

Dear Faculty, IGERT Fellows, IGERT Associates and Students,

You are cordially invited to attend a Seminar presented by Dr. Venugopala Reddy. Please plan to attend.

G. Venugopala Reddy

Department of Botany and Plant Sciences, Center for Plant Cell Biology (CEPCEB), Institute of Integrative Genome Biology (IIGB), University of California, Riverside, CA 92521

Date: Monday, January 14, 2013

Location: Bourns A265

Time: 11:10am

Dose, Discrimination and Transcriptional Logic of Stem Cell Dynamics

Abstract:

We study the process of stem cell maintenance in plants. As in animals systems, stem cells are critical for growth and development of plants. Growing tips of plants harbor a set of stem cells in structures called shoot apical meristems (SAMs) which provide cells for development of above-ground biomass. Deciphering the regulatory principles of stem cell maintenance and differentiation will facilitate development of crop plants with optimal light harvesting capability leading to higher biomass production. We use combination of approaches including transient genetics, live imaging and microgenomics. We combine information learned from these studies to generate computational models that can explain the process and generate new hypotheses which can be tested by experiments. I will present one aspect of this research which involves understanding how cells sense transcription factor thresholds in regulating gene activities.

Bio:

G. Venugopala Reddy received his doctorate degree in 1999 from the Tata Institute of Fundamental Research, Mumbai, India, where he studied mechanisms of sibling-cell-fate specification in *Drosophila melanogaster*. In 1999, he received a postdoctoral fellowship from the Jane Coffin Childs Memorial Fund for Medical Research Foundation to pursue research at the California Institute of Technology, Pasadena, USA, where he co-developed a live-imaging method to study the dynamics in the shoot apex of *Arabidopsis thaliana*. In 2006, he became Assistant Professor of Cell Biology in the Department of Botany and Plant Sciences, University of California, Riverside, USA, where he focuses on studying the dynamics of stem-cell maintenance in the shoot apex of *A. thaliana*.

Attached are two reference papers for the talk.

