

## BME SEMINAR SERIES FALL 2021

# Yvon Woappi, PhD

MOSAIC Fellow, Harvard Medical School, Brigham & Women's Hospital  
Host: Guillermo Ameer

Thursday, December 2, 2021  
4:00 – 5:00 pm  
Tech LR4

## “ORCHESTRATING SYNTHETIC REGENERATION OF MAMMALIAN TISSUE”



Large scale tissue damage, such as organ failure and burn injury, is a leading cause of morbidity and death. However, the mechanisms underlying full regeneration of organs remain poorly understood. As the largest organ system in the body, the integumentary system is a composite tissue assembly evolutionarily adapted for healing. Consequently, its complex physiology requires multifaceted cooperation between several distinct cell populations and cell lineages of embryologically distinct origins. Equally integrated within this dynamic process is local immune response that produces mitogenic and inhibitory signals throughout the restoration procedure. There remains a significant gap in understanding how these processes are orchestrated, and how various skin cell populations from distinct developmental lineages functionally cooperate to regenerate tissue at organ scale. My research seeks to characterize the molecular language of tissue healing and to harness this malleable dialect for the regeneration of tissue at organ scale. Through the development of organoid models of wound regeneration and the coupling of these systems with novel gene-editing approaches, my work is enabling the functional understanding of the multifaceted cellular events executed throughout restorative healing. This seminar will describe these high throughput technologies and will illustrate their utility in identifying novel regulators of tissue healing.

*Co-hosted by the Center for Advanced Regenerative Engineering*



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