



# **IEEE EMBS Engineering in Medicine and Biology Society**

## **Inaugural Seminar:**

### **Micro-Mirror Optics for Controlling Structure and Function in Neural Culture**

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**Assistant Professor**

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#### **Abstract:**

Disorders of the central nervous system are often associated with little or no recovery due to poor neural regenerative capacity, damaging mechanisms that persist after initial neuronal injury, and inhibitory properties intrinsic to myelin. These pathophysiological interactions are complex, and isolation of variables that impact regeneration success and failure is difficult in live animal studies. Thus there is a critical need for physiologically- and translationally-relevant culture models that support the systematic investigation of structural and molecular parameters that may influence tissue growth. We are developing a neural cell and tissue culture platform that exploits digital micromirror device (DMD) optics to enable control over numerous aspects of structure and function in the culture environment. Our goal is to develop a 3D tissue culture model of the optic chiasm to study the guidance of retinal neurites in response to engineered structural, molecular, and electrophysiological cues. It is anticipated that this work will establish a new experimental platform in which to study neural growth and guidance and may also suggest potential treatment strategies.

**Feb 1st, 2010, Monday ▪ 1:40-3:00 PM ▪ 1116 P. F. Taylor**  
**Snacks and drinks will be provided; networking after presentation.**

**Hosted by IEEE EMBS LSU Club**

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