Divecha Centre for Climate Change
Indian Institute of Science
BANGALORE - 560012
Phone: 91-80-22933425/2075

DCCC Seminar

Title: **"How metal stable isotopes offer unique insights in exposure assessment and disease detection" .**

Speaker: **Dr. Kathrin Schilling,**
Assistant Professor
Columbia University Irving Medical Center,
Environmental Health Sciences

Date: 09th March 2023 **(Thursday)**

Time: 11:00 AM – 12:10 PM

Venue: DCCC Auditorium, 2nd Floor, D314.

Coffee/Tea: 10:30- 11:00 AM

Speaker Bio: -

Dr. Schilling is an analytical and isotope (geo)chemist. Her interdisciplinary research brings high-precision metal isotope analysis that are currently firmly located in Earth Sciences into a synergistic space with multiple new approaches in Environmental Health Sciences. Dr. Schilling explores various metal isotope systems (e.g., selenium, zinc, copper) as biomarker for environmental carcinogens, nutrient status and as source tracers of metal exposure using high-resolution multi-collector ICP-mass spectrometry. Dr Schilling received the Young Investigator Award from the Royal Society of Chemistry in 2019 for her work on zinc stable isotope as potential diagnostic biomarker for pancreatic cancer.

Abstract: -

Our body's isotope metallomics is the fingerprint of our health. Metal isotopic signatures in our body can vary depending on endogenous and environmental factors such as redox reactions, adsorption, and ligand coordination of metalloproteins. Metabolic reaction rates or binding strength of lighter isotopes differ from that for heavier isotopes. This difference is reflected in the isotopic composition of blood, urine and tissue. Thus, natural metal isotopic biomarker has a vast potential to help characterize sources of exposure, pharmacokinetics of metals in the human body, mechanisms of toxicity, and minute changes of metabolic processes caused by disease development and progression. Thanks to recent rapid technological and instrumental progress, isotope ratio analysis is 100 times more sensitive than concentration measurements.

All are welcome!