OSTEOGENESIS: METHOD FOR RETENTION OF MEDIA DURING BONE GRAFTING

MEDICAL DEVICES
Implantable bone grafting device that reduces use of metal implants and promotes bone regrowth in the treatment of craniofacial defects.

TECHNOLOGY TYPE
Class I/II
Surgery
Neurology

STAGE OF DEVELOPMENT
- Bench Prototype tested for tensile strength and polymer degradation.
- Animal testing still required.

IP PROTECTION
Nationalized PCT Pending in the United States, Canada, Australia, and Europe
Implantable Bone Grafting Devices, Systems, and Methods US20170027629A1

TECHNOLOGY SUMMARY
Trauma or tumors in the craniofacial region can lead to loss of extended bone structure. Resultant defects in the skull require surgical repair and reshaping using rigid, static, and artificial implant materials. These materials often contribute to stress fracturing and cannot be reshaped as the patient grows, which leads to a high number of revision surgeries. OsteoGenesis is a patient-specific, osteogenic scaffold that is both porous and resorbable. It includes two interlocking plates held together by screws that promote bone regrowth after maxillofacial surgery. Scans obtained using existing imaging techniques are used to print unique PGLA scaffolds that fit the precise needs of each patient. Spacers are used to optimize pore size for maximum particle retention and provide mechanical support. The device is bio-tolerable, preserves functional strength, and facilitates personalized medical treatment, which improves patient outcomes.

FEATURES AND BENEFITS
- Maximizes tissue integration and bone regrowth.
- Promotes Osseo-integration.
- Supports and preserves bone shape.
- Protects soft tissue from diffusion at the implant site.
- Reduces revision surgeries by eliminating the need to remove metal implants.

INVENTOR PROFILE
Barbu Gociman, M.D., Ph.D., Assistant Professor - Plastic Surgery
Matthew Ackerman, Graduate Research Assistant
Vishal Bhola, Graduate Research Assistant
Nate Rhodes, Graduate Research Assistant

DATE UPDATED: 4/4/2018