**BME SPECIAL SEMINAR**

**Jude Phillip, Ph.D.**  
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**Date:** Monday, February 3, 2020  
**Time:** 1:30 p.m.  
**Location:** Traylor 709, East Baltimore campus  
video-teleconferenced, Clark 110, Homewood

**Faculty Host:** Warren Grayson

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**Cellular phenotypes get physical: lessons from aging and lymphoma**

**Abstract:** As we age, cells within organs and tissues undergo profound biophysical and biomolecular changes, which significantly influence the rate of functional decline in humans. Working under the premise that age-related dysfunctions at the clinical scale is related to propagated cellular defects, I will present data showing that aging information is encoded within biophysical properties of cells, and can therefore be used as robust biomarkers of aging. These findings are important as it provides a proof-of-concept, and a hypothetical framework that can be used to stratify individuals based on ageing trajectories in both health and disease. In the context of disease, diffuse large b-cell lymphoma is an aggressive and common type of lymphoma, with peak incidence in individuals 65 to 74 years old. Currently, my work focuses on a critical and understudied aspect of lymphoma biology, geared towards understanding the role of the stromal microenvironment in creating a pro-lymphoma niche. By asking questions regarding the biomolecular and biophysical properties of lymphomas, *i.e.* tumor mechanics, cellular and extracellular matrix (ECM) composition and architecture, and molecular information (*i.e.* genetic, proteomic), we gain a better understanding of how stromal re-programming and matrix remodeling shape the lymphoma microenvironment. My long term vision for this line of work is to identify exploitable targets within the microenvironment for eventual clinical implementations.

**Bio:** Jude is currently a postdoctoral associate at Weill Cornell Medicine in the laboratories of Leandro Cerchietti and Ari Melnick, where he studies the role of the stromal microenvironment in creating a pro-lymphoma niche. Prior to his postdoc, Jude received his PhD in Chemical and Biomolecular engineering at Johns Hopkins University with Denis Wirtz, where he developed a cell-based platform to determine the cellular age of healthy individuals based on biophysical properties of their cells. Jude also holds a bachelor of engineering degree in Chemical Engineering from the City College of New York.