



## Centre for Biosystems Science and Engineering Seminar

# Engineering micro and nano carriers for treatment of inflammatory diseases and antibiotic resistant infections

11 AM, 24th June 2016,  
Seminar Hall, MRDG, Biological Sciences Building.

**Dr. Rachit Agarwal,**

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With advancements in the field of drug discovery, biologists and chemists are rapidly creating a large array of anti-inflammatory and anti-microbial drugs that can potentially be highly effective for treatment of complex diseases such as osteoarthritis and lung infections. However, these advancements have not translated into clinical success primarily due to our inability to efficiently deliver drugs, contrast agents and biologics to target sites. Polymeric micro- and nano- carriers have emerged as a promising solution for the targeted delivery of active drugs. The talk will describe the use of nano carriers for the delivery of specialised pro-resolution mediators (SPMs) to resolve inflammation in Osteoarthritis and promote homeostasis. Further, the speaker will describe how the therapeutic potential of Bacteriophages to fight lung infections can be enhanced by delivering them deep into the lungs, by engineering the size and aerodynamic properties of the carrier polymeric particles.

### About the speaker

Rachit Agarwal pursued engineering at Indian Institute of Technology, Kharagpur, India and graduated with a Bachelor and Master of Technology in Biotechnology and Biochemical Engineering in 2009. He finished his doctoral studies in 2009 at The University of Texas at Austin where he worked on shape-specific particles for drug delivery applications under Dr. Krishnendu Roy. Rachit is currently pursuing his post-doctoral studies under Dr. Andres Garcia at Georgia Institute of Technology, Atlanta. His current work focuses on use of biomaterials based nano and micro particles for tissue engineering applications such as Osteoarthritis and developing innovative solutions to emerging diseases such as antibiotic resistant bacterial infections.