

MAE COLLOQUIUM

Microfluidic Assays for Studying the Interactions between Neutrophils and Microbes and their Contribution to Sepsis

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Tuesday, April 21, 4:00 pm | Kimball B11
Refreshments at 3:30 pm | 116 Upson Hall

Abstract:

Sepsis is a deadly syndrome, triggered by infections, which ends the life of more than 250,000 Americans every year. Sepsis is often misdiagnosed, delaying treatment. To address the limitations of current diagnosis strategies, we are developing new assays to study the biology of infections and to detect sepsis early. Our work merges the engineering of novel microfluidic devices with the study of neutrophils, the most numerous white blood cells and the earliest responders to infections. In this presentation, I will discuss several microfluidic devices that enabled us to measure the motility phenotype of neutrophils with higher precision than ever before, in various conditions, including sepsis.

Bio:

Daniel Irimia is a bioengineer, a medical doctor by training, and a researcher in the areas of microfluidics, inflammation, and sepsis. He is an Associate Professor in the Surgery Department at Massachusetts General Hospital (MGH), Shriners Burns Hospital, and Harvard Medical School. He is a leader in the design of novel tools for measuring human neutrophil activities in health and disease. He was recently awarded the "Pioneers of Miniaturization" prize from the Chemical and Biological Microsystems Society for his work on microfluidic tools for analyzing neutrophils and other leukocytes.

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