Risk Sciences: Better Information for Better Decisions*** – **Charleston, South Carolina, USA.** Focused discussions on approaches to interpret the data from the new technologies and to advance risk-based decision-making; reviewed innovative tools to characterize exposure and the implications for health risk assessment; addressed the key role of communication to effectively explain the emerging research outcomes to diverse audiences.

The 2006 workshop convened international scientists from industry, academia, and government with the goal to develop a research agenda on interpretation of biomonitoring data. It focused on those areas where research was needed to close the significant gap between biomonitoring data and human exposures. The discussions and findings from this workshop were influential in the subsequent development of an ICCA-LRI research strategy to interpret biomonitoring data and also impacted directions for LRI research projects beginning in 2007. The research needs identified during the workshop were described in a 2007 article published in the *Journal of Exposure Science and Environmental Epidemiology* (JESSE 17:308-313, 2007).

In 2007, the workshop provided a forum to exchange information on the state-of-the-science for use of biomonitoring for public health. This workshop, co-sponsored with the United States Environmental Protection Agency, stimulated discussions and exchange on the strengths and weaknesses of biomonitoring for public health applications. Key areas included new approaches for interpreting human biomonitoring data, use of biomonitoring in public health tracking, outcomes assessment and management, and communication of biomonitoring information.

The 2008 ICCA-LRI workshop focused on how new technological advancements in toxicity testing can be applied to improve the science of risk assessment and how the large amount of data generated by these technologies can be interpreted. The discussion reviewed where the science to interpret and understand these data clearly lagged evolving advancements in the measurement technologies; what research is necessary to mitigate these lags; and what frameworks are needed to communicate the information, even in a context of uncertainty. The workshop participants evaluated how applications of new technologies for biomonitoring and toxicity testing could facilitate public health and consumer decision-making. An article summarizing the workshop was published in *JESSE* in 2009 (JESSE 19:536-543, 2009). Outcomes from this workshop later informed research planning in the three LRI regions and were incorporated into the American Chemistry Council's *LRI Research Strategy 2009-2015*.

In 2009, the workshop continued the theme of the new toxicity testing technologies and asked how the emerging new data can be meaningfully interpreted, how information about exposures to chemicals must be improved, and, importantly, how results from the new technologies can be effectively communicated to all stakeholders. The workshop discussions noted that, although the new technologies can improve time and cost efficiencies for chemical testing, they do not directly lead to better quality information. Extending the data from *in vitro* test systems, including high throughput screening assays, to estimations of human health risk will require additional information about chemical exposures in populations and relevant susceptibility factors. Establishment of trust among scientists, stakeholders, decision-makers and the general public through effective communication will be fundamental for fostering acceptance of research results from the new technologies.

From Data to Decisions: Informing Environmental Health Policy

LRI research is designed to address the growing gap between advancements in the new technologies and the science to interpret and understand the emerging data.

Workshop Planning

ICCA-LRI workshops are planned by organizing committees that comprise representatives from the three regional LRI programs, academia, governmental, and non-governmental organizations. This committee composition facilitates an inter-disciplinary exchange of ideas and generates recommendations that focus the workshop on the timeliest and most relevant research questions for the chemical industry.

About the ICCA-LRI

INTERNATIONAL COUNCIL OF CHEMICAL ASSOCIATIONS

The International Council of Chemical Association's Long-Range Research Initiative (ICCA-LRI) is a partnership that facilitates collaboration among the independently managed LRI research programs of the American Chemistry Council (ACC), the European Chemical Industry Council (Cefic), and the Japan Chemical Industry Association (JCIA). It embodies the chemical industry's investment in a sustainable future through groundbreaking research, scientific outreach and initiatives that protect public health and the environment. More information about ICCA-LRI and its supporting organizations can be found at www.icca-chem.org.