PerioMag GBR – No More Second Surgeries

**Value Proposition**

PerioMag GBR is a new dental bone grafting technology that **reduces pain and healing time** for patients **AND** **reduces surgical time** for oral surgeons and periodontists.

PerioMag's unique composition delivers these advantages by being **fully and safely degradable**, as well as **osteoconductive**.

This means patients can receive their dental implants faster and avoid the painful GBR device removal surgeries they currently must undergo.

**Market Opportunity**

Each year, in the United States alone:

- **500,000** dental implants are placed
- **300,000** require bone grafting procedures
- **$200 million** in bone grafting products are sold

Not only could PerioMag GBR enter the dental bone grafting market, but the same GBR devices can be used for craniomaxillofacial and orthopedic applications.

**Competitive Landscape**

Currently available GBR devices are either metallic, and require a second removal surgery **OR** are degradable, but lack the mechanical strength necessary to ensure bone healing.

Additionally, currently available GBR devices lack the osteoconductive properties of PerioMag which result in longer bone regeneration time and thus longer overall treatment time.

**Technology**

PerioMag GBR is a bone graft substitute and barrier membrane that combines the healing power of magnesium and the versatility of PLGA. The system is mechanically reinforced, yet fully degradable.

Our novel design and combination of these two materials results in the unique value that PerioMag GBR can deliver to patients and dental providers.

**Stage of Development**

**Bone Grafting Scaffold** – in vivo studies successful

**Barrier Membrane** – prototype development underway

**IP Status**

**Invention Disclosure**

Magnesium Enhanced/Induced Bone Formation

**Provisional Patent Application**

Filed: March 2014

Magnesium/Polymer Composite-Containing Scaffolds to Enhance Tissue Regeneration

**Funding**

- Center for Craniofacial Regeneration
- NSF Revolutionizing Metallic Biomaterials ERC
- Center for Medical Innovation - $12,000
- Pitt Ventures First Gear - $6,000
Andrew Brown, BS

Andrew Brown is a fifth-year Bioengineering PhD Student and one of the lead innovators of the PerioMag GBR platform. Andrew has shown a deep commitment to developing this technology as evidenced by his authorship of an invention disclosure, a *Acta Biomaterialia* publication, a successful Center for Medical Innovation grant and completion of the Pitt Ventures First Gear Program.

Andrew's primary role in PerioMag’s continued development will be the design and evaluation of new barrier membranes. The *in vivo* evaluation of these new materials is funded by CMI and will be performed with the Center for Craniofacial Regeneration's clinical collaborators.

**Education**

PhD, Bioengineering, University of Pittsburgh (in progress)

BS, Bioengineering, University of Pittsburgh

**Publications**


Charles Sfeir, DDS, PhD

Charles Sfeir is an Associate Professor in the Departments of Oral Biology and Bioengineering and the Director of the Center for Craniofacial Regeneration. Dr. Sfeir has been involved in degradable metal research since the founding of the Revolutionizing Metallic Biomaterials Engineering Research Center and has studied bone biology and regeneration throughout his entire research career.

Dr. Sfeir is also a co-innovator of a novel calcium phosphate bone cement and periodontal therapeutics. Dr. Sfeir plans to use his extensive translational research background to oversee PerioMag GBR’s development and pursue additional funding and development resources.

**Education**

PhD, Molecular Biology, Northwestern University

DDS, Dentistry, Universite Louis Pasteur

**Publications and Patents**


