



CSIR - INDIAN INSTITUTE
OF TOXICOLOGY RESEARCH



COUNCIL OF SCIENTIFIC
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Dr Srikanth S Nadadur

Embassy Science Fellow
National Institute of Environmental Health Sciences
Research Triangle Park, NC & Science Fellow
Economic, Environment, Science and Technology Section
US Embassy, New Delhi, India.



50 Years of Service to the Nation



Dr Srikanth S Nadadur

Dr Srikanth S Nadadur, PhD, Program Director, NIEHS, NIH, Research Triangle Park, NC.

Dr. Nadadur is currently on sabbatical as Science Fellow at the US embassy in New Delhi to provide scientific support for developing collaborative research program on air quality and human health. This opportunity is an outcome of the memorandum of understanding signed between President Obama and Prime Minister Modi in January this year.

Dr. Nadadur is Program Director at the National Institute of Environmental Health Sciences for the past eight years. He oversees the development of national research programs in air pollution cardiopulmonary health and Nanotechnology Environmental Health and Safety (NanoEHS). He is a member of the US National Nanotechnology Initiative (NNI) sub-committee on NanoEHS and co-authored NanoEHS research strategic plan released by NNI in 2012.

Dr. Nadadur obtained his M.Sc. and PhD in molecular physiology from Sri Venkateswara University and joined Industrial Toxicology Research Center as CSIR Research Associate. Where, his work was focused on understanding the effects of pesticide interactions on neural and systemic toxicity. He joined as postdoctoral fellow at Roswell Park Cancer Institute, Buffalo, NY in 1989 to work on the chemical carcinogenesis and chemotherapeutics. Later he worked as Principal Investigator at US EPA's National Health Effects Environmental Research Laboratory at Research Triangle Park, NC to integrate toxicogenomics approaches to air pollution cardiopulmonary health and also contributed to the development of Ozone Air Quality Criteria Document that provided scientific basis in revising the National Ambient Air Quality Standards for Ozone by US EPA in 2008.

Environmental Health Research in 21st Century: Need for a Paradigm Shift in Exposure and Response Analysis

Srikanth Nadadur, PhD

Division of Extramural Research and Training,
National Institute of Environmental Health Sciences
Research Triangle Park, NC & Science Fellow
Economic, Environment, Science and Technology Section
US Embassy, New Delhi, India.

Over the past two decades, with more refinements in study design and incorporation of advanced technologies, research findings across the globe have clearly established that the environment plays a significant role in our health and disease contributing significantly to global disease burden. Similar to our initial efforts of understand the role of genetics in disease, focusing on single entities, environmental health research pursuits were also focused on one exposure at a time. To some extent this was guided by policy or occupational exposure to specific chemical/agent at the work site. Integration of omics-based approaches into toxicological research accelerated identification of alteration in specific molecular pathways involved in the initiation and or progression of disease. These efforts to some extent contributed to a small battery of potential biomarkers for both prognosis and diagnosis of exposure to a limited set of chemical/toxic agents. But, in the real world humans are exposed to thousands of chemical and physical agents and majority of times simultaneously. In addition, we are beginning to understand how these influences are confounded by diverse factors such as preexisting disease, nutrition, socioeconomic status and behavior. The current approaches in environmental health are evolving to understand the totality of exposure from preconception throughout life span. Besides exposure, the health research investigations should also integrate associated biological response alterations, homeostasis mechanisms and biological resilience. This presentation will provide a historical perspective with examples of lessons learnt from studies using single pollutant exposures to the emerging concept of 'exposome' to address environmental health issues in the 21st century.

Disclaimer: The views expressed in this presentation are solely that of the presenter and does not reflect views or policies of NIEHS or State Department.





CSIR-INDIAN INSTITUTE OF TOXICOLOGY RESEARCH (COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH)



CSIR-IITR, Lucknow is the only multidisciplinary research institute in the field of toxicology in South East Asia with the motto:

Safety to Environment & Health and Service to Industry

R&D Areas

- Food, Drug & Chemical Toxicology
- Environmental Toxicology
- Regulatory Toxicology
- Nanotherapeutics & Nanomaterial Toxicology
- Systems Toxicology & Health Risk Assessment

Services Offered

- GLP certified for pre-clinical toxicity studies
- NABL accredited
- Safety / toxicity evaluation of NCEs
- Water quality assessment and monitoring
- Analytical services
- Environmental monitoring and impact assessment
- Epidemiological studies
- Information on chemicals / products

Recognitions

- Scientific & Industrial Research Organizations (SIROs)
- UP Pollution Control Board (Water & Air)
- Indian Factories Act (Drinking Water)
- Bureau of Indian Standards (Synthetic Detergents)
- Food Safety & Standards Authority of India (FSSAI)

Technologies Developed / Available

- Water Analysis Kit
- Mobile Laboratory Van for on spot water quality analysis
- Argemone Detection Kit for rapid screening of Argemone in mustard oil
- CD-Strip for detection of butter yellow, an adulterant in edible oils
- Arsenic Detection Kit



Director

CSIR-Indian Institute of Toxicology Research

विश्वेश्वर भवन, 31-अद्वैत रोड़ी मार्ग, पोस्ट बॉक्स नं. 80, एफ.डी.सी.-226001, 34, अद्वैत
VISHWESHVAR BHAVAN, 31-MAHATMA GANDHI MARG, POST BOX NO. 80, LUCKNOW-226001, U.P., INDIA

Phone: +91-522-2627596, 2614110, 2628228 Fax: +91-522-2628227, 2611547
director@iitrindia.org www.iitrindia.org



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