



**TIFR Centre for Interdisciplinary Sciences,  
Narsingi, Hyderabad 500075**

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## **Seminar**

**The role of a self-sustaining amyloidogenic protein in  
persistence of memory**

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**Abstract:** A key question in the molecular study of memory is how proteins with a half-life of hours to days are responsible for the maintenance of memory over periods from months to years. The cellular correlate of long term memory is thought to be long term synaptic facilitation. Previously in *Aplysia* a protein synthesis regulator, Cytoplasmic Polyadenylation Element Binding protein (CPEB), was shown to be necessary for the persistence but not for the initiation of long term synaptic facilitation. Intriguingly, studies in Yeast and in *Aplysia* neurons revealed that *Aplysia* CPEB can exist in a self-sustaining amyloidogenic prion-like state. Based on this it was hypothesized that the activity-dependent conversion of CPEB to a self-sustaining state provides a mechanism for persistent synthesis of new proteins, which in turn leads to persistence of memory. A key prediction of this hypothesis is that neuronal stimulation will induce conversion of CPEB to its amyloidogenic prion-like oligomeric form, and conversion to this self-sustaining prion-like state is necessary for the persistence of memory. Today the speaker will discuss his work on addressing this hypothesis using *Drosophila* as a model system.

**Date: Thursday, February 28<sup>th</sup> 2013**

**Time: 11:30AM (Tea/Coffee at 11:15AM)**

**Venue: Conference Hall, TCIS**

***All are cordially invited***