

Background and Objectives

The Unit of Simulation & Informatics, Indian Agricultural Research Institute, New Delhi has been established in 2003 by merging Bioinformatics Centre (BIC), Unit of Application Systems Simulation (UASS) and Network Centre of the Institute. The centre is organizing the workshop cum training on "Bioinformatics Applications in Crop Science" from December 21-23, 2009 sponsored by Department of Biotechnology, Government of India for teachers / researchers / students from Universities / ICAR institutes / Bioinformatics Centres under BTIS network.

Feeding the increasing population is a big challenge for agriculture scientists. Crop yields have increased during the last century and will continue to improve as agronomy re-assorting the enhanced breeding and develop new biotechnological-engineered strategies. The onset of genomics is providing massive information to improve crop phenotypes. The accumulation of sequence data allows detailed genome analysis by using proper database management systems and accessing strategies by using user friendly information retrieval systems. Sequence databases clearly show extensive conservation of genome information across species. Bioinformaticians goal is to identify the sequenced genes and deduction of their function based on data analysis. Over 20% of the predicted genes occur as cluster of related genes generating a considerable proportion of gene families. Multiple sequence alignment provides a method to estimate the number of genes in gene families allowing the identification of previously undescribed genes. This information enables new strategies to study gene expression patterns in plants. Available information from new technologies and DNA microarray expression data, will help a lot to researchers in agriculture domain to predict initial clues toward unknown regulatory phenomena.

Crop databases and bioinformatics resources for crop plants genomics have been built to harness the extensive work in genome mapping. This

resource facilitates the identification of agronomically important genes, by comparative analysis between crop plants and model species, allowing the genetic engineering of crop plants selected by the quality of the resulting products. Bioinformatics resources have evolved beyond expectation, developing new nutritional genomics biotechnology tools to genetically modify and improve food supply, for an ever-increasing world population, and to solve unanswered research questions on the mechanisms of plant development.

Workshop Topics

The main objective of this workshop is to understand crop database management system in agricultural sciences and to discuss their applications leading towards sustainable agricultural development.

Broad topics to be discussed at the workshop are:

- ▶ Bioinformatics with special ref. to genomics and proteomics
- ▶ Crop database: Concepts and application
- ▶ Structure analysis and Prediction
- ▶ Latest trends in bioinformatics

A series of lectures and presentations will cover the above mentioned topics by experts from IARI, IIT, DU, JNU, IASRI, NBPGR etc. Demonstration of specific bioinformatics tools in agriculture will be an important component of the workshop.

Level of Participation: Scientists, Teachers and Research Scholars

Registration Fee

Registration fee for the workshop is Rs.1000/- (without accommodation) and Rs. 1200/- (with accommodation) payable to Director, IARI and payable at New Delhi through Demand Draft along with the application. Accommodation will be arranged in the guest house of IARI on request on first come first preference and the travel, boarding / lodging charges will have to be borne by the participants/sponsoring institution.

How to Apply

Application for participation may be sent in the prescribed proforma duly forwarded by the competent authority of the institute / University where the candidate is employed. Completed applications in all respect may be sent to the Course Director before 10th December, 2009 at the following address.

Dr. H. Chandrasekharan
Head & Course Director

Mr. A.K. Mishra
Scientist(SS) & Course Co-ordinator
Unit of Simulation & Informatics
A0 Block, LBS Building,
Indian Agricultural Research Institute,
New Delhi-110012
Phone: 011-25841255, 25842490
Fax: 011 25842490
Email : head_usi@iari.res.in,
akmishra@iari.res.in
misamr@rediffmail.com

Website: www.iari.res.in

Maximum no. of participants : 20

Important Dates

Last date for receiving Application : 10th Dec., 2009
Intimation of Selection : 15th Dec., 2009
Commencement of workshop : 21-23rd Dec., 2009

Registration from

1. Full Name (block letters) :
2. Designation :
3. Date of birth :
4. Sex (Male/ Female) :
5. Address for correspondence :
6. Email / Telephone number etc.:
7. Educational qualifications :
8. Professional experience :
9. Computer proficiency :
10. Current Area(s) of Research:
11. Do you need accommodation at IARI : Yes /No
12. Registration fee details: Rs.
DD No. & Date :
13. Tentative date(s) of arrival & departure:

Signature of Applicant :

Date :

Place :

Certificate and recommendation by the forwarding authority

It is certified that the information provided above is verified and found correct. The applicant is recommended & nominated for attending the workshop at IARI.

Date:

Place :

Signature with seal
of the Authority

To

Dr. H. Chandrasekharan / Mr. A.K. Mishra
Unit of Simulation and Informatics
A0 Block, LBS Building
Indian Agricultural Research Institute
New Delhi - 110012



WORKSHOP CUM TRAINING ON

BIOINFORMATICS APPLICATIONS IN CROP SCIENCE

DECEMBER 21-23, 2009

ORGANIZED BY

UNIT OF SIMULATION & INFORMATICS
Indian Agricultural Research Institute
New Delhi- 110012, India

Sponsored by



DEPARTMENT OF BIOTECHNOLOGY
GOVERNMENT OF INDIA
NEW DELHI - 110001