Development of a Computational Model for Cell Activity in a Nano-Scaffold

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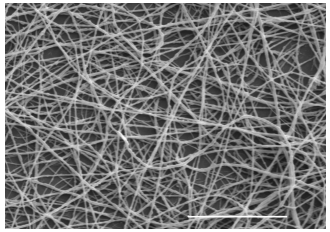
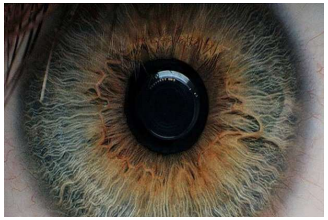
BACKGROUND

How do cells normally function within our body?

VS

What is a nano-scaffold?





Methodology

Creation of a virtual environment in which cell behavior can be measured and recorded.

RESULTS

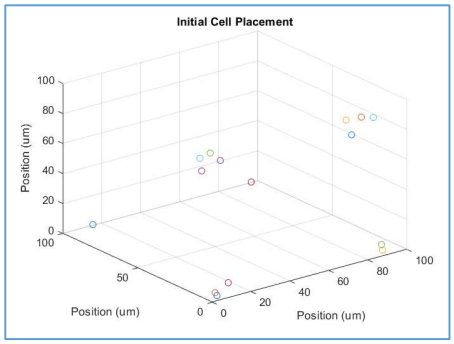


Figure 1: Initial position of 15 cells within the simulation cube.

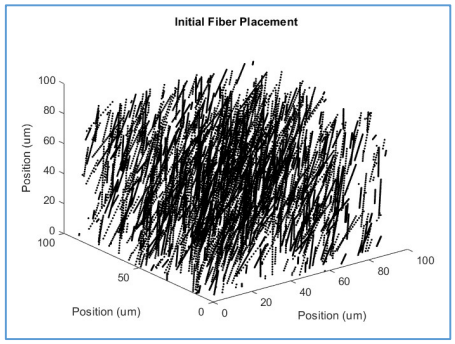


Figure 2: Initial fiber placement with an initial volume fraction of 0.04.

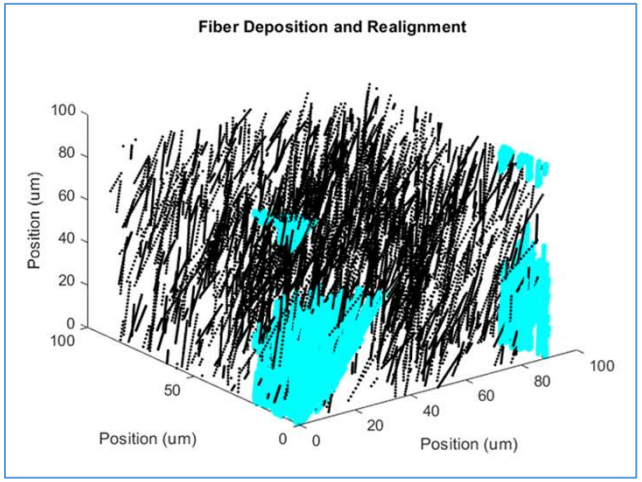


Figure 3: Realigned and deposited fibers (blue) within the simulation cube.

FUTURE WORK

Adding further cell functionalities including proliferation and differentiation

Optimizing parameters

Rerun simulations based off new parameters

CONTACT

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