

BioAesthetics and Tulane awarded grant to develop new advanced wound-care graft

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BioAesthetics' founder and CEO Nick Pashos, PhD, and Dr. Lisa Morici, PhD, associate professor of microbiology and immunology at Tulane University School of Medicine.

The National Science Foundation has awarded a \$250,000 grant to [BioAesthetics Corp.](#) to develop a new advanced wound-care product for treating bed sores or pressure ulcers. The product will be tested at Tulane University.

The [Small Business Technology Transfer](#) (STTR) Phase I award will fund initial testing and development of a skin graft that combines the company's tissue regeneration technology with infection-fighting drugs to better promote healing.

BioAesthetics' founder and CEO Nick Pashos, PhD, and COO Billy Heim, are both Tulane alumni. BioAesthetics was spawned at Tulane in 2015 to commercialize a pioneering tissue graft Pashos, a Tulane student at the time, developed to regenerate a nipple and areola in breast reconstruction surgery after a mastectomy.

[Lisa Morici](#), PhD, associate professor of microbiology and immunology at Tulane University School of Medicine, will lead testing for the study at Tulane.

Severe bed sores are particularly difficult to heal and primarily affect the elderly or those who are bed-ridden. These pressure ulcers are open wounds on the skin, commonly in bony areas like the hip, back or ankles, caused by prolonged pressure on the skin from staying in the same position. The condition affects more than 2.5 million a year.

Current treatment options involve surgical reconstruction with skin or skin substitute grafts, which can fail to heal the pressure ulcer because of infection or because the graft was not strong enough. The BioAesthetics graft is stronger, releases medication at the surgical site to fight infection, and is designed to accelerate wound healing.

Like the company's product for breast reconstruction, the new graft uses decellularized tissue that acts as a collagen scaffold for new cells to easily grow into as the wound heals.

"The underlying technology of the proposed solution can be used to make novel grafts for treatment of numerous wound types, improving healing and patient quality of life," Pashos said.

Researchers at Tulane will test the acellular biologic graft, which is strengthened with a polymer hydrogel, to see how effectively it releases the medication over a 14-day period. The study will measure the drug release and bioactivity in vitro and, using a mouse model, assess its efficacy against a common antibiotic-resistant bacterium.

“Adding a biocompatible polymer to an acellular biologic graft for therapeutic applications is a unique approach that hasn’t been done before,” Morici said. “The goal is to have a regenerative graft that can also prevent the most common complications during wound healing.”

The National Science Foundation’s STTR program focuses on transforming scientific discovery into products and services with commercial potential and/or societal benefit. Unlike fundamental research, the program supports startups and small businesses in the creation of deep technologies, getting discoveries out of the lab and into the market. BioAesthetics is developing new products for use in reconstructive surgeries through its mission to transform lives through advancements in biomaterials.