

“Bionanoenabling Technologies for Biosensing and Targeted Delivery”

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Lecture: 9:00 AM-10:00 AM
ENGINEERING CENTER
ROOM EC 2300
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Abstract: As a leading cause of death in developing countries and a persistent problem elsewhere, pathogenic organisms are as ubiquitous as they are dangerous. Significant worldwide resources are directed toward their detection and eradication, leading to a broad coalition of government agencies, healthcare providers, academic researchers, and food manufacturers dedicated to providing the best-available prevention strategies for mitigating exposure risk. At the forefront of this effort is the field of pathogen detection. Our work directly addresses the current lack of simple, rapid, sensitive, and selective pathogen detection methods needed for frontline intervention in the most at-risk populations. We developed biosensing system in both microtiter plate and paper-based microfluidic platforms for the detection of various pathogens such as Human papillomavirus, Epstein-barr virus, and mycobacterium tuberculosis. In another area of research we have developed nanocarriers for the targeted delivery of DNA, protein, and stem cells. Here we focused on developing ligands and strategies that would allow for the delivery of molecules of interest to desired location in situ.

Biography: Dr. Deo is an Associate Professor and Graduate Program Director (GPD) in the Department of Biochemistry and Molecular Biology (BMB) at University of Miami, Miller School of Medicine. She is a author and co-author of over 70 scientific publications and several patents and a recipient of the NSF-CAREER Award. Dr. Deo serves on editorial boards of journals, study section panels, and scientific advisory board of biotech industries. Dr. Deo initiated a Molecular Medicine Pathway Program for medical students and serves as its Director. She is a recipient of the inaugural Outstanding Graduate Program Director Award from the University of Miami in 2014. The research of her group is funded by the National Institute of General Medicine, the National Science Foundation, State of Florida, American Cancer Society, Coulter Foundation, etc. Dr Deo's research interest is in the development of technologies for the detection of pathogens for resource poor settings, design of novel nanobioanalytical techniques based on luminescence and quantum dots for application in biomedicine, diagnosis, and pathogen detection. Other areas of research include development of targeted delivery systems.