



Department of Biotechnology
Ministry of Science and Technology
Government of India
DBT



National Institute of
Advanced Industrial Science
and Technology
AIST

DBT - AIST International Laboratory for Advanced Biomedicine

DAI*i*LAB

Classroom for Advanced & Frontier Education
CAFE

LABO - Lab Orientation

and → **JUKU** (Join Universities for **K**indering **You**th) Series #12

Series - 43

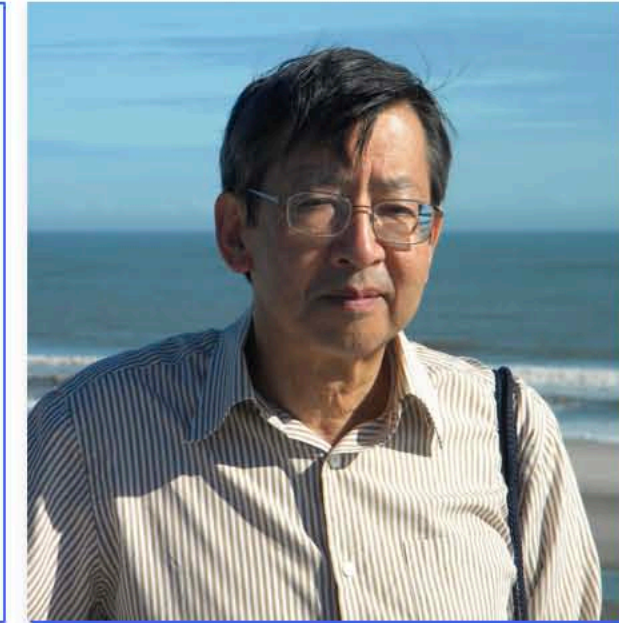
Date and Time: November 14, 2019 (3:30 JST)

Venue: Central 5-41 2F (Meeting Room Number – 41)

Speaker: **Tetsuro Ishii**

Affiliation: University of Tsukuba, Faculty of Medicine, JAPAN

E-mail: ishiitetsuro305@gmail.com



Title: When and how was the Nrf2-regulated antioxidant system found?

We now know that transcription factor Nrf2 (nuclear factor-E2-related factor 2) is the master regulator for defense against oxidative stress. Nrf2 positively regulates expression of a large number of genes involved in detoxification, glutathione and glucose metabolism, and elimination of reactive oxygen species. This study was initiated in 1990s at the University of Tsukuba, Japan. Professor Masayuki Yamamoto was studying Nrf2 deficient mice, but failed to detect any defects in erythropoiesis in them. In the next laboratory, I was struggling to clone stress-induced membrane cystine transporter by a differential screening method. It was unsuccessful but I picked up stress-inducible other genes encoding hemoxygenase-1, peroxiredoxin 1, sequestosome-1/p62 and CD36. However, I had no idea about the transcription factor that regulates expression of these genes. One day, Prof. Yamamoto and his student Ken Itoh knocked on our door asking me to collaborate using their Nrf2-KO mice. It was a happy coincidence to open a novel research field of Nrf2!



IIT-D, India



USJP, Sri Lanka



ILAS, China



Tetsuro Ishii



AIST, Japan



Hanyang Univ, Korea



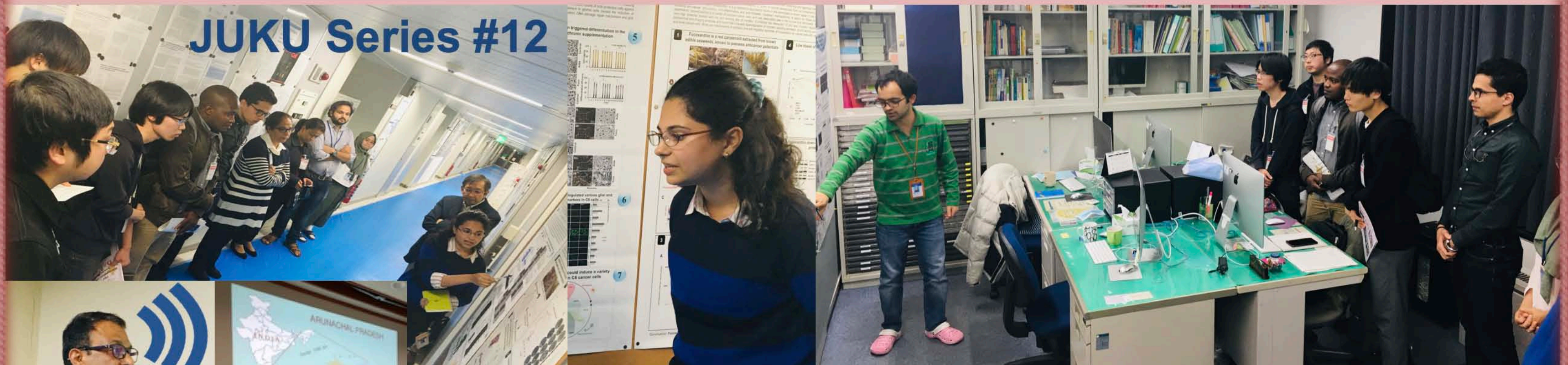
Manipal Univ, India

CAFÉ Series #43

Thanks for participation !



LAB Orientation (LABO) for students from Tsukuba Life Science Innovation, Tsukuba University, Japan, and POster Presentations (POP)



Debajit Mahanta
Introduction of the
Upcoming DBT-
APSC&ST Center of
Excellence in Arunachal
Pradesh, India

