

CARNEGIE MELLON UNIVERSITY

BME 2022 SPRING SEMINAR SERIES

Understanding & Rewriting the Molecular Music of Muscle Stem Cells in Aging



PRESENTED BY

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SCHEDULE

**Thursday,
January 20, 2022
(10:15AM-11:15AM)**

Adult stem cells are powerful engines of endogenous repair that our body uses when presented with injury, but in old age, these engines become dysfunctional. This presentation will frame several vignettes of how skeletal muscle stem cell dysfunction occurs in old age and bioinformatics-based strategies to abate this behavior. In the first example, I will discuss the use of integrative genomic analysis to elucidate molecular mechanisms that contribute to changes to muscle stem cells in old age. In the second example, I will present how subsets of muscle stem cells adopt a neuro-regenerative fate in age and neurodegeneration using lineage tracing and single-cell RNA sequencing. Last, I will introduce how manipulation of muscle stem cell signaling can partially rejuvenate this population. Integrating these studies may ultimately provide foundations to discover and engineer new therapeutics for treatment of sarcopenia and aging.

