

## About Winter School

Since the productivity of crops is directly dependent on the environmental conditions. Development and advancements in high-throughput omics approaches in recent years have paved a way for the systemic dissection of molecular pathways that are activated in response to a variety of adverse environmental stresses/conditions. Among the different omics approaches, proteomics has played a significant role in understanding the biology of agricultural crops. Since proteins are the functional players in the biological systems, system-wide identification of proteins provides a better picture of underlying changes in response to any external stimulus. High-throughput proteome analysis of agricultural crops has led to the identification of several protein candidates involved in the plant defense and growth and regulation, among others. It provides the possible tools that can be used on the agricultural crops to identify the potential candidates, which can be targeted in breeding programs to develop potential stress-tolerant crops with improved yield.

## Topics to be covered

- Gene cloning and expression of desired proteins
- Sample preparation for Protein quantification and identification
- Proteomics and Phosphoproteomics for plant pathogen interaction
- Basics of HPLC and GC for the quantifications of amino acids and fatty acids
- Bioinformatics for protein characterization and 3D Modeling.

## About Host Institute

Rani Lakshmi Bai Central Agricultural University (RLBCAU), Jhansi, is a public university dedicated to the field of agriculture. It was established in 2014 in Jhansi, Uttar Pradesh, India. The university is named after the brave freedom fighter Rani Lakshmi Bai, who played a crucial role in the Indian Rebellion of 1857. RLBCAU offers a wide range of academic programs in the field of agriculture and related disciplines. The university offers undergraduate, postgraduate, and doctoral programs in different disciplines such as Horticulture, Agricultural Engineering, Seed Technology, Soil Science, Agricultural Economics, and Animal Science.

The university has state-of-the-art laboratories and research facilities to support students' academic endeavours. RLBCAU has a highly qualified and dedicated faculty who are experts in their fields. The faculty members are actively involved in research and provide students with valuable insights and guidance. The university has faculty members from various disciplines, including agriculture, horticulture, agricultural engineering, soil science, and agricultural economics. RLBCAU has state-of-the-art infrastructure facilities to cater to the needs of its students and faculty members. The university has well-equipped laboratories, classrooms, and libraries. Additionally, the university has hostels for both boys and girls, providing a comfortable and secure living environment for students. The university also has its own research farms, where students can gain practical experience and exposure to various aspects of agriculture. The research farms include fields for crops, livestock, and horticulture, enabling students to apply the knowledge gained in the classroom.

## Important Dates

The date of receiving application form is  
**10<sup>th</sup> February 2024**  
Selected candidates will be informed on  
**12<sup>th</sup> February 2024**  
by E-mail/ WhatsApp  
Please feel free to contact the Course  
Director/Coordinator for any assistance.



**Rani Lakshmi Bai Central  
Agricultural University, Jhansi**  
Central Instrumentation Facility and 20  
Central Research Labs with Sophisticated  
Equipment imparting  
**ICAR-Capacity Building Program -  
21 Days Winter School**  
“From Genes to Proteins:  
Addressing Molecular Complexity of  
Agriculturally Important Traits in Crops”

**Feb19- Mar10 2024**



**Course Director**

**Dr. Anil Kumar**

Director Education, RLBCAU, Jhansi

**Course Coordinator**

**Dr. Piyoosh K Babele**

## Eligibility & Selection Criteria

The participant should possess minimum qualification i.e.

**Master degree** in Plant Biotechnology, Molecular Biology, Genetics and Plant Breeding, Plant Pathology, Microbiology, Biochemistry, Post-Harvest Technology and other relevant disciplines Basic Sciences.

The training program is open to Assistant Professors / Scientists / Scientists / Teachers / Subject Matter Specialists / Professionals of ICAR Institutes / CAUs / SAUs / KVKs involved in research and development program.

A maximum of 25 participants will be selected on the basis of qualification & relevant research area, statement on the requirement of expertise for ongoing research and future projects.

## How to Apply

Eligible candidates may visit the  
**website:**<http://cbp.icar.gov.in>

for application submission and details guidelines. Take a printout of filled application and get it recommended by the competent authority of your organization and upload the scanned copy of approved application at the CBP portal before the last date of the application form.

## Travel and Accommodation

The participants will be paid actual fare as per their entitlement (limited to AC II Tier) by shortest route and ICAR Guidelines for attending the winter school. The claims will be reimbursed for the shortest route on producing the original receipt/ticket. Free boarding and lodging will be provided to the participants in the University guest house on sharing basis. Please do not accompany your family members.

## About Jhansi

Jhansi is a historic city located in the state of Uttar Pradesh, India. It is named after its famous ruler, Rani Lakshmi Bai, who fought valiantly against the British East India Company during the Indian Rebellion of 1857. The city is renowned for its architectural beauty, historical significance, and vibrant culture.

Jhansi has a rich cultural heritage, with a history that dates back thousands of years. It was ruled by various dynasties, including the Mauryans, Guptas, and Marathas. During the Mughal era, Jhansi served as an important administrative center and military base.

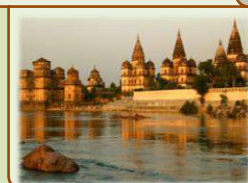
Jhansi is famous for its vibrant culture and traditions. The city is known for its exquisite arts and crafts, including jewellery, textiles, and pottery. The locals also have a strong passion for music and dance, with traditional forms such as kathak and Bharatanatyam being performed with great fervor.

Jhansi is a treasure trove of historical attractions that attract tourists from across India and abroad. Some of the must-visit places include:

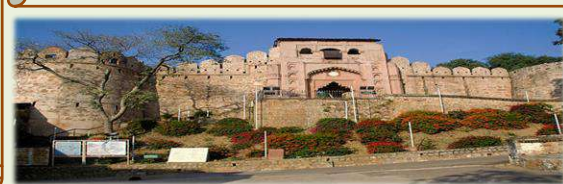
*Jhansi Museum*



*Orchha*



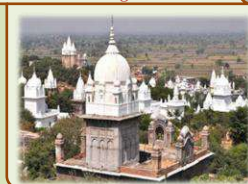
*Jhansi Fort*



*PitambraPeeth Datia*



*Sonagiri*



## Chief Patron

**Dr. A.K. Singh**  
Vice Chancellor,  
RLBCAU, Jhansi

## Patron

**Dr. Anil Kumar**  
Director Education,  
RLBCAU, Jhansi

## Organizing Team

**Dr. Piyoosh K Babele**  
(Coordinator)

**Dr. Ashutosh Singh**  
(Co-Coordinator)

**Dr. PP Jambhulkar**  
(Convener)

**Dr. Maneet Rana**  
(Co-Convener)

**Dr. Umesh Pankaj**  
(Co-Convener)

**Dr. Ritu Gaur**  
(Technical Support)

**Dr. Ajaya K Rout**  
(Technical Support)

## Contact

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