DOMINICAN UNIVERSITY of CALIFORNIA

Scholarly & Creative Works Conference

2026

Presenter: Natalie Gomez

Session & Time: Oral V

Room/Time: GUZ 113 / 4:30-5:30

Discipline: Business Administration

Faculty Mentor: Wayne de Fremery

Digital Portfolio URL:

Title: GIE Practicum

Abstract:

A prosthetic limb is the difference between isolation and independence. Yet, for underserved communities, the cost of traditional materials like titanium and carbon fiber makes mobility a luxury and innately very expensive. This project is driven by a personal mission, as I have witnessed my father navigate life with a prosthetic and had an epiphany that the current medical model often prioritizes high-cost engineering and rigidity over widespread accessibility.

By leveraging the principles of innovation, this project explores how 3D printing can disrupt the prosthetic industry and the traditional models that currently exist. Rather than relying on expensive, institutional manufacturing, I propose a shift toward user-centered, scalable platforms that utilize affordable materials such as high-strength polymers.

The core of this work is a conceptual open-source ecosystem, a digital platform where users can scan their limbs via a smartphone, customize their prosthetic needs, and generate 3D-printable files tailored to their exact measurements. Inspired by global â€œmakerâ€ communities, this model moves away from the â€œone size fits allâ€ motif and approach of the past. While formal data collection is ongoing, the project argues that by lowering the barrier to entry through digital tools and low-cost materials, we can bridge the gap in global healthcare and return agency to the individuals who need it most.