



**International Life Sciences Institute India**

**First National Seminar on  
Personalized / Precision Nutrition  
for Sustainable Health -From Theory to Practice**

**Date: 12 September, 2023 at 3.30 – 6.30 PM IST**

**Camp: New Delhi**

***On: CISCO Webex***

**Compendium of  
Abstracts & CVs**

## Abstracts and CVs

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## **BRIEF CV**

### **Dr. Biplab K. Nandi**

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**Dr. Biplab K. Nandi** is currently the Chairman of ILSI India.

He served and retired from the Food and Agriculture Organization of the UNITED NATIONS (FAO). He was posted at FAO's Regional Office for Asia and the Pacific, Bangkok, Thailand. He worked as Senior Food Safety and Nutrition Officer for 18 years. There were 46 countries including Pacific Island countries in the Region that Dr. Nandi had to collaborate with in the areas of Food Safety, and Food and Nutrition Security. Besides these Nations, he had vast experience in collaborating with WHO, UNICEF, UNDP, USAID, etc. during his tenure.

Dr. Nandi acquired experience in the field of Food and Nutrition in India as well while he was working as the Technical Adviser for the Government of India.

He is at present closely associated with NIN India, IDA, and other Institutions. He is a distinguished member of the Independent Ethics Committee of the Apollo Multispecialty Hospitals, Kolkata.

He enjoys doing a lot of Philanthropic work in Kolkata and other places. He is the President of an NGO in Kolkata abbreviated as "SNEHA" (Society for Nutrition Education and Health Advancement).

## BRIEF CV

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**Dr. B. Sesikeran** is Chairman of Governing Council of ILSI India Knowledge Center on Functional Foods, Immunity and Gut Health (K-FFIG) – a center of excellence launched in 2020. He was the Director of National Institute of Nutrition (NIN) Indian Council of Medical Research Hyderabad till 2012. A medical Pathologist by training, he was with the National Institute of Nutrition since 1977. The major area of research has been in Nutritional Pathology particularly in understanding the role of nutrients in cancer prevention. Food safety and toxicology studies were initiated and a pre clinical safety study group was set up in 1998 which has now become one of the leading toxicology facilities in the public sector. During the six and a half years tenure as a Director the Recommended Dietary Allowances for Indians (RDA) along with Dietary Guidelines was revised and the food composition data base project was initiated to update the Nutritive Value of Indian Foods data.

His other responsibilities included Chairman of Food Labeling Committee of the Food Safety and Standards Authority of India (FSSAI), and Chairman of the Review Committee on Genetic Manipulation (RCGM) in the Department of Biotechnology. Published a little over 100 research papers, and chapters in 5 books. Developed guidelines for GM safety testing, Food Labeling (draft form), Guidelines for Probiotics in Foods and Guidelines for Similar Biologics. Initiated the two years Masters Course in Applied Nutrition at NIN. Despite research and Administrative responsibilities, teaching is the main passion. Post retirement assignments are many but the role as Visiting Faculty teaching Nutrition in the Department of Health Psychology at the Hyderabad Central University is the most relevant. He is a fellow of the National Academy of Medical Sciences and the Andhra Pradesh Academy of Sciences. He was President of Nutrition Society of India and Chairman of the National Committee of the International Union of Nutrition Sciences (IUNS) in the Indian National Science Academy (INSA).

## BRIEF CV

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**Dr. Geeta Dharmatti** believes that food has a therapy which can be used as a tool to heal, cure and give happiness. Way to good health is through identifying the right nutrients to his inner health. She is Gold Medalist in Masters - Food Science and Nutrition and she has done Doctorate in Food Science and Nutrition. She is a Registered Dietician and Clinical Nutritionist. She is Director and Founder: Geeta Nutri Heal Consultancy; and Chief Nutrigenomic Counsellor: Gene Support.

Dr. Dharmatti is Regular faculty at the National Insurance Academy Training Center, Baner, Pune; Faculty at Lokmanya Medical foundation for Industrial Health course; Faculty: CCIH: Course of Integrated Dietetics at SPPU; Guest Faculty: Symbiosis Institute of Health Science; Adjunct Professor at Tilak Maharashtra University Nutrition Department; PhD Guide; Bariatric Course Coordinator: on-line course SVT College Mumbai; and Team Member of Synapse (Pune) on Mind Body Medicine. Dr. Dharmatti has been practicing holistic nutrition counselling to athletes from various sports like Marathon, Skating, Boxing, Badminton, Cycling etc.

She has published many articles and papers in national as well as international journals, newspapers as well as researches and has authored a book: "*It's not always calories dear.....*". She is Past President of Indian Dietetic Association, Pune Chapter (2010-2014) and is a member of several prestigious organizations like: Indian Dietetic Association (IDA) Pune chapter; Nutrition Society of India (NSI) Hyderabad chapter and Indian Society of Parenteral and Enteral Nutrition (ISPEN) Pune chapter.

# **Personalized Nutrition: Nutrigenomics as a Tool in Dietetic Practice – Current Approach and Challenges in India**

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## **ABSTRACT**

Personalised nutrition is a novel public health strategy aiming to promote positive diet and lifestyle changes. Tailored dietary and physical activity advice may be more appropriate than a generalised ‘one-size-fits-all’ approach as it is more biologically relevant to the individual. Information and computing technology, smartphones and mobile applications have become an integral part of modern life and thereby present the opportunity for novel methods to encourage individuals to lead a healthier lifestyle. The goal of personalised nutrition is to holistically work on health using genotype, phenotype, medical, nutrition and other relevant information about the individuals. In today's confused world where nutrition information is used as a general approach, efficacy and dietary approaches are more sustainable when we have the approach more personalised.

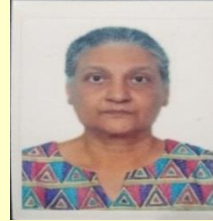
Trend towards personalisation is the result of nutrition research connecting food and health and technology which enables better and continuous measurements of markers of individual health and fitness. Personalised nutrition advice may fit in every stage of lifecycle of an individual and take care of special situations / conditions like obesity, sports requirement, pregnancy etc. It can also suit the person's cultural or religious background that dictate particular diet.

Personalised diet with genetic information helps to identify prevention strategies and approaches to nutrient based nutrition for good health and disease prevention. Nutrigenomics, Nutrigenetics approaches in personalised health have a better relation with food in individual approach for sustainable health goals. Human genome study identifies the gene variations and epigenetics support for a better approach towards healthy and sustainable lifestyle. Personalised Nutrition approach with food and information and technology integration will pave the way in the new future for nutrition prescription.

## BRIEF CV

### **Dr. Shobha Udipi**

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**Dr. Shobha Udipi** has PhD in Foods and Nutrition from Purdue University USA in 1984 under the guidance of Dr. Avanelle Kirksey, and her postdoctoral fellowship also with Dr. Kirksey at Purdue University. She returned to India in 1985 and joined SNTD Women's University as Associate Professor and in became Head of the Department Mumbai and Director of Department of Post Graduate Studies & Research in Home Science. She is past National President- Indian Dietetic Association.

Over the years at SNTD she has guided 19 PhDs to completion. She has been Principal Investigator for 51 projects that were supported by Ministry of Health and Family Welfare as well as national agencies like University Grants Commission, Department of Biotechnology, Department of Science and Technology and Indian Council of Agricultural Research, industries, bilateral agency- UNICEF and International Development Research Centre (IDRC), Canada.

Dr. Udipi has worked extensively in community development programs for urban development and training as part of Government of Maharashtra's development programs. Her areas of interest are Maternal and Child Nutrition and Health, Nutrition and Health Education, Clinical Nutrition with focus on Cancer, Diabetes, Atherosclerosis and Obesity, Food Product Development, Indigenous/ Traditional Systems in Health and Medicine, Nutrition and Dietetics in Ayurveda and Functional Foods. She has published 100 papers in National and International journals and written 7 chapters in books, 4 books, 2 manuals and 12 monographs published by Department of Foods Science and Nutrition, SNTD Women's University.

## **BRIEF CV**

### **Dr. Aashish Phadke**

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**Dr. Aashish Phadke** has completed his B.A.M.S. & M.D. (Ayurved) from Mumbai University & also has to his credit Ph.D. (Philosophy – Yoga) from Mumbai University. He also successfully completed M.S.(Psychotherapy) & M.A. (Philosophy – Yoga). He has undertaken Adv. Dip. in Yoga, Dip.in Yogic Edu., (TTC in Yoga), D.B.M., D.M.M.(Mktg.), D.I.T., Dip.in Sanskrit, Dip.in German, Dip.in Photography, Dip.in Music, Dip.in Pharmacy, D. Opt., Dipin Graphic Digital Designing, Dip. in Web Designing, Dip.in Web Programing, P.G. Cert.in Children Health & P.G.Cert.in Gynecology & Obstetrics, P.G. Cert. in Family Planning.

Dr. Aashish Phadke is actively involved in academics, research & development, clinical practice as an Ayurved- Panchakarma & Yoga Consultant and also involved in the Ayurvedic / Herbal Pharma Industry from last more than 30 years. He has been invited to present his papers at meetings held in Italy, Germany, Netherlands, South Korea and Nigeria. He has published 21 papers in national and international peer reviewed journals and has contributed 6 chapters in three text books. Dr. Phadke is a Director at Dr. Aashish Phadke's AYURVISION – Centre for Ayurveda and Panchakarma Therapy, Vashi, Navi Mumbai and working as Hon. Deputy Director, Division of Endocrine and Metabolic Disorders – Lifestyle Modifications and Yoga , KHS – MRC, Vileparle, Mumbai since last 8 years.



# PERSONALIZED/PRECISION NUTRITION AND TRADITIONAL KNOWLEDGE

**Dr. Shobha A Udipi**

Research Director & Head

Hon Director-Integrative Nutrition & Ayurceuticals  
&

Dr. Sharvari Desai, Assistant Professor;

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## **ABSTRACT**

Ayurved provides a theoretical-level analysis of all aspects of life. It has a deeply comprehensive understanding of food, attaching to it notable emotional, spiritual significance, besides material/biological attributes, considering the living human body and diseases are both products of food.

Ayurveda is based upon *tridoshas* (*Vata*, *Pitta*, and *Kapha*) and *Prakriti*, which encapsulate foundations of personalized ayurvedic precepts for implementation. The aim is to maintain *Swastha* /health, characterized by equilibrium between *Dosha*, *Dhatus*, *Agni*, *Mala*, with a blissful soul, mind, and sense organs; and to regain health of diseased persons. Compatibility and incompatibility of foods are important aspects. Charaka describes denominators of *Viruddhahara*/dietary incompatibility. It emphasizes the material qualities of food, its selection, processing/cooking, and rules for healthy eating. Each *prakriti* has distinct characteristics and, foods for a particular *prakriti* should possess opposite qualities.

Geoclimatic regions (*deshanupatini*), familial characteristics (*kulanupatini*), ethnicity (*jatiprasakta*) affect phenotypic variability. Ayurgenomics has provided new insights into *prakriti*, possibly paving the way for personalized/ precision medicine. Genomic studies show significant differences among *Prakriti* types, in biochemical and hematological parameters, gene expression levels, particularly those involved in immunity, cell division, blood coagulation, etc. Research linking biological and genome-wide levels of expression in with different *Prakritis* will shed more light.

The Ayurvedic system of medicine has unknown/ unrecognised dimensions of food science and a number of other unique principles and practices on the other, its combination/integration with today's knowledge of nutrition biology, could provide significant benefits. Personalized nutrition should ultimately lead to good health and prevent/reduce morbidity.

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**Dr. Saroja Voruganti**, PhD, is an Associate Professor in the Department of Nutrition and Associate Director for Clinical Research services in Nutrition Research Institute at the University of North Carolina at Chapel Hill. Her research focuses on identifying genetic susceptibility to diseases such as obesity, diabetes and neurodegenerative diseases, effect of genetic variation on nutrient metabolism and the effect of nutrients on gene expression related to these diseases. She has extensively investigated the interplay between nutritional and genetic factors influencing disease risk in ethnically diverse and underrepresented populations such as Mexican American, American Indian, Alaska Native, Parsi Zoroastrian and Hispanic children populations.

She is the Director of Genomics and Energy Metabolism (GEM)-Nutrigenomics Core at the Nutrition Obesity Research Center (NORC), UNC Chapel Hill. In this role, she is working towards implementing a comprehensive support system for nutrigenomic & nutrigenetic research, including individualized consultation, and advising of researchers, with the long-term goal of enabling a better understanding of the effects of interaction between lifestyle and genotypes on health and disease. She earned her Ph.D. in Nutrition from The University of Texas at Austin in 2005. She did her post-doctoral training and subsequently was a Staff Scientist at Texas Biomedical Research Institute. Dr. Voruganti joined the faculty at UNC NRI and Department of Nutrition at UNC Chapel Hill in 2013 and was promoted to Associate Professor in October 2019. She has published extensively, including 134 research articles, with 40 as first or senior author.

[https://sph.unc.edu/adv\\_profile/saroja-voruganti-phd/](https://sph.unc.edu/adv_profile/saroja-voruganti-phd/)

<https://uncnri.org/faculty-saroja-voruganti-phd/>

<https://vorugantilab.web.unc.edu/>

# **Food is Medicine – Role of Precision Nutrition in Non-Communicable Diseases (NCDs)**

**Dr. Saroja Voruganti**

Associate Professor, Department of Nutrition  
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## **ABSTRACT**

Optimal nutrition is key to positive health outcomes and overall well-being. Non-communicable diseases (NCDs) such as obesity, diabetes, cardiovascular and neurodegenerative diseases, etc. are leading causes of morbidity and mortality worldwide. Although genetic susceptibility and environmental exposures play an important role in the development of these diseases, inappropriate diet accounts for a major part of the risk for these diseases. There is considerable variability in individuals response to diets or nutrients, and this variation and the underlying mechanisms need to be investigated for proper treatment or management of NCDs.

Precision Nutrition is an emerging science which aims to use these factors about individuals or groups of individuals to develop customized dietary plans which can help prevent, delay or slow the progress of NCDs. The objective of this presentation is to provide an overview on precision nutrition and its relevance to NCDs and public health. The presentation will dwell upon the factors including genetics, epigenetics, microbiome, metabolome, psychosocial, culture and lifestyle, that underlie the variation in responses to diet and need to be taken into consideration while developing personalized dietary plans. Finally, it will discuss the technological and ethical challenges that need to be addressed before putting precision nutrition into practice.

## BRIEF CV

**Dr. Samantha Huey**

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**Dr. Samantha Huey** is a Research Associate in the Center for Precision Health and Nutrition at Cornell University. Prior to this, Dr. Huey was the NIH Maternal and Child Nutrition Postdoctoral Fellow in the Division of Nutritional Sciences. Dr. Samantha Huey received her B.S. in Biology with minors in Nutrition & Global Diseases from Cedar Crest College (Allentown, PA) in 2013, and her PhD in Nutritional Sciences from Cornell University in 2020, concentrating in International Nutrition with minors in Epidemiology and Immunology & Infectious Diseases (committee chair: Dr. Saurabh Mehta).

Her research interests include examining the connections between nutrition, the gut microbiota and immune function in maternal and child health and in particular how precision nutrition may apply in this context. Dr. Huey is investigating these questions in children and mothers who participated in two randomized controlled trials in Mumbai and South India, both of which examined the efficacy of consuming biofortified crops-based foods on growth, immunity, and cognition. During her PhD training, she lived for two years in Mumbai to facilitate the first trial—which involved a complex study design, 20 urban slum community field sites, and managing hundreds of personnel and staff. She conducted an acceptability trial before the study was launched, published in 2017.

Dr. Huey's dissertation work on nutrition status and the gut microbiome in the children participating in the Mumbai trial has been published in both nutrition and microbiology journals. Dr. Huey's current research questions include determining the impact of biofortified crops on the gut microbiome and whether the gut microbiome may predict longer term health outcomes; of particular interest is elucidating inter-individual differences in response to the intervention. Dr. Huey also leads efforts to synthesize evidence on micronutrients, biofortification, obesity, precision nutrition, diagnostic test accuracy, the gut microbiome, and maternal and child health to enable translation to action and guidelines such as for the World Health Organization. Dr. Huey also supports the NIH Nutrition for Precision Health (NPH) Initiative as part of the Data & Analytics Team for the Research Coordinating Center (RCC), co-led by Cornell and RTI International.

# **Food is Medicine and Role of Personalized Nutrition in Maternal and Child Health**

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## **ABSTRACT**

Malnutrition continues to be a major driver of poor maternal and child health (MCH), resulting in a high prevalence of preventable consequences such as compromised immune and cognitive function, growth, and metabolic health. Improved computational power and advances in technology have enabled precision nutrition (PN)-based approaches that can complement current methods for assessing 1) nutritional status to identify those at risk as well as and 2) use individual-level anthropometric, clinical, biochemical, microbiome, social, and environmental characteristics to predict responses to an intervention or a program to address some of the structural challenges in improving maternal and child health and nutrition. We review how artificial intelligence-based methods have been applied or tested in populations of women, children, and infants in the literature, including machine learning models to account for the complexities of and across different data types (e.g., dietary intakes, images, microbiome, etc.) and suggest additional opportunities for PN to monitor effectiveness of existing programs, measure efficacy of interventions, and ultimately to identify those likely to respond to these interventions.

## BRIEF CV

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**Dr. Shaji Krishnan**, Ph.D. is a Mathematical Modelling/AI Expert based in The Netherlands. Working experiences include being a senior scientist at Healthy Living Unit, TNO, Philips/NXP Research, The Netherlands. He specialized in mathematical modeling with an experience of over 25 years. After graduating in electrical and electronics engineering, he pursued a research career beginning at IIT, Madras in Algebraic Number Theory, and later into Hitachi Systems Laboratory, Japan, to look further into developing algorithms to fields like cryptography, image processing, and artificial intelligence. Later on, he extended his mathematical interests towards semiconductors developing statistical methods for VLSI circuit defect detection and diagnosis. Beginning 2010 he shifted his focus from technology to science to continue developing mathematical models for chemo-metrics, and then towards physiological modeling, majorly for type2 diabetes from a system perspective.

Lately, his interests are in developing mathematical models and fundamental structures to characterize health and progressive shifts towards disease more from a system dynamic (complexity theory) perspective with over 35 publications. He recently advised one Ph.D. student in developing a liver-specific endogenous glucose production model and had advised several master students in varied modeling topics earlier.

# Use of Artificial Intelligence in Personalized / Precision Nutrition and Data Protection

**Dr. Shaji Krishnan**  
Mathematical Modelling/AI Expert  
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## **ABSTRACT**

Other than the major differences in understanding nutritional science, beginning with: the traditional ways, followed by personalized to precision ways; as a revision here, we show the implementable and manageable ways to dieting. Although, the challenges have been enormous, and still continuing, majorly because of large-set integration of big data from nutrigenetics, nutrigenomics, nutriepigenetics, metabolomics, metagenomics, etc., experiences shows that it is seemingly possible all with Deep Learning (DL) methods from Artificial Intelligence (AI).

While saying, the seeming possibilities, the character of the data has also changed from static to dynamic, all along with the word-dynamics: personal to precision nutrition, it brought in time. Such change of character in data makes its presence through time variant artificial intelligent systems all through framework of DL methods of which one instance is Deep Recurrent Neural Networks (DRNN). *Its production through this formulization, which essentially is the model, allows us to describe that human body of personal systems that needs to be driven with those nutrients whose working knowledge is learnt with AI with allowable marginality (high-precision).* That nutrient knowledge or behavior is observed and the essential matter captured from a population called training session and later applied to a person or a group as AI application.

Once we understand AI in health-care, including its trends and strategies, there is a bulk of understanding requirement on the ethics, and laws of AI in healthcare. On the basis of ethics falls some classes like informed consent to use, safety and transparency, algorithmic fairness and biases, data privacy, while on law some other classes are safety and effectiveness, liability, data protection and privacy, cyber security, intellectual property law.

## BRIEF CV

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**Ms. Sangeetha Srinivasan** brings with her over 23 years' experience in the field of Nutraceuticals & Nutritional ingredients. She is a techno-commercial expert with a complimenting mix of both consulting and real-world experience. Added to her Masters degree in Nutrition & Food Science, she is striding the way of being an IIM Alumni by Oct 2023. Her professional gamut spins around functional platforms of marketing, strategy planning, competitive benchmarking and scientific communication. Her domain expertise is in the area of functional ingredients with deep understanding of its application platforms. While, Sangeetha continues to drive marketing & business development of functional ingredients, her primary role is to define & implement business strategy for Camlin Fine Sciences newly launched Health & Wellness division. Her outlook of functional ingredients revolves around 4 keys - “what, why, how and when?”. She is passionate about Nutrition and is strongly led by ethics in marketing. Therefore, a principled player who believes that trust outweighs opportunity!



# **Personalized / Precision Nutrition for Improving Public Health- Industry Perspective**

**Ms. Sangeetha Srinivasan**

Vice President – Health & Wellness  
Camlin Fine Sciences, Mumbai

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## **ABSTRACT**

Precision Nutrition promises great growth potential attracting investors, start-ups, FMCG companies, tech providers and ingredient suppliers. It is a premium segment in the Nutrition industry accessible to the high-end consumers. “Will it reach the mass?” depends greatly on scale and business outlook of key stakeholders. The ruling elements will continue to be technology, science and ethical products! In my presentation, the effort is to dissect the industry from across the value chain to see where we stand as on date!.

## BRIEF CV

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**Dr. Parmeet Kaur** Chief Dietician, All India Institute of Medical Sciences (AIIMS), New Delhi, has been with AIIMS for 33 years. She has recently studied "Nutrigenomics: Genetic Testing for Personalized Nutrition" conducted by Dieticians of Canada. Her areas of interest include: Nutrition, health and the environment, Nutrition in COVID-19, Nutrition Screening Tools, Geriatric Nutrition, Clinical Nutrition and Dietetics, Holistic Nutrition.

She has published more than 25 articles in national and international journals. She has received number of awards, the latest being Lifetime Achievement Award in the field of Holistic Health at the National Ayush Conference, January 2020.

She is associated with number of organizations as subject expert including the following: Subject Expert of Board of studies in the Subjects of Sports Science and Medicine for the term/period 17/09/2018-30/06/2020; Expert Panel/Consultant to the Honorable Vice President of India w.e. f., 07/09/ 2019; Advisor - Bachelor of Vocation (Health Care Management), MYAS-GNDU Sports Sciences & Medicine, Guru Nanak Dev University Campus, Amritsar. Session: 2019-20; Resource Person – Central Board of Secondary Education (CBSE) , Class XI and Class XII content writing for Food, Nutrition and Dietetics Course; Empanelment as an Academic Counselor for MSCDFSM Program, Indira Gandhi national Open University; Subject Expert NCERT for Content and Syllabus Development of Food Nutrition & Dietetics -834 which CBSE is offering from Class XI and XII; Expert- Technical specifications for prefabricated, self contained kitchen container based mobile hospitals- under overall scheme of Health Sector Disaster Preparedness and Management , 2020; Resource Person – Unani Medicine (Ayush) - Towards Achieving the Sustainable Development Goal (SDG -3) of Good Health and Well Being in February 2020; Special Invited Guest Lecture on ‘ Importance of Nutrition during Ante-natal care, postnatal care & lactating phase; Importance of nutrition for the optimal growth of children’ as part of Poshan Abhiyaan in 2019, by Central Council for Research in Unani Medicine ( Ministry of Ayush, Government of India); Expert Panel/Consultant to the Honorable Vice President of India w.e. f., 07/09/ 2019; Nutrition Expert for Indian Council of Medical Research (ICMR) task force study entitled “Estimation of oxidative stress during oral iron supplementation in daily versus weekly schedule among anemic pregnant mothers.

Dr. Parmeet Kaur has been nominated by Government of India on the electronic working groups of Codex Committee on Nutrition and Foods for Special Dietary Uses, to establish Nutrient Reference Value-non communicable disease for potassium; and for the proposed draft revision of the list of food additives. She is a nominated Member, Codex Shadow Committee on Nutrition and Foods for Special Dietary Uses. Food and Nutrition Board, Ministry of Women and Child Development, Government of India.