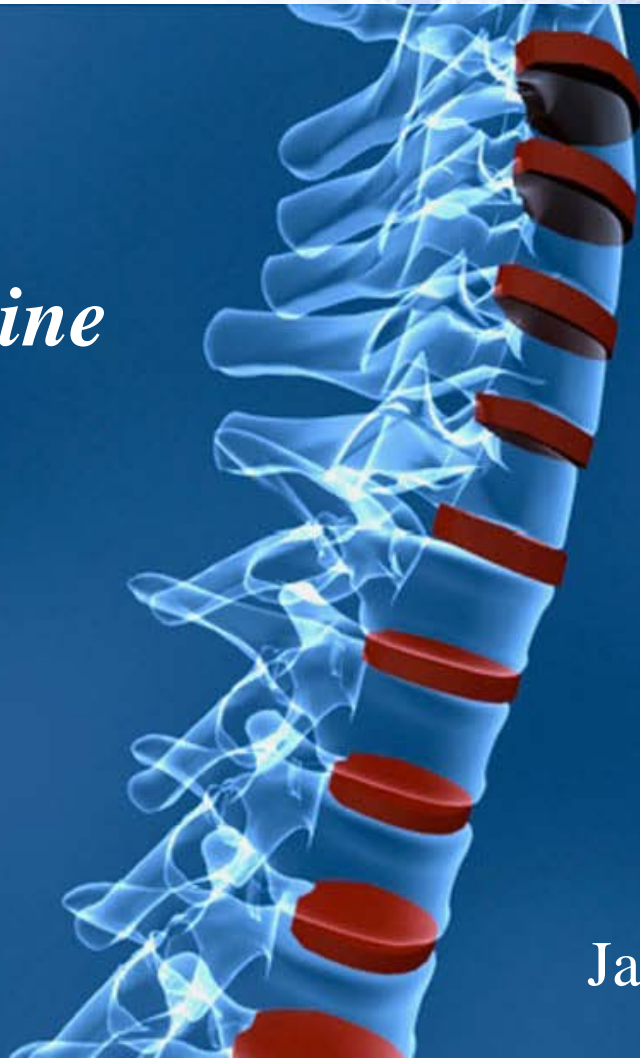




*Regenerative Medicine  
for Bone*



January 2018

# Safe Harbor Statement



This document does not constitute or form part of an invitation or recommendation to subscribe for or purchase any securities. The distribution may be restricted by law in certain jurisdictions and persons into whose possession this document comes should inform themselves about, and observe, any such restriction. Any failure to comply with these restrictions may constitute a violation of the laws of any such jurisdiction. Bone Biologics (“ Bone Biologics”, or “the Company”) shall not have any responsibility for any such violations. Any decision to purchase or subscribe for securities in any offering must be made solely on the basis of the information issued in connection with such offering.

This document was prepared exclusively for the benefit and internal use of investors in order to evaluate the feasibility of a possible transaction or transactions and does not carry any right of publication or disclosure to any other party. This document is incomplete without reference to, and should be viewed solely in conjunction with, the oral briefing provided by Bone Biologics. This presentation may not be used for any other purpose without the prior written consent of Bone Biologics.

In preparing this document we have relied upon and assumed, without independent verification, the accuracy and completeness of all information available from public sources or which was provided to us or otherwise reviewed by us. The information contained in this document has been taken from sources deemed to be reliable. We do not represent that such information is accurate or complete and it should not be relied on as such. Any opinions expressed herein reflect our judgment at this date, all of which are accordingly subject to change.

We have based the forward-looking statements on our current expectations and projections about future events. These forward-looking statements are subject to known and unknown risks, uncertainties and assumptions about us and our affiliate companies with respect to specific factors identified in this presentation and in the Company’s filings with the U.S. Securities Exchange Commission, that may cause our actual results, levels of activity, performance or achievements expressed or implied by such forward-looking statements. Actual results in each case could differ materially from those currently anticipated in such statements.

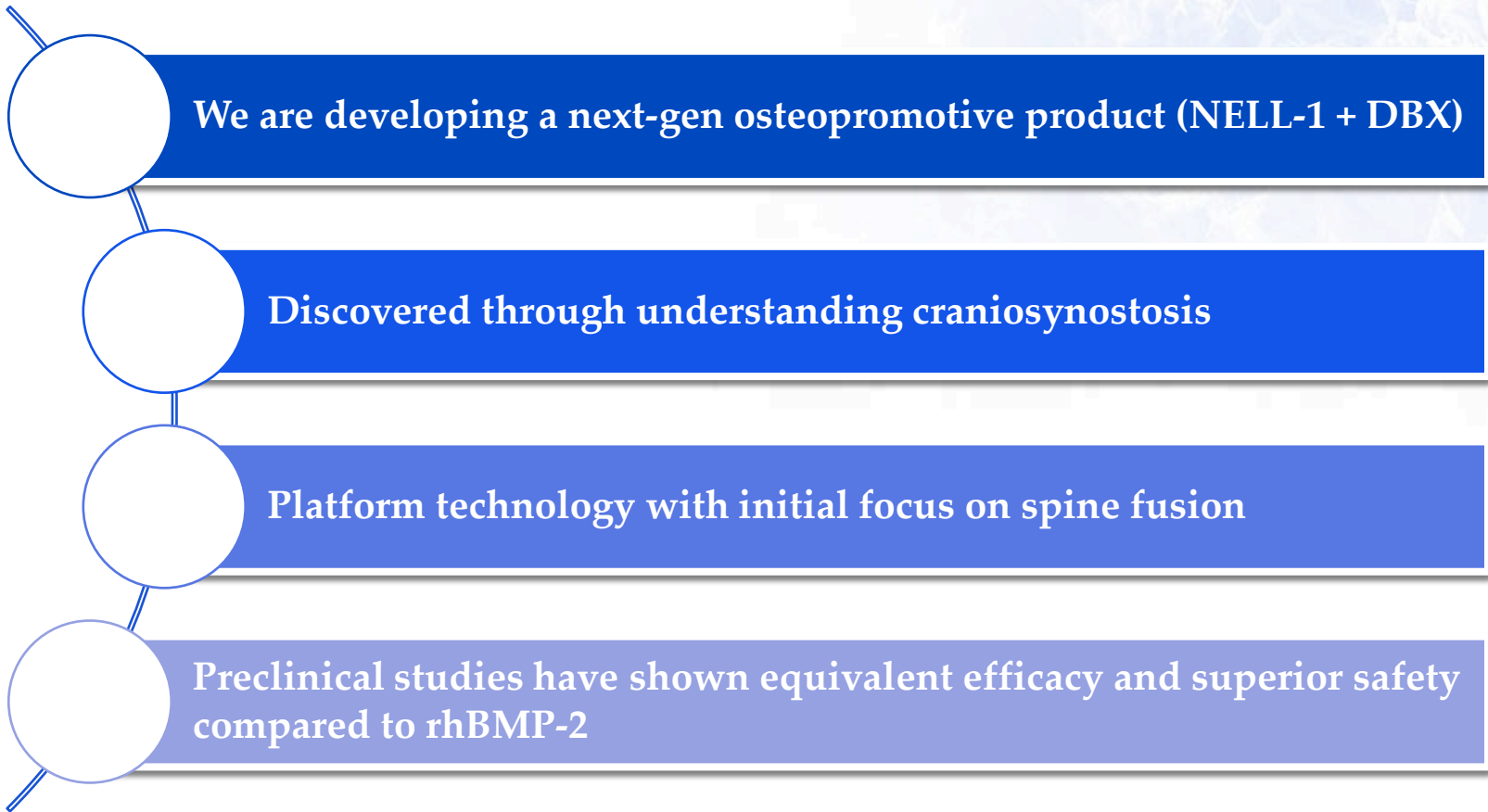
THIS PRESENTATION AND ANY OTHER INFORMATION THAT MAY BE FURNISHED TO PROSPECTIVE INVESTORS BY US) INCLUDES OR MAY INCLUDE CERTAIN STATEMENTS, ESTIMATES AND FORWARD-LOOKING PROJECTIONS OF THE COMPANY WITH RESPECT TO THE ANTICIPATED FUTURE PERFORMANCE OF THE COMPANY. SUCH STATEMENTS, ESTIMATES AND FORWARD-LOOKING PROJECTIONS REFLECT VARIOUS ASSUMPTIONS OF MANAGEMENT THAT MAY OR MAY NOT PROVE TO BE CORRECT AND INVOLVE VARIOUS RISKS AND UNCERTAINTIES.



Bone Biologics is **redefining bone regeneration** with **NELL-1**, a secreted, osteoinductive protein whose expression controls skeletal ossification.

**NELL-1** effectively induces bone formation across small and large animal models either via local implantation or intravenous delivery

# A Potential Breakthrough in Bone Regeneration



## A major challenge in orthopedic surgery is effective bone regeneration

### Challenges w/ rhBMPs

- Rapid bone growth (egg shelling)
- Cysts & less dense bone formation
- Not target-specific – will grow where bone is not present
- Swelling and intense inflammatory response in off label use

### NELL-1 Solution

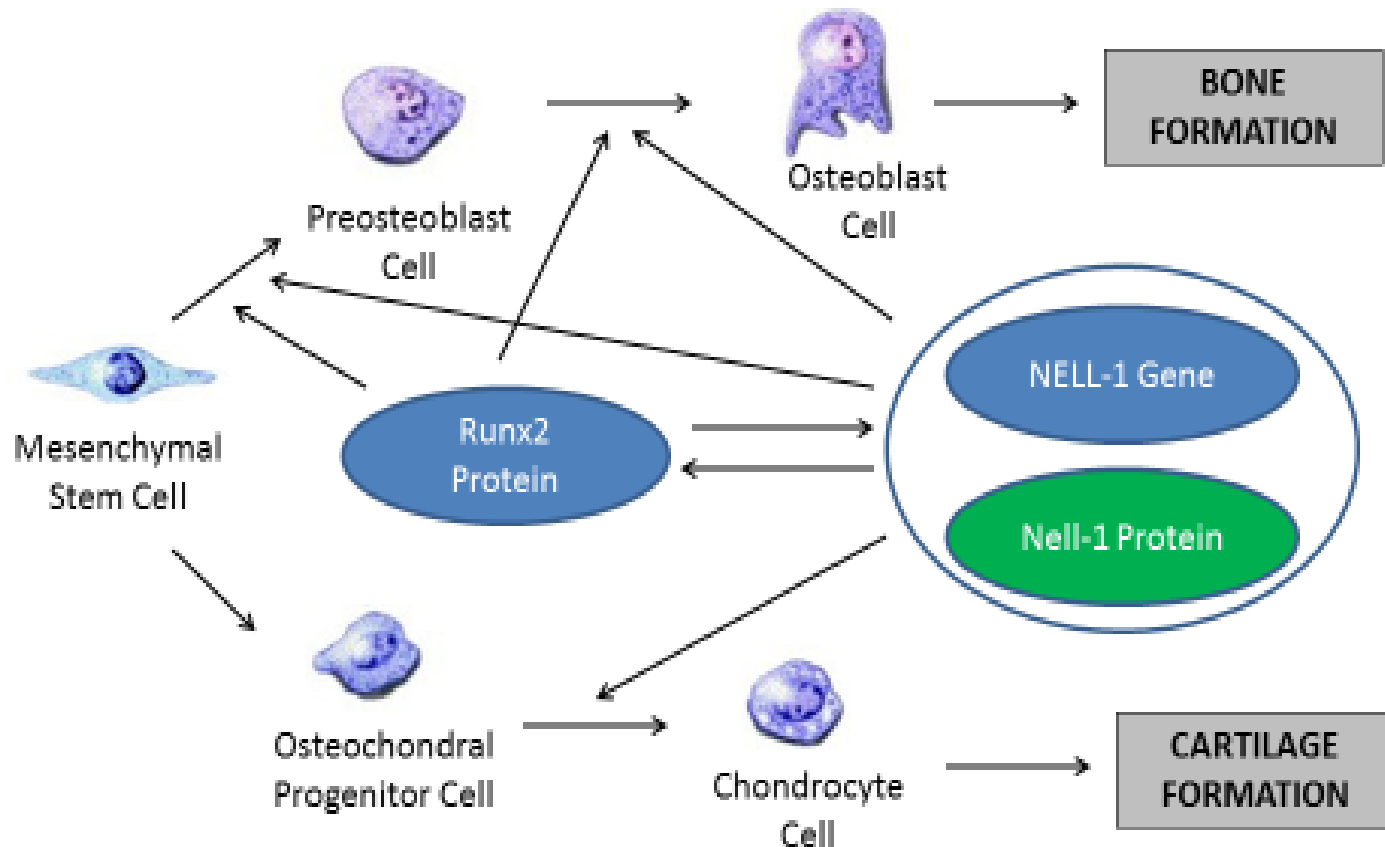
- Rapid / healthy bone growth
- Forms bone in target specific fashion without inducing inflammation and poor bone formation
- Cannot initiate bone formation in muscle
- Can stimulate induced BMSCs to form bone in a rodent muscle pouch
- Exhibits specificity that BMPs lack

# NELL-1 Product Pipeline



Clinical Indication	Discovery	Pre-Clinical	Phase I	Phase II	Phase III
Spine Fusion	→				
Trauma	→				
Osteoporosis	→				

# NELL-1 Mechanism of Action



- ✓ Runx2 Protein is known as the “Master Switch” responsible for bone formation
- ✓ BBC’s NELL-1 Protein helps committed cells grow better bone or cartilage (depending upon cell type)
- ✓ rhBMP-2 targets many cells ---- May lead to tissue formation in undesirable anatomical locations

# More Than 45 Publications on NELL-1







**Clinically relevant sheep study demonstrated that rhNELL-1 increases the fusion rate and quantity of bone compared to sDBX**

Result	Fusion Rate (uCT)	New Bone Vol (uCT)	New Bone Area (Histo Morph)	Bone Strength (Biomech)
rhNELL-1 Better than Control (sDBX)	✓	✓	✓	✓

# Strong IP Barrier



## ❖ 15 issued patents with more than 175 claims covering:

- ❖ Molecular Structure - Composition
- ❖ Manufacturing Process - NELL-1 protein expressed in mammalian & other systems
- ❖ Field of Use – Use for promoting bone growth

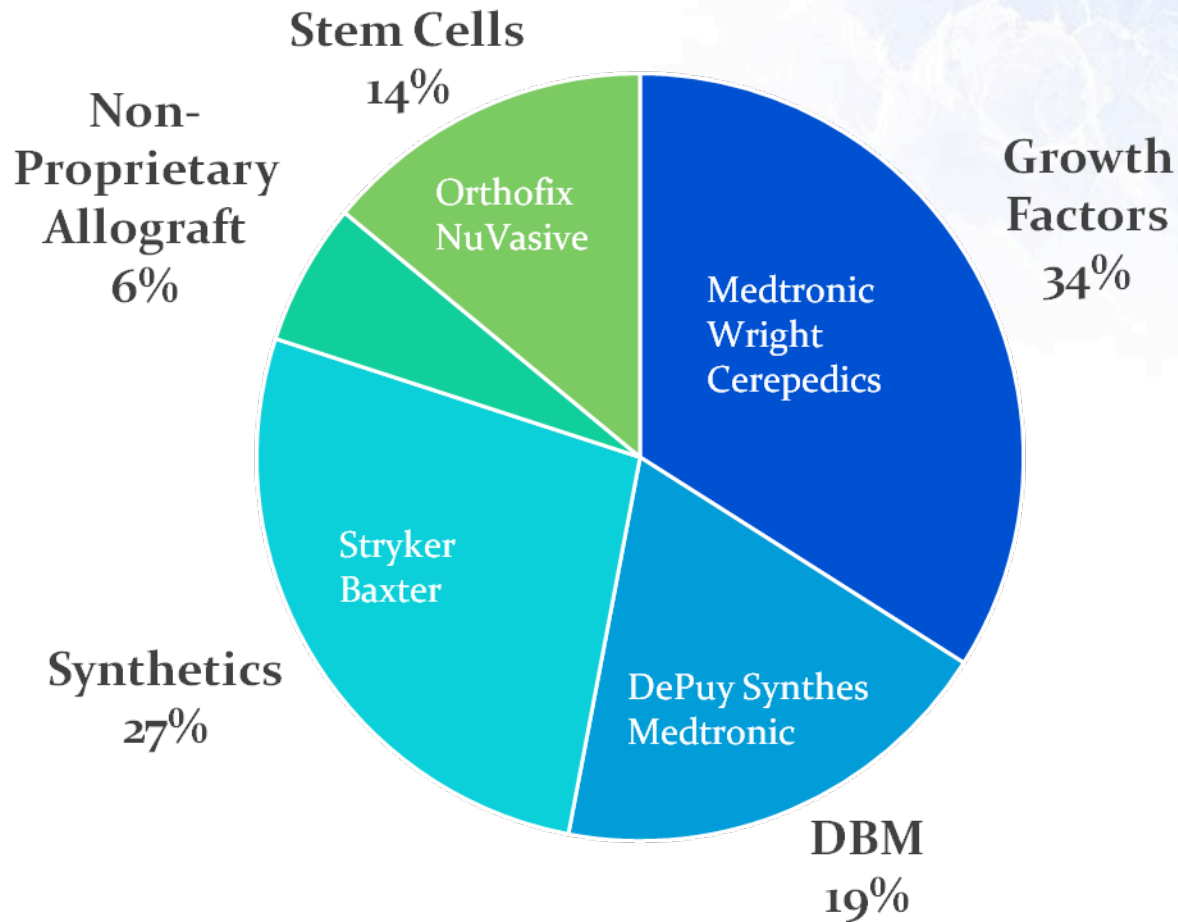
## ❖ Exclusive license to NELL-1 technology from UCLA for spine, trauma, and osteoporosis

Patent No.	Title	Issued
U.S. Patent No. 9,511,115	Pharmaceutical compositions for treating or preventing bone conditions	12/6/2016
U.S. Patent No. 7,052,856	NELL-1 enhanced bone mineralization	5/30/2006
U.S. Patent No. 7,544,486	NELL peptide expression systems and bone formation activity of NELL peptide	6/9/2009
U.S. Patent No. 7,687,462	Composition for promoting cartilage formation or repair comprising a NELL gene product and method of treating cartilage-related conditions using such composition	3/30/2010
U.S. Patent No. 7,691,607	Expression system of NELL peptide	4/6/2010
U.S. Patent No. 7,776,361	NELL-1 enhanced bone mineralization	8/17/2010
U.S. Patent No. 7,807,787	NELL-1 Peptide	10/5/2010
U.S. Patent No. 7,833,968	Pharmaceutical compositions for treating or preventing bone conditions	11/16/2010
U.S. Patent No. 7,884,066	NELL-1 enhanced bone mineralization	2/8/2011
U.S. Patent No. 8,044,026	Composition for promoting cartilage formation or repair comprising a NELL gene product and method of treating cartilage related conditions using such composition	10/25/2011
U.S. Patent No. 8,048,646	NELL peptide expression systems and bone formation activity of NELL peptide	11/1/2011
U.S. Patent No. 8,053,412	NELL-1 peptides	11/8/2011
U.S. Patent No. 8,207,120	NELL-1 enhanced bone mineralization	6/26/2012
U.S. Patent No. 9,598,480	Recombinant NEL-like (NELL) protein production	3/21/2017
U.S. Patent No. 9,447,155	Isoform NELL-1 peptide	9/20/2016

# Total Addressable Market



The global orthobiologic bone replacement market is approximately \$3 billion (\$1.7B of which is U.S. based), and is expected to grow roughly 6% a year over the next five years.



# Key Metrics



## History

- September 19, 2014 – Reversed merge into shell corp.
- March 31, 2016 – Commenced trading on OTC QB

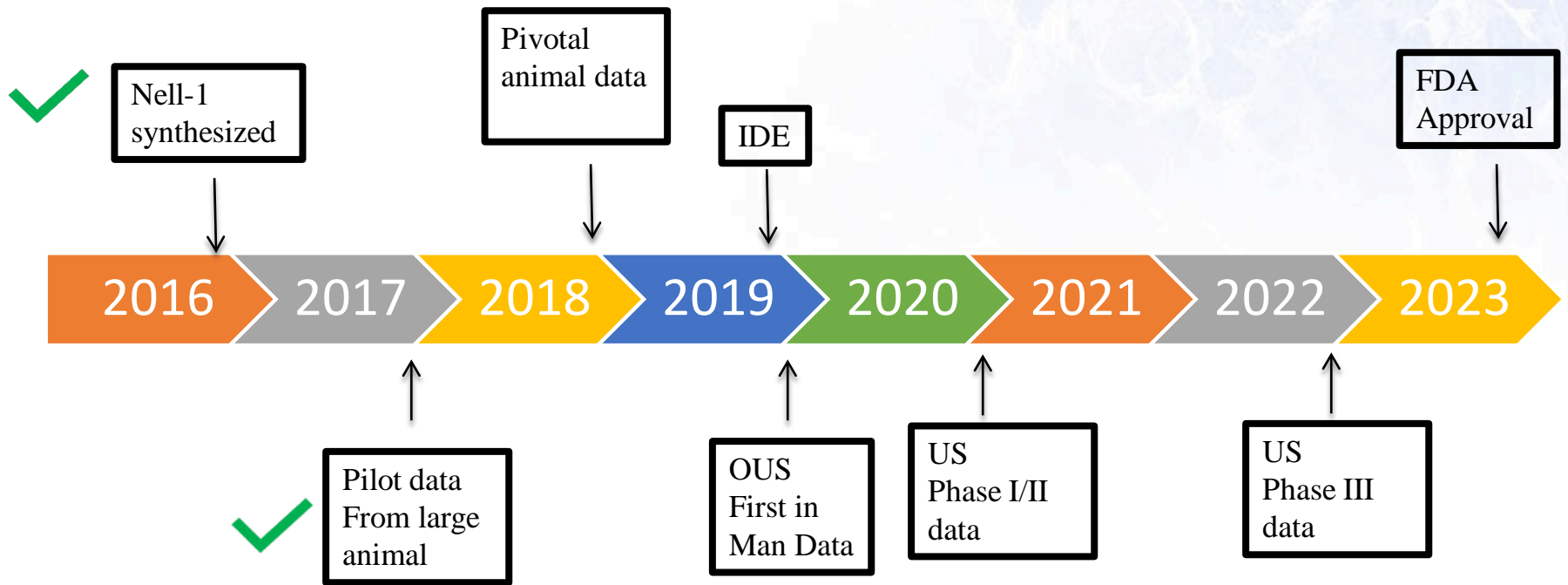
## Financial Metrics

- ~43M shares o/s
- Raised \$23M to date
- Company needs \$15M to complete Phase I
- Cash B/E ~\$41M

## Market Metrics

- ~500K lumbar spine fusions WW
- Multibillion market opportunity for spine indication
- BBC 5yr revenue estimate >\$400M (40% market penetration)

# Product Development Milestones



# Value Proposition to Stakeholders



## Payors

- 15,000 people turn 65 everyday in America
- More ortho procedures and therapy increase costs
- Safer treatment --- less complications
- Fewer reoperations

## Patients

- More companies offering high-deductible health insurance
- Consumers becoming more selective
- Demand better care

## Physicians

- Improved clinical outcomes will see physicians/health systems drive utilization
- Established market and reimbursement

# Management Team



## **Stephen La Neve, CEO and President**

- CEO and President Life Science Enterprises
- CEO and President, Etek Corp
- President, Becton Dickinson's Pre-Analytical Systems
- President, Medtronic Spine and Biologics
- Executive VP, Premier



## **Jeffrey Frelick, COO**

- COO Life Science Enterprises
- 15 yrs. Med-Tech analyst, Canaccord, ThinkEquity, Lazard, Leerink
- Consultant, Boston Biomedical Consultants
- Regional Sales Mgr., Becton Dickinson PCD
- Laboratory Technologist, Clinical Pathology Facility



## **Deina Walsh, CPA, Chief Financial Officer**

- Former partner in EFP Rotenberg LLP.
- Certified Public Accountant
- Accounting and financial functions, SEC reporting, pre and post-IPO compliance, SOX, regulatory compliance, internal controls. Debt and equity financings, and M&A.



## **Dr. Scott Boden, Chief Medical Advisor**

- Professor of Orthopedic Surgery at Emory University School of Medicine
- Director of Emory Orthopedics & Spine Center
- Vice Chair of Orthopedics, CMO/CQO of The Emory University Orthopedics & Spine Hospital
- Emory Healthcare Physician Director of Strategy and Development for Orthopedics & Spine Programs



## **Bruce Stroever**

*Chairman of the Board Bone Biologics / CEO Musculoskeletal Transplant Foundation*

Mr. Stroever has served as Chairman of Bone Biologics since 2012 and over forty years of experience in medical devices and orthopedics. He is currently the President and CEO of MTF, where he joined in 1988 as General Manager. He previously held several positions at Johnson & Johnson's Ethicon division. He received his B.E. in Mechanical/Chemical Engineering from Stevens Institute of Technology and Masters of Science in Bioengineering from Columbia University.

## **John Booth**

*CEO Spineology Inc.*

Mr. Booth has been CEO of Spineology since 2004. He previously held executive level positions at Phillips Plastic Corp, and INCSTAR Corp. as well as various financial and general management roles in the medical technology industry. Mr. Booth received a B.S. in accounting from Villanova and a MBA from Seton Hall.

## **Jimmy Delshad**

*Former Mayor and Councilman of Beverly Hills, CA*

Mr. Delshad brings more than ten years of elected public service to Bone Biologics. Prior to public office Mr. Delshad was founder and CEO of American International Business for over 20 years, a manufacturer computer storage technologies. Mr. Delshad received B.S. in Computer Science from California State University.

## **Bret Hankey**

*President of Hankey Group*

Mr. Hankey brings more than 15 years of operating and board director experience to the BBLG board. Since 2000, Mr. Hankey has served in various capacities within the Hankey Group where he currently serves as President and is a member of the board of directors on all seven operating companies specializing primarily in the automotive, finance, technology, real estate and insurance industries.

## **Steve La Neve**

*CEO and President of Bone Biologics*

Mr. La Neve brings 30 years of health care experience and leadership to Bone Biologics. Previously Mr. La Neve was CEO of Life Science Enterprises, and ETEX Corp. while holding divisional president roles at Medtronic and Becton Dickinson. He holds a B.S. in Health Planning from Penn State University and an MBA West Chester University.



# Building an Orthobiologic Leader



## Opportunity

- A multibillion market opportunity with very good growth characteristics

## Technology

- Nell-1 functions specifically and selectively on target cells in the osteochondrogenic lineage

## Pipeline

- Additional products beyond spine, that include hard tissue local & systemic

## Business

- A lean, virtual business model with leading strategic partners, vendors, and contractors

## Foundation

- Strong technology discovered at UCLA coupled with seasoned Med-Tech management team



2 Burlington Woods Dr, Suite 100  
Burlington, MA 01803  
781-552-4452

[www.bonebiologics.com](http://www.bonebiologics.com)

OTC QB: BBLG