

Session 3 speaker:

## Occupational exposure to metals and workers' health in the industrial green transition

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*Florencia conducts research on occupational and environmental exposures and health effects in human populations, with special focus on metals. Florencia has studied the exposure to mercury and health effects among gold miners, women and children in remote mining areas in as well as the maternal and fetal health effects of the exposure to arsenic, lithium and boron through drinking water among indigenous populations in the Argentinean Andes. Florencia has also studied the working conditions and exposure to pesticides among agricultural workers from sugarcane, flowerculture and banana plantations as well as muscle-skeletal disorders among different occupational groups in Ecuador. Recent research focuses on the cardiovascular and renal effects of the exposure to lead and cadmium as well on the occupational exposure to metals during manufacturing and recycling of lithium-ion batteries.*

### Short abstract

The EU priority objective of achieving climate neutrality by 2050 requires a rapid transition to a resource-efficient and circular economy. Electrification of the vehicle fleet is one of the key factors to achieve the environmental goals of climate neutrality and to reduce traffic-generated air pollution in cities. Rechargeable lithium-ion batteries are the prominent technology for use in electric vehicles, but it also implies a considerably high demand for raw materials (mostly metals) globally. At present, metals used in the production of lithium-ion batteries in Europe come mostly from countries outside EU. Metals are a limited natural resource with large environmental impact and to some extent considered ethically problematic. Several gigafactories for manufacturing and recycling of lithium-ion batteries are underway in Europe. In these novel workplaces, thousands of employees will be exposed to chemical health risks, including metals, in new, unknown occupational contexts. In addition to the technically challenging development of processes, this growing industry faces challenges regarding a healthy and safe working environment. This talk will give an overview of health risks associated with the exposure to metals that are part of the industrial green transition as well as the knowledge gaps where more research is warranted.