

### Chief Patron

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ICAR-NDRI, Karnal

### Patron

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**Dr. Jai Kumar Kaushik,** PS & Head, Animal  
Biotechnology Division,  
ICAR-NDRI, Karnal

### Course Directors

**Dr. Bharati Pandey,**  
Scientist,

Animal Biotechnology Division,  
ICAR-NDRI, Karnal

**Dr. Naresh Selokar,**  
Senior Scientist,

Animal Biotechnology Division,  
ICAR-NDRI, Karnal

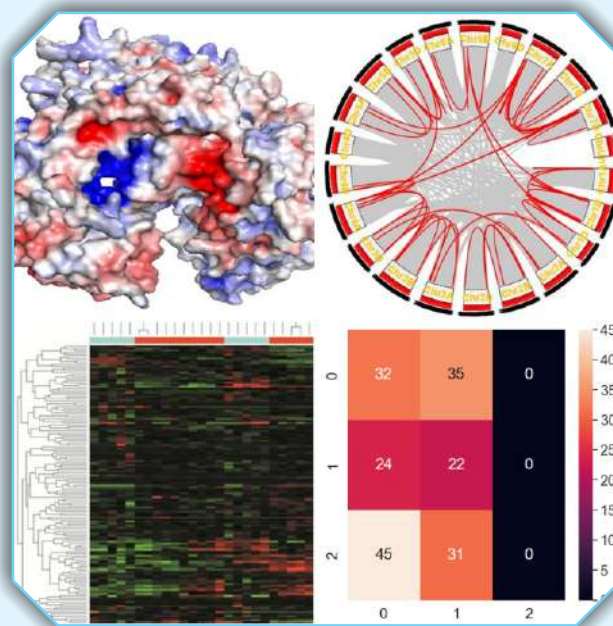
### Course Coordinators

**Dr. Manoj Kumar Singh,**  
Senior Scientist,

Animal Biotechnology Division,  
ICAR-NDRI, Karnal

**Dr. Sudarshan Kumar,**  
Senior Scientist,

Animal Biotechnology Division,  
ICAR-NDRI, Karnal



All correspondence should be addressed to:

**Dr. Bharati Pandey,**  
Scientist

Animal Biotechnology Division  
ICAR-National Dairy Research Institute  
(Indian Council of Agricultural Research)  
Karnal- 132001 (Haryana) INDIA  
Tel. 0184- 2259539 (O), 9560421766 (M)  
E-mail: [bharati.pandey@icar.gov.in](mailto:bharati.pandey@icar.gov.in)

*Note: The candidates will be notified about the selection latest by 11/07/2024 In case of any query please contact Course Director, or Coordinators.*

### IMPORTANT DATES

Last date of application	10/07/2024
Communication to participants	11/07/2024
Commencement of training programme	15/07/2024

For Updates visit: [www.ndri.res.in](http://www.ndri.res.in)



## High-End Workshop (Karyashala) on Harnessing the Power of Multi-omics Big Data in Animal Science for Precision Agriculture

July 15 - July 28, 2024

Sponsored by

(Science and Engineering Research Board)  
(Accelerate Vigyan Scheme)



Organized by



ICAR-National Dairy Research Institute  
(Deemed University)  
Karnal-132001 (Haryana)



## About the workshop

The integration of multi-omics data-including genomics, proteomics, metabolomics, and transcriptomics-provides unprecedented insights into animal health and productivity in precision agriculture. This training program, "Harnessing the Power of Multi-omics Big Data in Animal Science for Precision Agriculture" will delve into advanced computational techniques for analyzing complex datasets, identifying key biological markers, and predicting traits essential for enhancing livestock management. Participants will explore multi-omics data analysis and the application of machine learning algorithms in genomics and proteomics. The program aims to impart knowledge of emerging techniques and offer hands-on practical experience to students at the UG 4th-year level, PG, and PhD levels. Through expert-led sessions and practical exercises, attendees will acquire valuable skills in leveraging multi-omics data and big data analysis, in animal science for sustainable agricultural practices.



## Workshop contents

- High-throughput Omics Data in Bioinformatics
- Basic of computing
- Creating conda environment and installing packages
- R programming for Bioinformatics
- Whole genome sequence analysis
- Transcriptome data analysis
- Metagenomics data analysis
- Mass spectrometry-based proteomics
- Differential gene expression and Annotation
- Genome-Wide Association Studies
- Statistical Methods of Genomic Selection
- Protein Molecular docking and Simulation
- Protein-Protein Interaction network
- Artificial Intelligence and Image processing

## Eligibility

Students currently pursuing UG 4th-year level, Masters or Ph.D. in Bioinformatics/ Biotechnology/ or any other related disciplines at Government Universities, Colleges or private academic institutions are eligible to apply. The number of participants for the programme will be limited to 25. The

selection of the candidates will be made by screening committee as per SERB guidelines.

## How to Apply?

Nomination for participation in the workshop may be made as per the attached format. The scanned copy of the duly filled application signed by the Head of the Department / Principal or the competent authority may be sent to [bharati.pandey@icar.gov.in](mailto:bharati.pandey@icar.gov.in), [selokarnareshlalaji@gmail.com](mailto:selokarnareshlalaji@gmail.com). Along with the filled application, students must also send a scanned copy of the University ID card and Aadhar card.

## After Selection

Selected students should register themselves through the 'Register as Student' option provided on the login page of the AV portal ([acceleratvigyan.gov.in/login](http://acceleratvigyan.gov.in/login)), to facilitate their participation in the "VigyanVarta" section of the Accelerate Vigyan Portal. Selected candidates should bring original 'NO Objection Certificate (NOC)' from their Supervisor/ Head of the department/Head of the Institute while joining the workshop.

## Travel, Boarding and Lodging

Selected participants are eligible for TA (max. AC-III Train fare or state transport buses by the shortest route as per Gol norms). Food and accommodation will be provided by the organizers. Accommodation will be on sharing basis.

**APPLICATION FORM FOR PARTICIPATION IN TRAINING COURSE**  
***Harnessing the Power of Multi-omics Big Data in Animal Science***  
***for Precision Agriculture***

*Sponsored by*

**(Science and Engineering Research Board under Accelerate Vigyan Scheme)**

*Organized at*

ICAR-National Dairy Research Institute, Karnal-132001 (Haryana) INDIA

**July 15 – July 28, 2024**

1.	Full Name (in block letters)	:	
2.	Enrollment/Registration Number	:	
3.	Highest degree (pursuing with Discipline)		
4.	Department		
5.	Institute/University		
6.	Correspondence address	:	
7.	E-mail id	:	
8.	Mobile No.	:	
9.	Date of Birth	:	
10.	Sex: Male/female		
11.	Academic record	:	

Sr. no.	Examination passed	Subject main/ subsidiary	Year of passing	Class ranks distinctions etc.	University or Institution	Other Information
1.	Bachelor degree					
2.	Master degree					
3.	Doctoral degree					
4.	Any other qualification					

The above information provided is true to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the program.

Signature of the applicant

Date.....

Place.....

**Recommendation by the forwarding authority (Guide/ HOD/ competent authority)**

Dr/Mr/Ms. \_\_\_\_\_ is hereby nominated for participating in the SERB-sponsored High-End Workshop at NDRI Karnal from July 15 to July 28, 2024, in physical mode.

Date .....

Signature and Seal.....

*Submit the soft copy of application to [bharati.pandey@icar.gov.in](mailto:bharati.pandey@icar.gov.in) before 10<sup>th</sup> July 2024. The confirmation of participation will be intimated by 11<sup>th</sup> July, 2024.*