

## HOST FACULTY



**Prof. Sanjib Kumar Panda**  
Professor  
Department of Biochemistry  
Central University of Rajasthan  
Ajmer

He works in the area of plant molecular biology & functional genomics to understand the mechanisms of stress resilience and the development of climate smart crops.

He uses functional genomics approaches along with transgenic and gene editing technology to decipher stress responses in crop and model plant systems. Prof. Panda's group is supported by various National and International funding agencies.

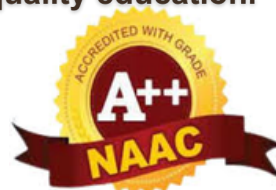
# GIAN 2025

24th- 28th, November

## About CURAJ

The Central University of Rajasthan (CURaj) was established in the year 2009 by an Act of Parliament (Act No.

25 of 2009). This University was established with the aspiration to be one of India's most dynamic and vibrant universities in order to impart cutting-edge education to all learner communities. The University is fully funded by the Government of India that provides quality education to all, especially those coming from humble socio- economic background and seeking quality education.



MHRD Scheme on Global Initiative of Academic Networks Courses on ***"The good and the ugly - Transport and accumulation pathways of essential trace minerals and major food contaminants in plants"***.

## GUEST FACULTY



**Prof. Stephan Clemens**  
Chair of Plant Physiology  
University of Bayreuth  
Germany

He was in the late 1990s among the pioneers initiating the investigation of plant metal homeostasis. He discovered the first plant Cd<sup>2+</sup> transporter and cloned the major plant metal tolerance gene.

Since then he has been working on various aspects of mineral transport and accumulation, studying both essential micronutrients such as zinc (Zn) and iron (Fe) as well as non-essential, highly toxic food contaminants such as cadmium (Cd), arsenic (As) and lead (Pb). A focus of current research is the transport, metabolism and accumulation of newly discovered thiolated As species occurring in rice paddy soils. Three times he was awarded the "Golden chalk" award for best Biology teaching by the students of the University of Bayreuth.

## Know Us More



Our lab is currently working on plant functional genomics, molecular biology, gene editing & genetic engineering in various legumes, rice, and pearl millet.

## Course Outline

For humans, crop plants represent the main source for intake of mineral nutrients such as the trace elements zinc (Zn) and iron (Fe). Plant -derived food is also the most important source of exposure to potentially highly toxic elements like Arsenic, Cadmium and Lead. Insufficient intake of Fe and Zn as well as the consumption of toxic elements are major health threats globally. This has been driving research on plant metal homeostasis and the lectures are planned precisely.

## Course details

### Day-1

Lecture-1 (10:30 a.m-11:30 a.m)  
Lecture-2 (11:45 a.m-12:45 p.m)  
The elements of life – biological functions of microelements  
Lecture-3 (2:00 p.m- 3:00 p.m)  
Tutorial-1 (3:30 p.m- 5:30 p.m)

### Day-2

Environmental sources and biological effects of cadmium, arsenic and lead  
Lecture-4 (10:00 a.m- 11:00 a.m)  
Lecture-5 (11:00 a.m-12:00 p.m)  
Phytoavailability and plant metal transporters  
Lecture-6 (12:15 p.m- 1:15 p.m)  
Low molecular weight metal ligands in plants  
Lecture-7 (2:15 p.m-3:15 p.m)  
Tutorial-2 (3:45 p.m- 5:45 p.m)

### Day-3

Intra- and intercellular metal trafficking  
Lecture-8 (10:00 a.m- 11:00 a.m)  
Lecture-9 (11:00 a.m-12:00 p.m)  
Long-distance transport and seed loading  
Lecture-10 (12:15 p.m- 1:15 p.m)  
Tutorial-3 (2:15 p.m- 4:15 p.m)

### Day-4

Lecture-11 (10:00 a.m- 11:00 a.m)  
Learning from extremes: Metal hyperaccumulation I - Ecophysiology  
Lecture-12 (11:00 a.m-12:00 p.m)  
Lecture-13 (12:15 p.m- 1:15 p.m)  
Learning from extremes: Metal hyperaccumulation II – Evolution  
Tutorial-4 (2:15 p.m- 4:15 p.m)

### Day-5

Lecture-14 (10:30 a.m-11:30 a.m)  
Regulation of plant metal homeostasis  
Lecture-15 (11:45 a.m -12:45 p.m)  
Engineering approaches to optimize seed ionomes  
Examination for students (2:00 p.m- 4:00 p.m)

## Venue

Department of Biochemistry,  
First Floor,  
School of Life Sciences, 4A3 Building,  
Central University of Rajasthan,  
NH-8, Bandarisingri, Ajmer, Rajasthan-  
305817



### Registration link:

<https://forms.gle/syq8NoZnkacfmFdT7>



### Fee:

Participants from abroad :  
US \$500 + 18% GST

Industry/ Research Organizations:  
INR 5,000 + 18% GST

Academic Institutions:  
INR 2,000 + 18% GST

Students:  
INR 1000 + 18% GST



### Account details for payment:

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CURAJ; IFSC: BKID0006667

## Contact Us



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