One Week GIAN Online Course on

Microbial Modeling of Pathogens in Foods and USDA-Pathogen Modeling Program's Applications in Ensuring Safety of Indian Food Supply
(18th – 22nd March, 2024)

INTERNATIONAL FACULTY

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Overview

Food safety is an important social and health priority for any country. Almost all types of food are vulnerable to hazards of one kind or the other. Predictive Food Microbiology and Microbial risk assessment is a newly emerging discipline in the area of food safety. The vulnerability of food is largely due to the fact that the numbers of bacteria in food can change at all stages of food production and processing, depending on the nature of the food and the way it is handled, stored and processed . An understanding of each step involved in delivering the food to the consumer, starting from the production to the stage where the product is lifted from the shelf by the consumer, is necessary to eliminate different possibilities of hazards in food. This workshop will provide attendees with an excellent opportunity to learn the most important microbiological safety issues facing the food industry on a global scale, enhance and update knowledge of predictive microbiology, and learn new approaches for modeling foodborne pathogens. Furthermore, this workshop supports our mission to provide consumers with microbiologically safe foods in domestic markets and safe foods for export. The overall goal of the workshop is to provide a clear understanding of how to use the microbial modeling software to obtain accurate estimates on growth, survival and lethal effects of processing environments on foodborne pathogens; and how to formulate foods to include acknowledged intrinsic barriers while designing intervention processes that ensure safety against pathogens in foods. This workshop will describe and demonstrate how the current computer programs of the U.S. Department of Agriculture, Agricultural Research Service can be used to predict behavior of the pathogens in foods. The programs include: Pathogen Modeling Program (PMP); Predictive Microbiology Information Portal (PMIP); and ComBase. By participating in this workshop, attendees will better understand how to use these programs to enhance the safety of our food supply.

Objectives

The primary objectives of the course are as follows:

i) To give an overview of basic food microbiology and predictive modeling

ii) To mathematically describe the experimental data, aiming at predicting the microbial behavior within the range of the experimental values tested (interpolation).

iii) To provide attendees with an excellent opportunity to learn the most important microbiological safety issues facing the food industry on a global scale.

iv) To learn new approaches for modeling food borne pathogens.

v) To provide a clear understanding of how to use the microbial modeling software to obtain accurate estimates on growth, survival and lethal effects of processing environments on foodborne pathogens.

The course will be offered as per the norms set by the GIAN programme. Course participants will learn these topics through lectures and hands-on tutorials.

Course Schedule	**March 18- 22, 2024.**
Modules	**A: Food fundamentals and chemistry** **B: Quantitative microbiology in food manufacturing** **C: HACCP Principles** **D : Fundamentals of predictive microbiology** **E : Application of predictive microbial modelling**
You should attend if…	▪ you are an undergraduate, post-graduate, M.Phil and PhD student in microbiology who have an interest in food safety predictive microbiology; ▪ you are regulatory agencies food inspector; ▪ you are food industry professionals responsible for product development and 'Hazard Analysis Critical Control Point' (HACCP) validation, and quality assurance professionals; ▪ you are a faculty from reputed academic institutions and technical institutions.

How to Register

The Faculty

Dr. Vijay Juneja is a Lead Scientist (Microbiologist, GS---15) of a research project on Predictive Microbiology at the Eastern Regional Research Center, ARS, USDA, Wyndmoor, PA, USA. He received a degree in Veterinary Medicine from G.B.Pant University of Agriculture And Technology, Pantnagar, India; M.S. in Animal Science and Ph.D. in Food Technology and Science, both from University of Tennessee, Knoxville, TN., USA. He is among the world's leading authorities in food safety research. He has developed a nationally and internationally recognized research program on foodborne pathogens, with emphasis on microbiological safety of minimally processed foods and predictive microbiology. His research program has been highly productive, generating over 300 publications, including over 175 peer reviewed journal articles, 47 book chapters including ten in the Encyclopedia of Food Microbiology and is a Co editor of eight books and one Food Microbiology special issue entitled, 'Predictive Modeling in Foods.' Currently, he serves as an Editor of 'LWT---Food Science and Technology' and is a member of the editorial Boards of Journal of Food Protection, Foodborne Pathogens & Disease, International Journal of Food Microbiology and Frontiers in Microbiology. He has served in leadership positions in professional societies and is recipient of several awards.

Dr Jisha M S is a Professor at School of Biosciences and Coordinator of National Institute of Plant Science and Technology, Mahatma Gandhi University, Kerala, India. She has been actively involved in research since 2003 and currently she has 19 yrs of teaching experience. She attained her PhD from Indian Agricultural Research Institute, (IARI) New Delhi, India. She was a gold medalist from UAS Dharwad New Delhi for M. Sc. in Microbiology (1993). She was also a recipient of ICAR Junior Research Fellowship and IARI Senior Research Fellowship. Her research area focuses mainly on microbial synthesis of nanoparticles, bioprospecting of endophytic microorganisms for bioactive compounds, exploration of plant growth promoting and biocontrol microorganisms and also biodegradation of xenobiotics. She has also presented her work in various national and international conferences. Fifteen students have been awarded PhD degree under her guidance. She has published 3 books and around 90 research papers in peer reviewed national and international journals having high impact factor. She has also completed several research projects as Principal Investigator. She has membership in various academic bodies including Indian Science Congress Association, Association of Microbiologists (India), Kerala Academy of Sciences etc.

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Registration Form
(Course ID: 196048H01)

Gian Registration/Application no. :

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Name of the Candidate (Capital letters):

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Address:

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Mobile No.: …………………………………………

E-mail:

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Qualification:

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Place:

Date: **Signature of Applicant**