

## Grant Awards for 2011

### **Congratulations!**



**Tayyaba Hasan, Ph.D.** received an **NIH, RO1 grant**

**Award Period:** January 1, 2011 – December 31, 2015

**Project Title:** “Targeted Photoactivable Nanocells: Image-based Drug Delivery and Dosimetry in GBM”

**Project Overview:**

This proposal seeks to create an image-guided platform for the treatment of glioblastoma multiforme (GBM) by combining drug delivery using novel nanoconstructs with a unique magnetic resonance guided optical imaging quantification (MROQ) system for image analysis. We use targeted photodynamic therapy (PDT) to effectively treat GBM. PDT is in clinical studies for GBM treatment and PDT agents can also fluoresce thus enabling online imaging of drug for both image-guided drug delivery and light dosimetry. The basic thesis being tested here is that treatment outcomes are superior when targeted delivery of therapeutic and imaging agents is combined with quantitative imaging to provide pharmacokinetic binding models that guide treatment planning for PDT. The study goals will be achieved in 4 specific aims that include nanoconstructs fabrication, 2D cell culture, newly developed 3D GBM models (recapitulating tumor architecture) and in vivo orthotopic tumor models combined with quantitative imaging using MROQ.