# Centre for Biosystems Science and Engineering

# S E M I N A R

**at 4:00 PM on October 26, 2015**
**Seminar Hall, MRDG, Biological Sciences**

## Artificial Endocrine Pancreas 2015: From Bench to Bedside


## Dr. Ananda Basu

**Mayo Clinic, Rochester, Minnesota, USA**



**Research in the Artificial Endocrine Pancreas to treat patients with type 1 diabetes in children, adolescents and adults is rapidly evolving in the USA and in Europe. It is hoped that clinical use of this technology will be approved by the FDA and its European counterpart within the turn of this decade. This should revolutionize clinical management and the lives of millions of patients with type 1 diabetes. This brief overview of this novel therapy is designed to provide the following information gleaned from the last 5 years of research. Existing artificial pancreas systems are generic, not based on understanding of human physiology, hence limited in coping with challenges of meals, activities of daily living, exercise etc, studies have shown that one size algorithm does not fit all, hence limited applicability. Therefore the learning objectives are the following:1) Identify knowledge gaps in carbohydrate physiology in type 1 diabetes, 2) identify pitfalls and knowledge gaps in glucose sensing in type 1 diabetes, 3)discuss state of the art approaches / components / trials of artificial pancreas in type 1 diabetes.**


### About the speaker:

**Dr. Ananda Basu obtained his MBBS and MD in Internal Medicine from the Jawaharlal Nehru Institute of Postgraduate Medical Education and Research, Pondicherry. Since 2003, he has been a Consultant at the Division of Endocrinology, Diabetes, Metabolism, Nutrition at the Mayo Clinic and since 2011, he has been a Professor of Medicine at the College of Medicine, Mayo Clinic. Dr. Basu's research is currently directed at developing physiological models to inform, fine tune and eventually personalize an effective closed-loop control artificial pancreas system for patients with type 1 diabetes using cutting-edge insulin pump and glucose sensor technologies.**