“Characterizing cellular response to 100% hemp and fibrin-targeting nanoparticle-laden fibrin scaffolds for dermal wound healing”

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Required Prerequisites: Rising sophomores and juniors

Preferred Prerequisites: Wet lab experience (prior undergraduate research or lab-based courses)

Project Summary:

Dermal injuries are one of the common forms of injury. Skin tissue engineering, as well as regenerative medicine, is being extensively studied for improved dermal wound healing. 100% hemp-woven scaffolds are a novel biomaterial with initial studies by the Gluck Lab showing good fibroblast responses in 2D culture. Fibrin-targeting nanoparticle-laden fibrin gels have been extensively studied by the Brown Lab and have also shown positive fibroblast responses and improved dermal healing in vivo. This study will assess the regenerative capability of the two scaffolds containing various somatic and stem cell types through biocompatibility and collagen production, further understanding the potential of the biological scaffolds to improve dermal healing.