



DA VENIAM SCRIPTIS QUORUM NON GLORIA NOBIS  
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LIST of ABSTRACTS

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## **Background or Purpose**

Gold mining is the anthropogenic activity that contributes the most to mercury contamination in the Amazon, enhanced by deforestation and climate stressors that pose additional threats to human health and ecosystems. The Indigenous people are significantly impacted, raising the need for intervention to eliminate inequalities. The Amazon may become a degraded ecosystem, as recognized at the high-level summit held in Belém, Brazil in August 2023. The eight Amazonian countries agreed on a protection plan for the forest illustrated in the Belem Declaration. The implementation of this plan is highly dependent on scientific data supporting and guiding this concerted governmental action.

## **Content**

Considering these premises, a workshop was planned with the patronage of Collegium Ramazzini at the Annual Conference of Global Health for the Americas, held by FIU in Cartagena, Colombia, in September 2023. Experts from FIOCRUZ, Brasil, Universidad de Cartagena, Colombia, Universidade Federal do Para, Belem, Brasil, Centro de Innovación Científica Amazónica, Puerto Maldonado, Perú, Instituto Nacional de Salud, Lima, Perú, Ministério dos Povos Indígenas, Brasil, reported updates on exposure-related health impacts, genetic predispositions, and co-exposures between mercury, microplastics and agrochemicals introduced by deforestation and mining.

## **Implications for addressing the issue**

This presentation illustrates the current experience in the Amazon research and the needs to enhance and strengthen specific partnership focused on the environmental crisis in this key area of Latin America. To avoid fragmentation of scientific efforts, unified cohorts should be created to gain epidemiological (and political) power to address the complexity of exposomic and social stressors affecting human's health in this region.

## **Potential follow-up/actions**

The CR statement of 2021, "Reducing disease and death from artisanal small-scale mining" included recommendations for governments, employers and mineral purchasers that need to be applied locally. These inputs should be conveyed to the new Intergovernmental Science Panel for the Amazon established by the Declaration of Belem.

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# **Occupational solar ultraviolet radiation exposure in a group of Italian fishermen: re-analysis of data within an international study aimed at building a job exposure matrix**

Conference Sessions - Session

*Research Data Abstract Form*

## **Stiscia Mitia**

Dr. Stiscia is resident physician of the Specialization School of Occupational Medicine at the University of Modena and Reggio Emilia, involved in research and clinical activities for the prevention of health risks in workers exposed to occupational risk factors.

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## **Background**

A novel job exposure matrix (JEM) combining personal solar ultraviolet radiation (UVR) measurements and expert ratings is under development by an international research group (Wurtz et al. Saf Health Work 2022).

## **Methods/Approach**

A UniMoRe expert participated with other nine experts in the assessment of probability and duration of outdoor work for all ISCO-88 (International Standard Classification of Occupations) codes. To integrate objective measures in the JEM, we re-analyzed solar UVR data collected with personal dosimeters in 7 fishermen of the North-Adriatic Sea (Modenese et al. 2019). We grouped them according to the ISCO88 fishermen codes 6152 'Inland and coastal waters fishery workers,' and 6153 'Deep-sea fishery workers.'

## **Results**

Based on the experts' estimates, fishermen were the highest exposed group for both probability and duration. Our measurements showed that the 6152 group, formed by two workers conducting sea snail and cuttlefish fishing on small boats with no possibility of shielding from sunlight, received a daily UVR dose ranging from 0,8 to 5,4 Standard Erythema Doses (SED). Group 6153 included five fishermen who were mussels fishing and trawling on medium-sized boats, partially shielded from sunlight, and received a daily UVR dose between 0,3 and 2,1 SED.

## **Conclusions and next steps**

Fishermen with the ISCO88 codes 6152 and 6153 were classified by experts in the highest level group of UVR exposure. In our re-analysis, coastal fishermen received, at least in one of the two days, >1 Standard Erythema Dose (SED) (maximum= 5,4 SED). Deep sea fishermen received lower UVR doses; nevertheless, 3 out of 10 measurements resulted >1 SED, (maximum= 2,1), i.e., twice the energy needed for sunburns. Notably, measurements were collected during cloudy mornings in spring. Our data, matched with the expert assessment, is a significant contribution to the development of an innovative solar UVR JEM.

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# **Effects of climate change, physical stress and personal protective equipment on the thermal strain of healthcare workers**

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