

James & Esther King Biomedical Research Program

Guan, Jingjiao

*Chemical & Biomedical Engineering
Florida State University*

*2010 Program
New Investigator Research
(3-year project)*

Project Title: Array-Based Fiber FISH for Genetic Analysis of Lung Cancer

Project Summary: Lung cancer is the leading cause of all cancer deaths, and tobacco smoking is responsible for the prevalence of this disease. Although tremendous efforts have been devoted to the treatment of lung cancer, conventional therapies have been ineffective to increase the survival rate over the past decade. However, an emerging treatment strategy based on the detection and characterization of genetic mutations underlying this disease has shown great potential to significantly improve the situation. Fiber fluorescence in situ hybridization (fiber FISH) is a powerful assay (or analysis) for confirming, identifying, and quantifying cancer-relevant mutations, but the conventional fiber FISH suffers from various drawbacks. The purpose of this project is to develop a novel array-based fiber FISH that can allow more reliable identification and more accurate quantification of mutations in lung cancer. Successful development and application of this technique will deepen our understanding of lung cancer genetics and lay a solid foundation for developing more effective therapies against this devastating disease.