

# 4<sup>th</sup> Sumitra Maharana Memorial



## Lecture on Molecular Biology and Biotechnology



# STABLE ISOTOPES IN NUTRITION- protein and the health-nutrition- agriculture linkage



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India faces problems of dietary quality rather than quantity leading to protein and micronutrient deficiencies that impact emerging and refractory public health problems of obesity and diabetes as well as under nutrition and low birth weight. This is particularly marked for protein. The requirement of the essential amino acids in humans was determined with stable isotope methods at St John's, and used as the primary evidence by the WHO/FAO/UNU to redefine essential amino acid requirements of man. The protein quality of many food sources, particularly cereals cannot meet the increased requirements. While nutrient density of foods is known, nutrient bioavailability is not known with any certainty for many foods, particularly plant foods eaten by humans but stable isotope methods allow for accurate in vivo measurements. Bioavailability in turn interacts with the environment, hygiene and the intestinal microbiome. This underscores the need for good physiological and mechanistic science to underpin public health policy and programs and an understanding of the interaction of the physiological state with the environment and nutrient requirements, or the interaction of the contamination of the food supply, the environment and the gut microbiome with nutrient bioavailability and physiological outcomes.

**Monday, January 22, 2018 at 4:00 pm**

**Lecture Theater (AG 66)**

**TIFR, Homi Bhabha Road, Colaba, Mumbai, 400005**

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