Arsenic, cadmium, and lead are present throughout the environment, and as such there is the potential for exposure through multiple sources. The purpose of this workshop is to discuss our current understanding of the impact of these substances on human health, with a focus on food and beverages. Risk assessment agencies have evaluated the potential health impacts of arsenic, cadmium, and lead for decades, but data gaps still exist. Clearly identifying health-based guidance values for these elements would help the food industry develop better risk reduction strategies to reduce dietary exposure to these naturally-occurring substances by defining a target for mitigation. The symposium will examine the sources of these substances across the global food supply system, as well as current mitigation strategies to protect consumers. Speakers will provide a holistic look at consumer exposure and discuss steps that can be taken to close our existing knowledge gaps. The session will conclude with a discussion of how these often-complex, technical issues can best be communicated to stakeholders including consumers.