# Dossier: EPIBONE, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $74,871.00

**Award Date:** 2024-08-16

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Epibone, Inc. is a biotechnology company pioneering a personalized bone regeneration technology. Their primary business revolves around creating living bone grafts from a patient's own cells, addressing the significant limitations of traditional bone grafting methods which often involve painful harvesting procedures and risk of rejection or infection. Epibone's core mission is to revolutionize bone reconstruction by offering a readily available, anatomically precise, and immunologically compatible bone graft solution for treating skeletal defects, fractures, and other bone-related conditions. Their unique value proposition lies in combining advanced imaging, cell biology, and biomaterial technologies to generate customized bone replacements, significantly improving patient outcomes and reducing the burden on the healthcare system. They aim to replace cadaver bone and synthetic bone graft materials with a living, personalized bone alternative.

**Technology Focus:**

* Epibone utilizes a proprietary "Bone-on-a-Chip" bioreactor system. This system cultivates bone grafts ex vivo, starting with a small sample of the patient's mesenchymal stem cells (MSCs). The MSCs are then seeded onto a 3D scaffold that is custom-designed using a CT scan or MRI of the patient's skeletal defect, ensuring a precise anatomical fit.
* The bioreactor mimics the natural bone-forming environment, providing precise control over nutrient delivery, oxygen levels, and mechanical stimulation, leading to enhanced bone formation within a controlled environment. The bone graft matures for several weeks prior to implantation.

**Recent Developments & Traction:**

* In March 2022, the U.S. Food and Drug Administration (FDA) cleared the company to proceed with a clinical trial evaluating the safety and efficacy of its personalized bone graft technology in patients with critical-sized bone defects.
* In 2023, Epibone presented promising pre-clinical data demonstrating successful bone regeneration in large animal models using their personalized bone graft technology. The data showcased improved bone density and structural integrity compared to control groups.
* No publicly available information regarding funding rounds or government contracts could be found within the last 2-3 years.

**Leadership & Team:**

* Artur Pontes Ames:\*\* CEO. Background in biotechnology and business development with experience in commercializing medical technologies.
* Nina Tandon, PhD:\*\* Co-Founder. Adjunct Professor of Electrical Engineering at Columbia University. Focuses on tissue engineering and regenerative medicine.

**Competitive Landscape:**

* Medtronic:\*\* A large medical technology company offering a variety of bone graft substitutes, including synthetic and allograft options. Epibone differentiates itself by providing a completely personalized, living bone graft derived from the patient's own cells, thereby potentially reducing the risk of rejection and infection.
* Stryker:\*\* Another major player in the orthopedics market, offering various bone graft solutions. Epibone's anatomical precision and elimination of harvesting from other body parts represent a key advantage over Stryker's more conventional offerings.

**Sources:**

1. [https://www.epibone.com/](https://www.epibone.com/)

2. [https://www.prnewswire.com/news-releases/epibone-receives-fda-clearance-for-clinical-trial-evaluating-personalized-bone-graft-technology-301503483.html](https://www.prnewswire.com/news-releases/epibone-receives-fda-clearance-for-clinical-trial-evaluating-personalized-bone-graft-technology-301503483.html)

3. [https://www.linkedin.com/company/epibone-inc-/](https://www.linkedin.com/company/epibone-inc-/) (Used for Leadership & Team verification)