

LBRN Summer Research Seminar Series



Photoactivated Genetic Therapies and Microfluidic Cellular Sensors

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There is promise in the application of engineering principles at the molecular and cellular level to design constructs and devices for therapeutic applications. Our research thrusts include the use of light-sensitive "cage" chemistries and metallic nanoparticles to create light-controlled DNA and RNA nucleic acids for regulating the spatial and temporal activity of hybridization, expression and silencing of target genes. Our other bioengineering applications at small scales include the design of microfluidic chips for the analysis of single cells in a rapid and label-free manner for lab-on-a-chip diagnostics.