InVivo Therapeutics

Symbol: NVIV.OB

Investor Presentation 2012

Safe Harbor Statement

InVivo THERAPEUTICS
Symbol: NVIV

This presentation contains "forward-looking statements" as that term is defined in the Private Securities Litigation Reform Act of 1995. These statements are based on management's current expectations and involve risks and uncertainties, which may cause results to differ materially from those set forth in the statements. The forward-looking statements may include statements regarding product development, product potential or financial performance. No forward- looking statement can be guaranteed and actual results may differ materially from those projected. InVivo Therapeutics undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events, or otherwise. Forward-looking statements in this presentation should be evaluated together with the many uncertainties that affect InVivo's business, particularly those mentioned in the risk factors and cautionary statements in the Company’s filings with the Securities and Exchange Commission. Forward-looking statements represent management's current expectations and are inherently uncertain. We do not undertake any obligation to update forward-looking statements made by us.

Introduction

InVivo Therapeutics
Symbol: NVIV

Developer of polymer-based medical devices for the repair of spinal cord tissue	• Founded in 2005 • Headquartered in Cambridge, MA
Platform technologies represent groundbreaking approach to the treatment of spinal cord injuries (SCI)	• Currently no successful treatment options for SCI patients • Developing first and only treatments to address the underlying pathology of SCI
3 phase development strategy focused on speed to market and expansion of products and application	• Pursuing near-term launch of human pilot study, • Will create new paradigm of care, addressing both acute and chronic injury • $10+ billion global market potential for acute SCI alone
Key scientific and medical community backing	• Partnerships with M.I.T., Harvard Medical School, Children's Hospital Boston, Geisinger Health System, New England Baptist Hospital, Washington Brain and Spine Institute

Leadership Team

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George Nolen
Former President and CEO of Siemens,
Board of Directors, Lead Director

Richard Roberts, PhD
1993 Nobel Laureate
Medicine & Physiology
Board of Directors
Scientific Advisory Board

Christi Pedra
Sr. VP, Strategic New Business Development & Marketing, Siemens Healthcare USA
Board of Directors

Adam Stern
Sr. Managing Director,
Spencer Trask Ventures.

Frank Reynolds
Chairman and CEO
Co-Founder

Dr. Robert Langer, ScD
Co-Founder
Scientific Advisory Board

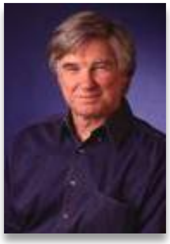
Eric Woodard, MD
Chief Medical Officer
Scientific Advisory Board

Ed Wirth, Ph.D., MD
Chief Science Officer
Scientific Advisory Board

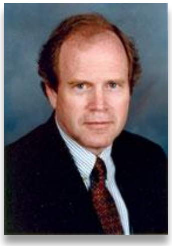
Jonathan Slotkin, MD
Medical Director
Scientific Advisory Board

Todd Albert, MD
Scientific Advisory Board

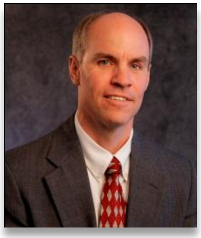
V. Reggie Edgerton, PhD
Scientific Advisory Board



David Feigal
Former Head of FDA Center for Devices & Biologics
Business Advisory Board



Rick Layer, PhD
Manager
Research & Development



Regulatory Submission Timeline

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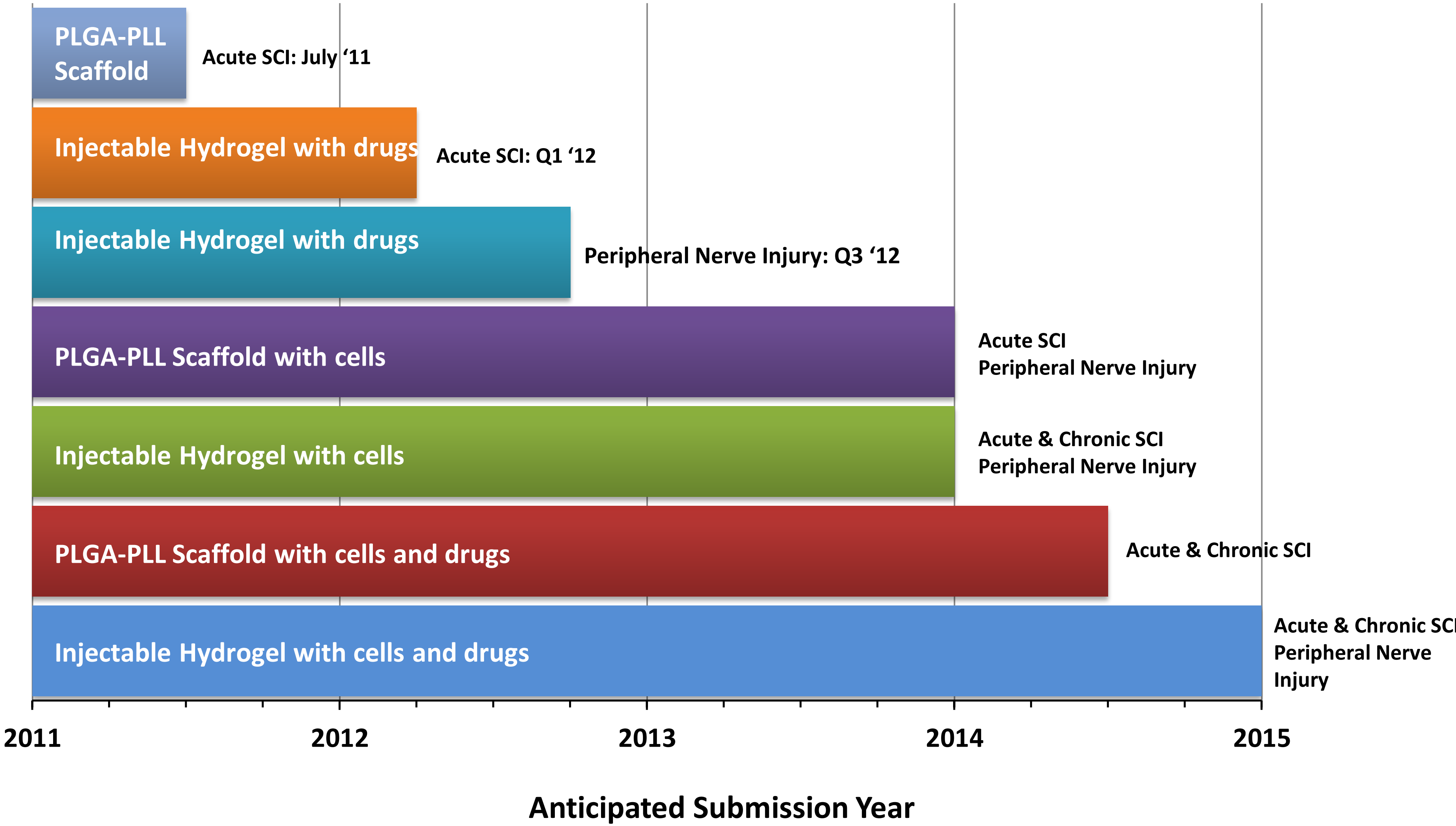

Defeating Secondary Injury

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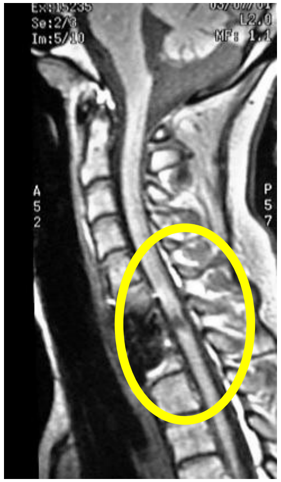
Secondary Injury → Bleeding → Inflammation → Scarring → Loss of Motor Control and Sensory Function

[An animation shows the advancement of secondary injury in an open wound spinal cord injury from a penetrating injury such as a bullet wound. Results in scar tissue formation.]

[An animation shows the advancement of secondary injury in a closed wound spinal cord injury from a contusion such as a car accident. Results in scar tissue formation.]



http://www.cordtalk.org/

C6 - C7 Injury

Objective of Intervention

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Support **neuroplasticity**: Spare **10%** of spinal cord tissue to allow patients to recover function
→ Intervene before secondary injury causes permanent paralysis (therapeutic window)

[An animation shows the current standard of care for an open wound injury to decompress and stabilize the spinal cord. No intervention to the spinal cord itself is performed and the spinal cord tissue become scar tissue. Animation then shows InVivo's procedure to implant a scaffold into the open wound to prevent the spinal cord tissue from dying.]

[An animation shows the current standard of care for a closed wound or contusion injury to decompress and stabilize the spinal cord. No intervention to the spinal cord itself is performed and the spinal cord tissue become scar tissue. Animation then shows InVivo's procedure to implant a scaffold using a Touhy needle injected into a closed wound to prevent the cord tissue from dying.]

Device Customization

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[Device customization and implantation is completed in one minute and four seconds. Video from pilot non-human primate study shows Dr. Eric Woodard, Chief Medical Officer, customizing the scaffold in the operating room with a scalpel. The scaffold is then implanted into the spinal cord of an African Green Monkey (AGM). Approximately fifteen seconds after implantation the scaffold is shown absorbing the fluid inside the cord and changing color to match the surrounding tissue. Demonstrates the ability of the device to absorb fluids in the spinal cord.]

Injectable Surgical Intervention

[An animation shows the short procedure during which InVivo's injectable hydrogel is guided by x-ray to, and injected into, the injury site. This technology provides a minimally invasive alternative to the scaffold and will be well suited for patients with additional injuries such as collapsed lungs or brain injuries. The hydrogel has been designed to time-release drugs based on the advancement of inflammation to mitigate inflammatory response.]

Implanting Scaffolds in Non-Human Primates

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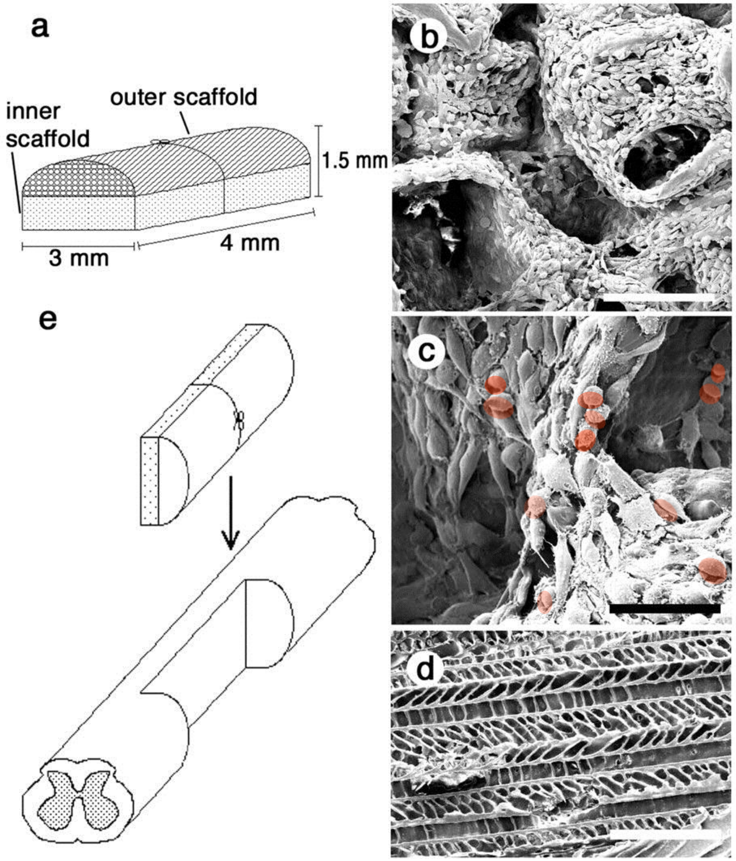
[Video shows Dr. Eric Woodard, Chief Medical Officer, and Dr. Jonathan Slotkin, Medical Director, during surgical implantation of InVivo's scaffold into the spinal cord of an AGM.]

[Figure (a) shows the scaffold design. Figure (b) shows stem cells attached to the scaffold under electron microscope. Figure (c) shows a higher magnification. Figure (d) shows the channels running through the scaffold allowing healthy tissue to be bridged. Figure (e) depicts the Brown-Sequard injury model resulting from the removal of 50% of the cord.]



Pilot Study: AGM Stem Cell Day 2

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Scaffold w hNSC Y430

[This technology intended for chronic SCI patients. Video shows AGM **two days post injury** and treatment. This animal received a **scaffold implanted with human neural stem cells** after 50% of tissue was removed from a section of the spinal cord. There is no evidence of functional recovery as the monkey moves around in an ambulation chamber.]

Pilot Study: AGM Stem Cell Week 5

Scaffold w hNSC Y430

[Video shows the same AGM **five weeks** after receiving a **scaffold with human neural stem cells.** The AGM is walking with its spinal column parallel to the floor. This study was the first successful non-human primate study for traumatic SCI. Five different treatment arms have shown a therapeutic effect including the scaffold no drugs or cells, the scaffold with growth factors, the scaffold with low dose human neural stem cells, the scaffold with high dose human neural stem cells, and an injectable hydrogel with steroids.]

Pilot Study: AGM Scaffold Day 2

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Control

[Video shows AGM **two days post injury** where the animal **received no treatment** after 50% of the tissue from a section of the spinal cord was removed**.** The animal demonstrates Brown-Sequard syndrome; the left leg has no function, and the right leg functions properly.]

Scaffold w No Drugs/Cells

[First product to market. Video shows AGM **two days post injury** where the animal **received InVivo's scaffold without drugs or cells** after 50% of the tissue from a section of the spinal cord was removed. The animal also demonstrates Brown-Sequard syndrome. The two animals appear to function similarly.

Pilot Study: AGM Scaffold Week 2

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Control

[Video shows AGM **two weeks post injury** where the animal received **no treatment** after 50% of the tissue from a section of the spinal cord was removed. The animal demonstrates Brown-Sequard syndrome; the left leg has no function, and the right leg functions properly.]

Scaffold w No Drugs/Cells

[Video shows AGM **two weeks post injury** where the animal received **InVivo's scaffold without drugs or cells**. The animal runs and the previously paralyzed left leg has regained function.]

2^{nd} Primate Study: AGM Week 12

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R123 Control

[Video shows AGM **twelve weeks post injury** (received **no treatment** after 50% of the tissue from a section of the spinal cord was removed). The animal demonstrates Brown-Sequard syndrome; the left leg has no function, and the right leg functions properly.]

R090 Scaffold

[Video shows AGM **twelve weeks post injury** (received the **scaffold without drugs or cells** after 50% of the tissue from a section of the spinal cord was removed). Wireless EMG and Kinematic technologies were added to the second study protocol to monitor electrical activity in the muscles in the legs of the animals. The animal runs on a treadmill demonstrating the left leg has regained function.]

2nd Primate Study: AGM Week 12

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R123 Control

[Video shows AGM 12 slides **twelve weeks post injury** (received **no treatment** after 50% of the spinal cord was removed). The animal demonstrates Brown-Sequard syndrome; the left leg has no function, and the right leg functions properly.]

X957 Hydrogel

[Video shows AGM **twelve weeks post injury** (received the **injectable hydrogel technology** after 50% of the tissue from a section of the spinal cord was removed). Wireless EMG and Kinematic technologies were added to the second study protocol to monitor electrical activity in the muscles in the legs of the animals. The animal runs on a treadmill demonstrating the left leg has regained function.]

EMG Analysis

[Split screen video shows AGM running on a treadmill on the left, and wireless EMG data being processed on the right. The data is synchronized with the animal running. Dr. Gregorie Courtine of the University of Zurich is responsible for processing EMG and kinematic data for InVivo and will present it to the FDA on the company's behalf. Dr. Courtine has published a definitive paper in *Nature* on the value of non-human primate data in advancing rodent data to humans.]

Glial Scarring and Astrogliosis

Glial Fibrillary Acidic Protein (GFAP) Immunolabeling

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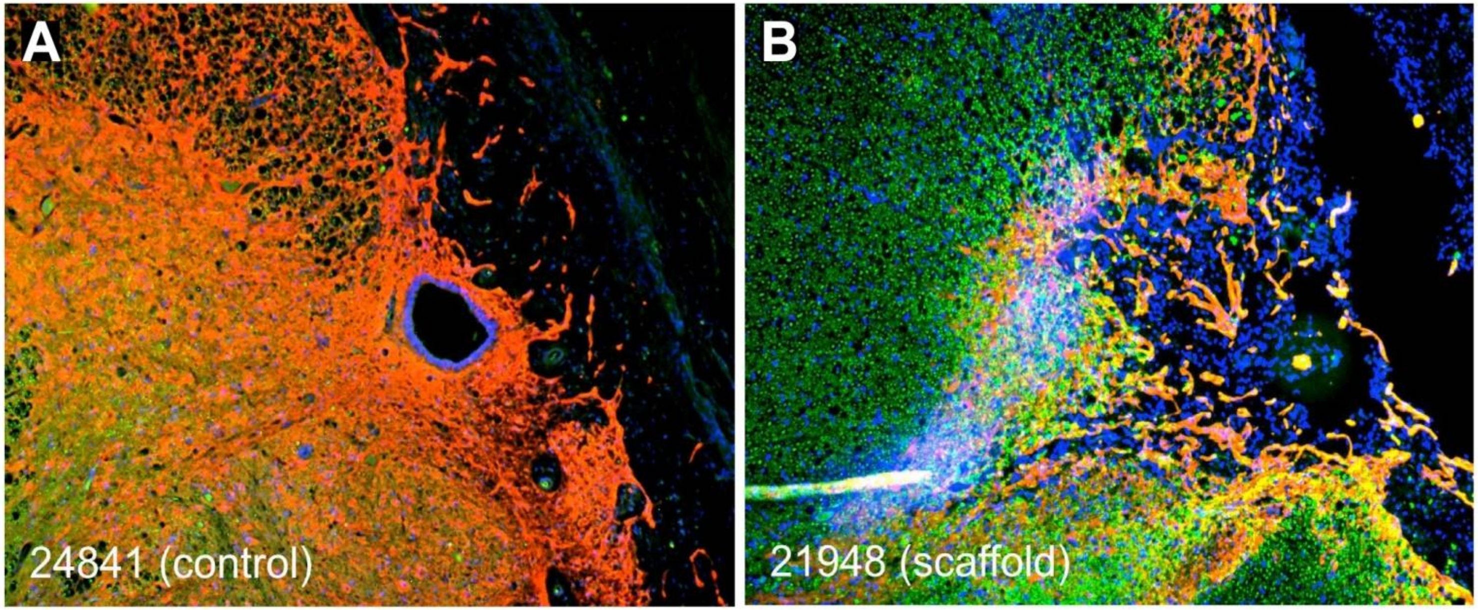

GFAP (red) and neurofilament (green) immunoreactivity in cross-sections of Macaca Mulatta monkey spinal cords near lesion center following hemi-section surgical injuries. Cell nuclei labeled with DAPI (blue).

A) Extensive astrogliosis (red) throughout the tissue near the midline in a control primate. The central canal was preserved (blue).
B) Central portion of the lesion in a scaffold-treated primate, showing reduced gliosis compared to controls restricted to lesion border.

‘09 Data Confirm ‘08 Pilot Primate Data

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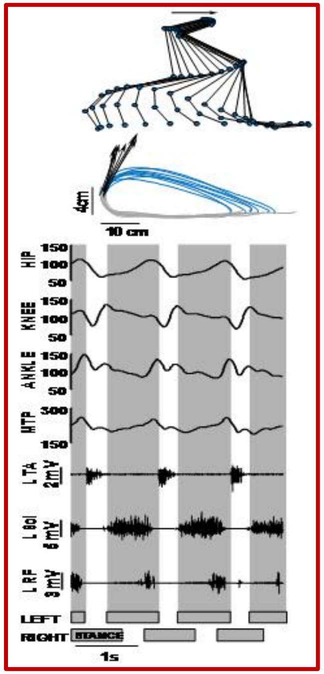
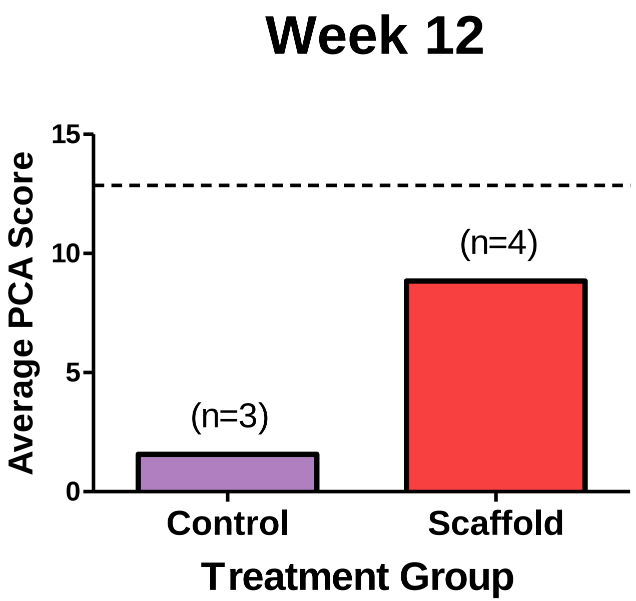
from Nature Neuroscience

Individual Data



Typical representation of individual kinematic, EMG, and gait parameters from a single primate.

Principal Component Analysis (PCA)



Principal component analysis (PCA; see Courtine, G., *et al.*, Nat Neurosci 12:1333-1342, 2009) was applied to 149 quantified kinematic, EMG and gait parameters. Resulting PCA scores were used to compare treatment groups. The dashed line represents the average pre-lesion PCA scores. Higher PCA scores signify greater recovery.

Replication by Academic Researchers

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Comparison of polymer scaffolds in rat spinal cord: A step toward quantitative assessment of combinatorial approaches to spinal cord repair

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Bing K ... ski,[2]

Therapeutic Biomaterials, University of Utah, Salt Lake City, Utah

Anticipated FDA Clinical Study

- **Human Pilot Study**
  - Mid 2012, FDA Meeting April 12, 2012
  - 10 acute contusion SCI patients
  - Clinical Sites:
    - Harvard Brigham & Women's in Boston
    - Geisinger Health System in Pennsylvania
  - Rehabilitation: The Shepherd Center, Atlanta
  - One year follow-up
- **Human Pivotal Study**
  - To be conducted if requested
  - 30 acute contusion SCI patients

IP & Manufacturing

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Exclusive, world-wide license from Children's Medical Center Corporation and MIT

- Covers the use of a wide range of biopolymers to treat SCI, and to promote the survival and proliferation of human stem cells in the spinal cord.
- 10 issued and 4 pending US patents
- 67 issued and 34 international pending patents

Opened new manufacturing and development facility to support first human clinical trial

- Raw materials for first device product readily available from FDA-cleared suppliers
- Proprietary manufacturing processes will include 46 3D printing and batch processes to create the scaffolds.

Go-To-Market Strategy

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- Ease of market penetration
  - **80% of SCIs treated in only 75 Level I Trauma Centers in US**
- No need to strategically license to reach our market
- Forecasted price $60,000/unit
  - Could exceed $100,000⁺/unit
- Direct sales force: ~20 for entire USA
- Fast early adoption by spine surgeons
- Compliments current standard of care with one surgery
- In-house manufacturing of FDA-approved materials
- Results in gross margins ~85⁺%

Market Stats

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Trading Symbol	NVIV
Stock Price	$2.79
Exchange	OTC. BB
Market Cap	$150M
Outstanding Shares	53.7M
Approx. Float	28.6M
Inside Ownership	45%
52 Week Range	$0.60-$3.23
Burn Rate	$520,000/month
Information as of January 3rd , 2012	

NVIV Stock Price Outperformed Peers StemCells Inc., Geron & Neuralstem, Inc.

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Cost Effective Business Model

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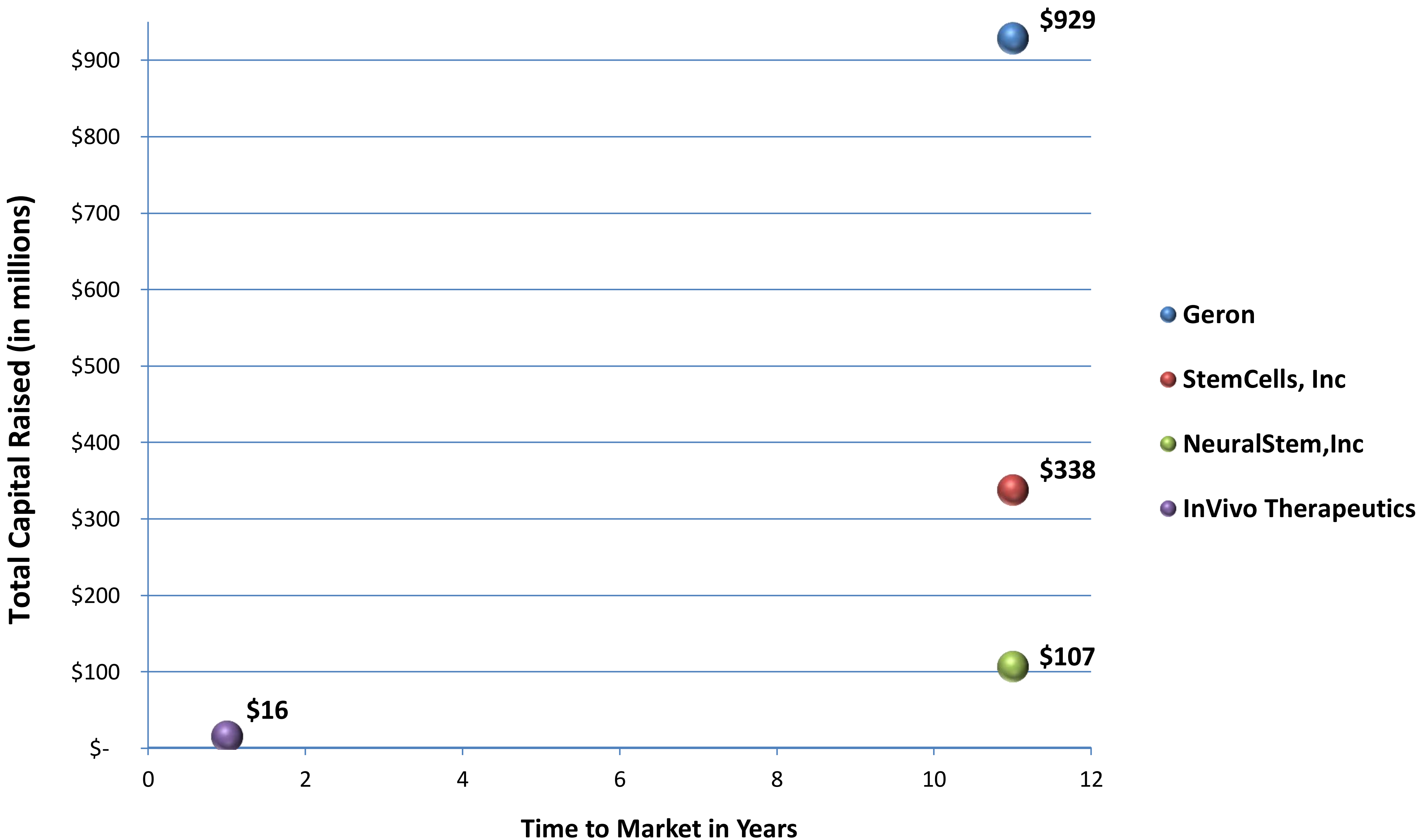

Milestones

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- ✓ Filed IDE for biopolymer scaffolding: July 2011
- ✓ 2011 Apple Award from American Spinal Injury Assoc.
- ✓ Expanded Patent to Peripheral Nerves, Prostate, Retina, and Brain
- ✓ Announce primate data: Q4 2011
- Determine regulatory pathway for hydrogel + steroidal drug: Q1 2012
- Begin 10 patient pilot enrollment for scaffold: Mid 2012
- File IDE for Peripheral Nerve Injection: Q3 2012
- Complete Pre-Clinical Sloan Kettering Prostate Study Q3 2012

Summary

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Near-Term Value Creating Milestones Will Drive Shareholder Value

- Pilot human trial approval and human clinical results in 2012
- Second Product based on our hydrogel to be filed with FDA in 2012
- Potential for revenue generation by 2013

Acute SCI Represents a $10+ Billon Untapped Market Opportunity

- No products today will effectively treat a spinal cord injury

Efficient Go-to -Market Strategy Generates High Profits for InVivo Shareholders

- 80% of SCI patients are treated at the top 75 Level One Trauma Centers
- Small sales force of ~20 will provide sales coverage for the US Market.
- Gross margins approaching 90%

InVivo Has a Robust Platform Technology and Product Pipeline

- Injectable hydrogel: time released drug delivery for back pain, prostate nerve, SCI
- Biopolymer scaffoldings seeded with cellular therapies to treat chronic SCI

"NVIV" with a $150 Million Market Cap has Significant Upside Potential

- Acorda -$985 million market cap

InVivo
THERAPEUTICS

InVivo Therapeutics Holdings Corp.

Stock Symbol: NVIV.OB