

## **Plant Functional Genomics - PBT-902**

### **Background**

1. The course will focus mainly over high-throughput analysis of differential gene expression is a powerful tool for discovering novel genes or for gaining additional information about certain biological processes on a genomic scale. Such studies will provide plant biologists with increased knowledge about the regulation of agronomically important traits.

### **Rationale**

2. Numerous advancements have been made in this field of study. Thus, there is a need to revise the current course contents to meet the international standards

### **Educational Objectives**

3. The course objective is to introduce the students to recent technical developments and their impact on the field of plant functional genomics. The complete genome information from key species such as *Arabidopsis thaliana* and rice is now available and will further boost the application of a range of new technologies to functional plant gene analysis.

### **Input Obtained from Industry/Corporate Sector**

4. Not applicable

#### **5. Standards/Practice**

- a. University of Illinois at Urbana-Champaign, USA
- b. Southwestern University, Texas, USA
- c. University of Toronto, Canada
- d. University of Edinburgh, UK
- e. Cornell University, New York, USA

### **Proposed Research Areas/Benefit(s) to the Society**

6. Molecular Plant Sciences

7. Detail of contents attached at Annex A.

### Approval by DBS/FBS

8. Approved by FBS.

### Comments of Academics Directorate

9. No additional requirement of faculty, classrooms & labs.
10. The proposal was deliberated and endorsed by UCRC held on 31 Jan 2020.

### Recommendations of Academics Directorate

11. The proposed revisions of core course PBT-902 Plant Functional Genomics in MS Plant Biotechnology is recommended for approval w.e.f Fall 2020.
12. Academic Council is requested for the approval.

## **Course Contents**

### **Objectives**

This is an advanced level course covering different aspects of plant functional genomics. The course was specially designed to train the young scientist affiliated with innovative research in plant sciences

### **Outcomes**

After taking this course a student can differentiate the various component of plant genome including chloroplast genome, how plant gene works? What are the practical approaches for gene fishing in plants, etc.