AxoGen® Nerve Regeneration

SURGICAL SOLUTIONS FOR NERVE RECONSTRUCTION

As of September 30, 2016

CORPORATE PRESENTATION

NASDAQ: AXGN

Safe Harbor Statement

This Presentation contains “forward-looking” statements as defined in the Private Securities Litigation Reform Act of 1995. These statements are based on management’s current expectations or predictions of future conditions, events or results based on various assumptions and management’s estimates of trends and economic factors in the markets in which we are active, as well as our business plans. Words such as “expects”, “anticipates”, “intends”, “plans”, “believes”, “seeks”, “estimates”, “projects”, “forecasts”, “may”, “should”, variations of such words and similar expressions are intended to identify such forward-looking statements. The forward-looking statements may include, without limitation, statements regarding product development, product potential, regulatory environment, sales and marketing strategies, capital resources or operating performance.

The forward-looking statements are subject to risks and uncertainties, which may cause results to differ materially from those set forth herein. Forward-looking statements in this presentation should be evaluated together with the many uncertainties that affect the Company’s business and its market, particularly those discussed in the risk factors and cautionary statements in the Company’s filings with the Securities and Exchange Commission. Forward-looking statements are not guarantees of future performance, and actual results may differ materially from those projected. The forward-looking statements are representative only as of the date they are made, and the Company assumes no responsibility to update any forward-looking statements, whether as a result of new information, future events or otherwise.

AxoGen Overview

AxoGen is the pre-eminent nerve repair company Redefining standards for nerve repair and protection

- Exclusive focus on peripheral nerve repair and protection solutions
- Comprehensive product portfolio addresses 900,000 procedures, $1.6B+ billion market opportunity
- "Five Pillar" growth strategy has delivered 23 consecutive quarters of YOY double-digit growth
  - 2015 Revenue $27.3M, 63% growth vs 2014
  - Q3 2016 Revenue $11.2M, 37% growth vs Q3 2015
  - YTD 2016 Revenue $29.7M, 52% growth vs YTD 2015
  - High gross margins 82.4% 2015 and 84.4% YTD 2016
  - Pro Forma Sept 30, 2016 Cash $31.7M
- Solid balance sheet provides resources to execute business plan
- Significant barriers to competitive entry including a growing body of clinical data
- Strong management team with track record of commercial success
- Expansion opportunities beyond current markets

Providing Options for Surgeons & Patients

Nerve injuries can happen to anyone

- More than 1.4 million Americans will experience a nerve injury each year, nearly 900,000 will require a surgical intervention[1,2]

AxoGen Patient Story: Jajuan

- 10 year old aspiring football player & video game lover
- Laceration in hand caused loss of sensation and numbness
- Nerve and tendon injury repaired by Dr. Joshua Abzug, Baltimore, MD
- Nerve gap bridged with Avance® Nerve Graft
- Sensory recovery underway

1 National Hospital Ambulatory Medical Care Survey 2008
2 Noble, et al., "Analysis of Upper and Lower Extremity Peripheral Nerve Injuries in a Population of Patients with Multiple Injuries", Journal of Trauma, Vol 45, 2008

Need for Options in Nerve Repair

Nerves are Injured in Many Ways

Causes of Nerve Injuries

- Lacerations, power tool / saw accidents, motor vehicle accidents, battle field injuries, gunshot wounds, natural/other disasters
- Surgical injuries
- Nerve compression: Carpal & cubital tunnel revision, blunt trauma, previous surgery

AxoGen Patient Story: Anna

- College student and athlete having routine wisdom tooth removal
- Lingual nerve severed during procedure resulting in numbness of tongue
- Repaired by Dr. Shahrokh Bagheri, Atlanta, GA and protected with AxoGuard® Nerve Protector
- Sensory recovery underway

Need for Options in Nerve Repair

Peripheral Nerve Injuries Impact Quality of Life

Impact of Peripheral Nerve Injuries

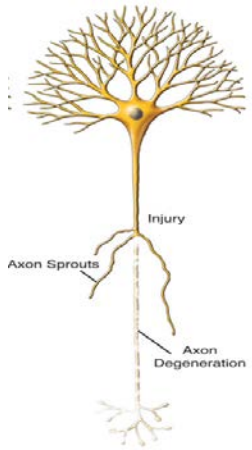
- Pain – chronic, stabbing, radiating, debilitating
- Numbness and Loss of Sensation
- Partial or Full Loss of Movement

AxoGen Patient Story: Frankie

- 12 year old male, injured in an ATV rollover
- 7+cm defect in ulnar nerve
- Parents did not want risk of comorbidities associated with autograft repair
- Repaired with Avance® Nerve Graft & 2 AxoGuard® Nerve Connectors
- Return of fine motor skills in fingers underway, planning to join the military

Peripheral Nerves & Goals of Repair

Peripheral Nerves are Capable of Regeneration with Appropriate Guidance & Protection



Example of axonal regeneration after injury

Cross section of a peripheral nerve illustrating the nerve bundles containing individual axons

Peripheral Nerves provide the pathways for both motor and sensory signals between the central nervous system and target organs, regulating movement and sensation.

Goals of repair

- Restore muscle function and sensation
- Prevent neuroma / chronic pain

Successful nerve regeneration requires

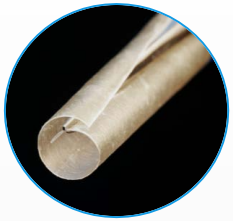
- Scaffold to direct, support growth
- No tension on the repair site
- Protection from soft tissue attachments

The AxoGen Family of Products

Comprehensive portfolio of peripheral nerve products

Avance® Nerve Graft

AxoGuard® NerveConnector



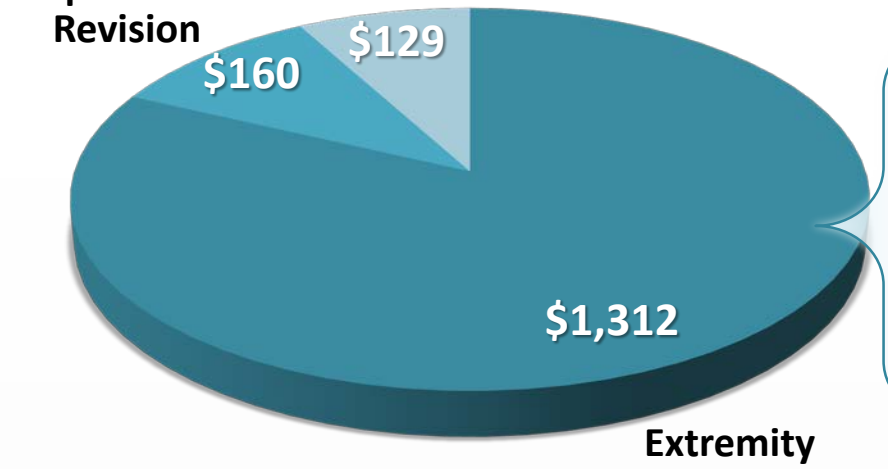
AxoGuard® NerveProtector

AcroVal™ Neurosensory & Motor Testing System

Currently Targeted Nerve Markets (US)

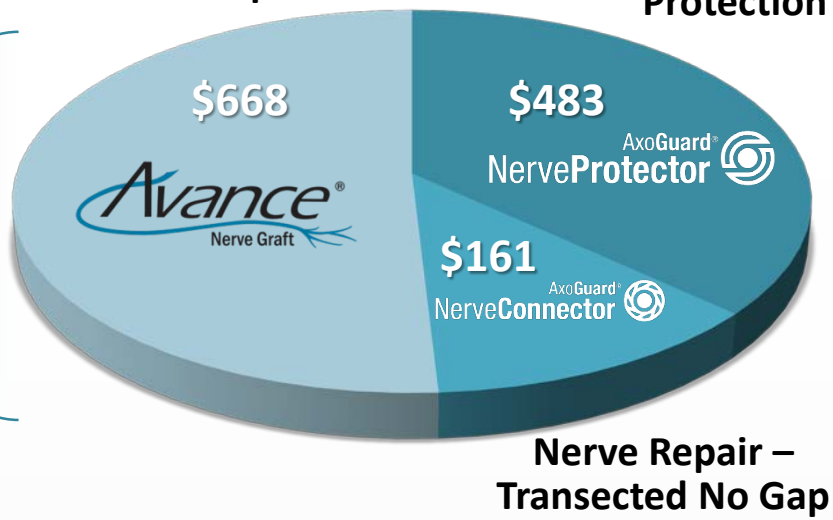
AxoGen Current Target Markets
$1.6 billion[1]

In millions



Extremity Market
$1.3 billion[1]

In millions



Approximately 900K Procedures Annually in US:

Extremity	**719,000[2]**
Carpal Tunnel	**100,000[3]**
Oral	**68,000[4]**

1. Market sizes are an estimate of AxoGen based upon the number of nerve repair procedures it believes are performed and applying its average sales price to the particular procedure for which an AxoGen product could be used.
2. Noble, J et al, "Analysis of Upper and Lower Extremity Peripheral Nerve Injuries in a Population of Patient with Multiple Injuries"; The Journal of Trauma: Injury, Infection, and Critical Care Vol. 45. No. 1 (2008) - National Hospital Ambulatory Medical Care Survey: 2008 Emergency Department Summary Tables – "Analysis of the Peripheral Nerve Repair Market in the United States"; Kurt Brattain, MD, Magellan Medical Technology Consultants, Inc., Minneapolis, Minnesota.
3. University of Maryland Medical Center, Carpal Tunnel Syndrome – Surgery.
4. The Prophylactic Extraction of Third Molars: A Public Health Hazard: Jay W. Friedman, DDS, Health Policy and Ethics; Peer Reviewed; Friedman American Journal of Public Health; September 2007, Vol 97, No. 9, pp 1554 – 1559 – Journal of Oral Implantology, Vol. XXXVI/No. Five/2010; "Inferior Alveolar Nerve Injury in Implant Dentistry: Diagnosis, Causes, Prevention, and Management"; Ahmed Ali Alhassani, BDS - "Nerve Injuries after Dental Injection: A Review of the Literature"; Clinical practice, July/August 2006, Vol. 72, No. 6, Miller H. Smith, BMedSc, DDS; Kevin E. Lung, BSc, DDS, MSc, FRCD(C).

Strong Competitive Barriers

IP and Unique Regulatory Framework

- Avance® Nerve Graft
  - 6 issued U.S. patents; 4 pending U.S. patent applications; 3 issued international patents and 8 pending international patent applications
  - Regulatory path US: Biologic Transition Process
    - November 2010: Enforcement Discretion letter from FDA allowing continued sales under controls applicable to HCT/P with agreed transition plan to Biologic Product under a Biologic License Application (BLA)
    - BLA requires a phase III clinical trial; SPA approved by FDA; enrollment underway
  - Regulatory path ex-US: Country by country
    - Registration completed in in Canada, Austria, United Kingdom, Israel, Greece, Denmark, Taiwan, Switzerland and certain other countries.[1]

- AxoGuard® Nerve Connector & AxoGuard® Nerve Protector
  - US FDA 510(k) Clearance, CE Mark and Health Canada Approval
  - Patents held by Cook Biotech, AxoGen exclusive WW license for nerve

1. Pursuant to individual country's regulations, Avance® Nerve Graft may not require registration and be available for sale in one or more countries not listed here.

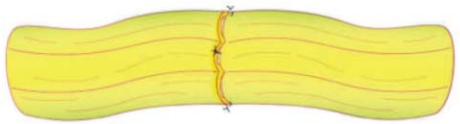
Traditional Repair Options Are Not Optimal

Transected Nerves

Suture

Direct suture repair of no-gap injuries

- Common repair method
- May result in tension to the repair leading to ischemia
- Concentrates sutures at the coaptation site



Autograft

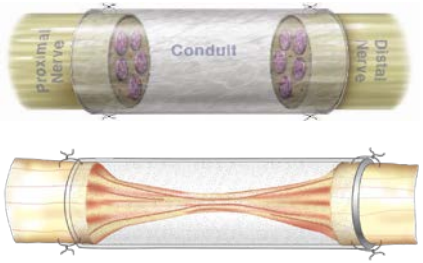
Traditional "Gold Standard" despite several disadvantages

- Secondary surgery
- Loss of function & sensation at harvest site
- 27% complication rate including infection, wound healing and chronic pain[1]
- Limited availability of graft length & diameter

Hollow-Tubes

Convenient off the shelf option; limited efficacy and use

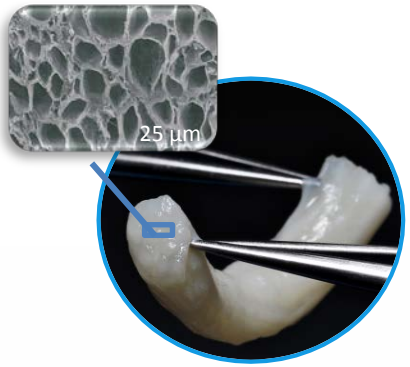
- Provides only gross direction for re-growth
- Limited to small gaps
- 34%-57% failure rate >5mm gaps[2]
- Semi-rigid and opaque material limits use & visualization
- Repair reliant on fibrin clot formation



1. *Rappaport ,et al., Am J Surg 1993*
2. *Weber, et al., Plas and Recon Surg 2000, Wangensteen et al., Hand 2009*

AxoGen Solutions Offer Advantages

Avance® Nerve Graft

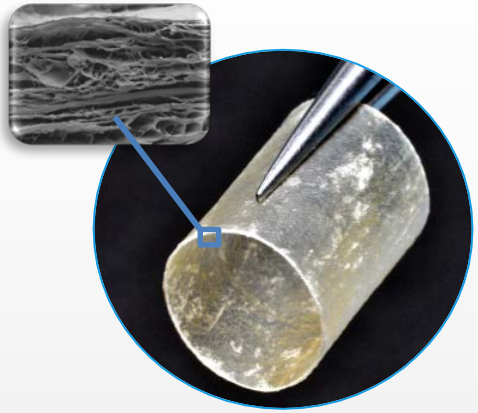


Nerve Repair for Transected Nerves

Processed human nerve allograft for bridging nerve gaps

- Clinically studied off-the-shelf alternative
  - 87% meaningful recovery in sensory, mixed and motor nerve gaps in multi-center study [1]
  - Eliminates need for an additional surgical site & risks of donor nerve harvest [1]
  - Can reduce OR time
- Structural support for regenerating axons
  - Cleansed and decellularized extracellular matrix (ECM)
  - Offers the benefits of human peripheral nerve micro-architecture & handling
- Revascularizes and remodels into patient's own tissue similar to autologous nerve [2]
- Available in a variety lengths (up to 70mm) and diameters (up to 5mm)

AxoGuard® NerveConnector



Only minimally processed porcine ECM for connector-assisted coaptation

- Alternative to direct suture repair
  - Can reduce surgery time by as much as 40% [3]
  - Reduces the risk of forced fascicular mismatch [7]
- Alleviates tension at critical zone of regeneration
  - Disperses tension across repair site [8]
  - Moves suture inflammation away from coaptation face [3]
- Revascularizes and remodels into patient's own tissue [4,5,6,9]

1.Brooks Miscrosurg.2012;32:1-85
2.Whitlock Muscle & Nerve, 2009;6:787-799
3. Boechstyns, Jhand Surg. 2013;38:2405-2411
4. Badylak, et al., 1998, J Biomater Sci Polym Ed 9(8):863-878.
5.Hodde, et al., 2007, J Mater Sci Mater Med 18(4):545-550.
6.Nihsen, et al., 2008, Adv Skin Wound Care 21(10):479-486.
7. Brushart Exp Neurol. 1987;97:289-300
8. Schmidhammer J Trauma. 2004;56(3):571-583
9. Data on file at AxoGen, Inc.

Value Matters

Avance® Nerve Graft delivers a compelling economic value proposition to hospitals

- Reimbursement coding and coverage is in place for nerve repair & grafting
  - Medicare reimbursement ranges from $11,460 - $22,660 [8]
  - No separate reimbursement for the autograft harvest
- Reduces overall procedure costs [1,2,3,4,5]
  - Eliminates cost of additional OR time required for autograft nerve harvest; saves 30-90 minutes in procedure time
  - May save $3,200 to $9,500 per procedure
  - May allow the use of cheaper local or regional anesthesia versus general anesthesia
- Prevent costs associated with potential complications from nerve autograft procedure [6,7]
  - Avoid costs to treat Surgical Site Infections at harvest site, may exceed $20,000 per case
  - Eliminate costs of increased hospitalization due to SSI, 9.7 days on average
- Increase OR efficiency
  - May increase time available for additional OR procedures; Typical large hospital may gain 6-18 days of available OR time[1,2,3,4,9]

1. Intra-Service times based on median intra-service times for CPT codes (64885-6, 64890-93, 64895-98, 64910-64911) provided by Center for Medicare and Medicaid Services, Physician Fee Schedule
2. Cost per minute of OR time based on published rate of OR costs in 2013 and 2014.
3. Center for Medicare and Medicaid Services, Physician Fee Schedule, Regulation # CMS-1590-FC, 2013
4. Date on file at AxoGen
5. Brattain Kurt, Analysis of the Peripheral Nerve Repair Market in the United States, Magellan Medical Technology Consultants, Inc. 2013.
6. De Lissovoy G, et al. Surgical site infect: Incidence and Impact on hospital utilization and treatment costs , Am J Infect control. 2009 June:37(5):387-397
7. Shepard J. et al., Financial Impact of Surgical Site Infections on Hospitals: The Hospital management Perspective. JAMA Surg. 2013;148(10):907-914.
8. Hospital IDC-10-CM 2016, Volumes 1, 2 &3. American Medical Association, Chicago, IL for MS-DRG 40, 41, 42
9. Days OR time saved based on analysis of data (Magellan Medical Technology and AxoGen® Internal Data) and based on average of 8 and 12 hour days

Traditional Protection Options Are Not Optimal

Compressed and Transected Nerves

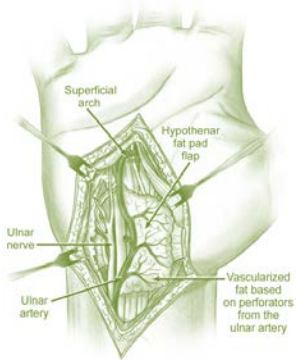
Vein Wrapping
Autologous vein

- Barrier to attachment to surrounding tissue
- Requires extra time and skill to perform spiral wrapping technique
- Second surgical site

Sotereanos DG, et al., Microsurgery 1995

Hypothenar Fat Pad Flap
Autologous vascularized flap

- Barrier to attachment to surrounding tissue
- Only wraps part of the nerve circumference
- Increases procedure time



Lippincott and Williams

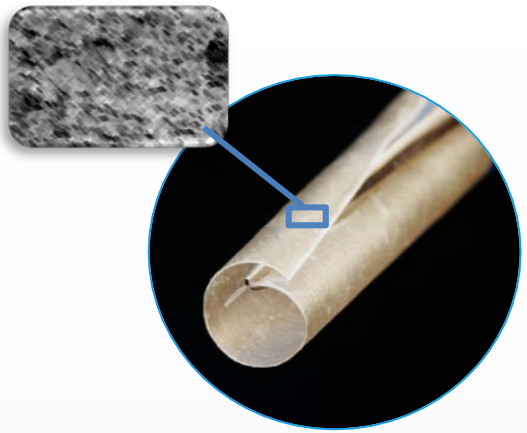
Collagen Wraps
Off –the-shelf

- Semi-rigid material limits use
- Degrades over time and does not provide a lasting barrier to soft tissue attachments

AxoGen Solutions Offer Advantages

Nerve Protection for Compressed & Transected Nerves

AxoGuard® NerveProtector



Minimally processed porcine extracellular matrix for wrapping and protecting injured peripheral nerve

- Protects repair site from surrounding tissue
  - Minimizes soft tissue attachments [1]
  - Allows for diffusion of nutrients through the material [2]
- Allows nerve gliding
  - Minimizes risk of entrapment [1]
  - Creates a barrier between repair and surrounding tissue bed [1]
- ECM revascularizes and remodels into patient's own tissue, does not degrade [2, 3, 4,5]
- Easy to use
  - Semi-translucent to allows visualization of underlying nerve
  - Conforms to nerve

1.Kokkalis, J Recon MicroSurg.2011;27(1):19-28
2. Nihsen, et al., 2008, Adv Skin Wound Care 21(10):479-486
3.Badylak, et al., 1998, J Biomater Sci Polym Ed 9(8):863-878.
4. Hodde, et al., 2007, J Mater Sci Mater Med 18(4):545-550.
5.Data on file at AxoGen, Inc.

AxoGen®

Expansion of Nerve Repair Product Portfolio

Nerve Evaluation for Peripheral Nerve Injuries

AcroVal™ Neurosensory & Motor Testing System

A nerve function evaluation system designed for the measurement, mapping, and monitoring of patients with peripheral nerve injuries and conditions consisting of three accessory devices:

- Pressure Specified Sensory Device™ / PSSD™
  - Patented, first-in-class somatosensory measurement device combines nerve density assessment with pressure threshold sensitivity. Measures both 1-point and 2-point discrimination and the pressure applied.
- AcroGrip™ Device
  - Hand grip strength measurement measures the total strength of the hand, including the ulnar and radial forces
- AcroPinch™ Device
  - Measures the pinch force of a patient's fingers

AxoTouch™ Two-Point Discriminator

Measurement tool to assist in detecting changes in sensation, assessing return of sensory function, establishing effective treatment interventions, and providing feedback to the patients.

- Set of two aluminum discs
- Two point discrimination between 2 to 15 mm apart
- Additional 20 and 25 mm spacing is also provided

Pioneering Sales & Marketing Strategy

Strong Momentum and Growth

5 PILLAR APPROACH FOR DRIVING BUSINESS RESULTS

- **Build Market Awareness**
- **Educate Surgeons, Develop Advocates**
- **Grow Body of Clinical Evidence**
- **Execute Sales Plan**
- **Expand Product Pipeline & Markets**

Build Market Awareness

Focus on building awareness among Surgeons, Patients & Investors

- Participate in Major Clinical Conferences
  - Technical exhibits
  - Podium presentations
  - Sponsored surgeon panels
- Promote Awareness Among Patients
  - AxoGen Patient Ambassador Program
  - Launched “Find A Nerve Surgeon” Locator on Website
- Garner Positive Media Attention
  - Local and National television, radio and print

Educate Surgeons & Develop Advocates

Increased emphasis on education & hands-on training

- AxoGen Professional Education Program
  - Educate on "best practices" of nerve repair
  - Local Grand Rounds, handling labs and fellow education
  - Nerve Matters™ – Online surgeon forum for sharing cases and techniques
- Surgeon Advocacy and Speakers' Bureau
  - National and International Key Opinion Leaders
  - Data presentations, panel events and publications

Conducted 9 National Courses in 2015
13 National Courses planned for 2016

"The course was an outstanding experience! Definitely one of the best hands-on practical courses I have taken. It will have a direct impact on the way that I treat certain clinical problems."

Ignatius Roger, MD, New York Hospital Queens (NY Presbyterian)
Plastic & Reconstructive Surgery, Hand Surgery
Attended AxoGen Best Practices Nerve Course for Upper Extremity Nerves

Grow Body of Clinical Evidence

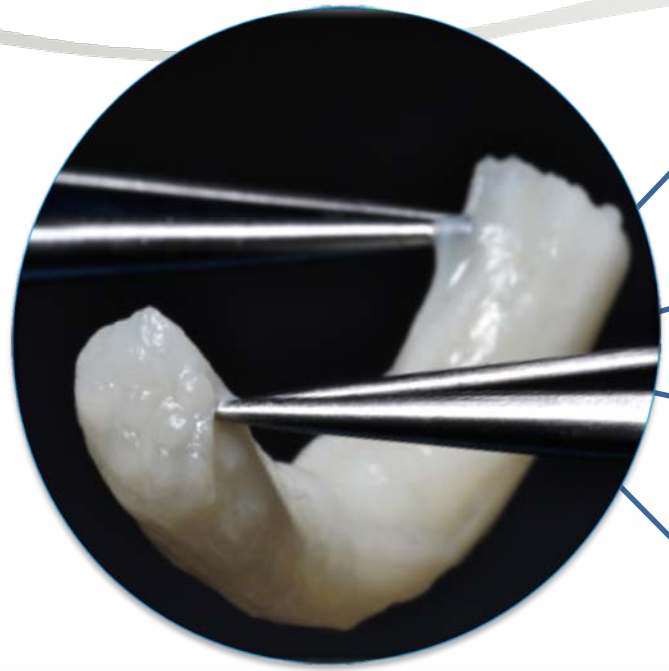
Strong commitment to developing clinical evidence

- **RANGER® Study – Avance® Nerve Graft On-going registry study**
  - The largest multi-center clinical study in peripheral nerve repair, over 1,000 Avance® nerve repairs enrolled to date
  - Meaningful recovery rates of 84-87%; comparable to autograft outcomes
  - 4 peer reviewed publications, referenced over 220 times, 50 clinical conference presentations
- **CHANGE Study – Completed, published *HAND* Jan 2016**
  - Prospective, randomized study comparing Avance® Nerve Graft to hollow tube repairs in digital injuries 5mm to 20 mm
  - Pilot study for Avance® Nerve Graft IND Study for Biological License Application (BLA)
  - Showed statistically significant difference between the treatment groups
- **Prostate Surgery Study – Completed, pending publication**
  - Pilot study on cavernous nerve reconstruction with Avance® Nerve Graft following prostatectomy
  - Demonstrated technical feasibility and promising ability of nerve repair to restore erectile function and reduce incontinence
- **RECON Study – Enrollment initiated**
  - Prospective, randomized study of Avance® Nerve Graft controlled vs hollow-tubes in digital injuries 5 to 25mm
  - IND Pivotal Study to support BLA Submission

Growing Body of Clinical Evidence

*Total number for the portfolio of surgical implant products. Certain publications contain data on multiple products.

Comparison to Historical Literature



87%† Overall Return of Function

90%α Return of Sensory Function

86%α Return of Motor Function

Safe†,α Safe and No Donor Site Morbidity

Study	n	Gap (mm)	Nerve Injury	Repair Technique	Successful Repair
MATCH® Controlα	34	10-30	Sensory	Conduit	48%
Chiriac et al.	16	2-25	Sensory	Neurolac™	44%
Haug et al.	35	5-26	Sensory	NeuraGen®	40%
Taras et al.	22	5-17	Sensory	NeuraGen®	72%
Chiriac et al.	12	2-25	Motor	Neurolac™	8%
MATCH® ControlΩ	13	10-60	Motor	Autograft	71%
Kallio et al.	85	<50	Sensory	Autograft	67%
Frykman and Gramyk	111	<50	Sensory	Autograft	78%
Kim and Kline	118	<50	Motor	Autograft	75%
Vastamaki et al	14	≤ 35	Motor	Autograft	57%

MATCH Registry Controls and available reference papers for adult upper extremity nerve injuries with mean gaps between 10 mm and 70 mm as of October 31st, 2016

† Brooks et al. Processed nerve allografts for peripheral nerve reconstruction: a multicenter study of utilization and outcomes in sensory, mixed, and motor nerve reconstructions. Microsurgery. 2012 Jan;32(1):1-14.
α Safa and Buncke. Autograft Substitutes: Conduits and Processed Nerve Allografts. Hand Clin. 2016 May;32(2):127-40.
Ω Kakar. What's New in Hand Surgery. *J Bone Joint Surg Am*, 2016 Mar 16; 98 (6): 511 -516 .

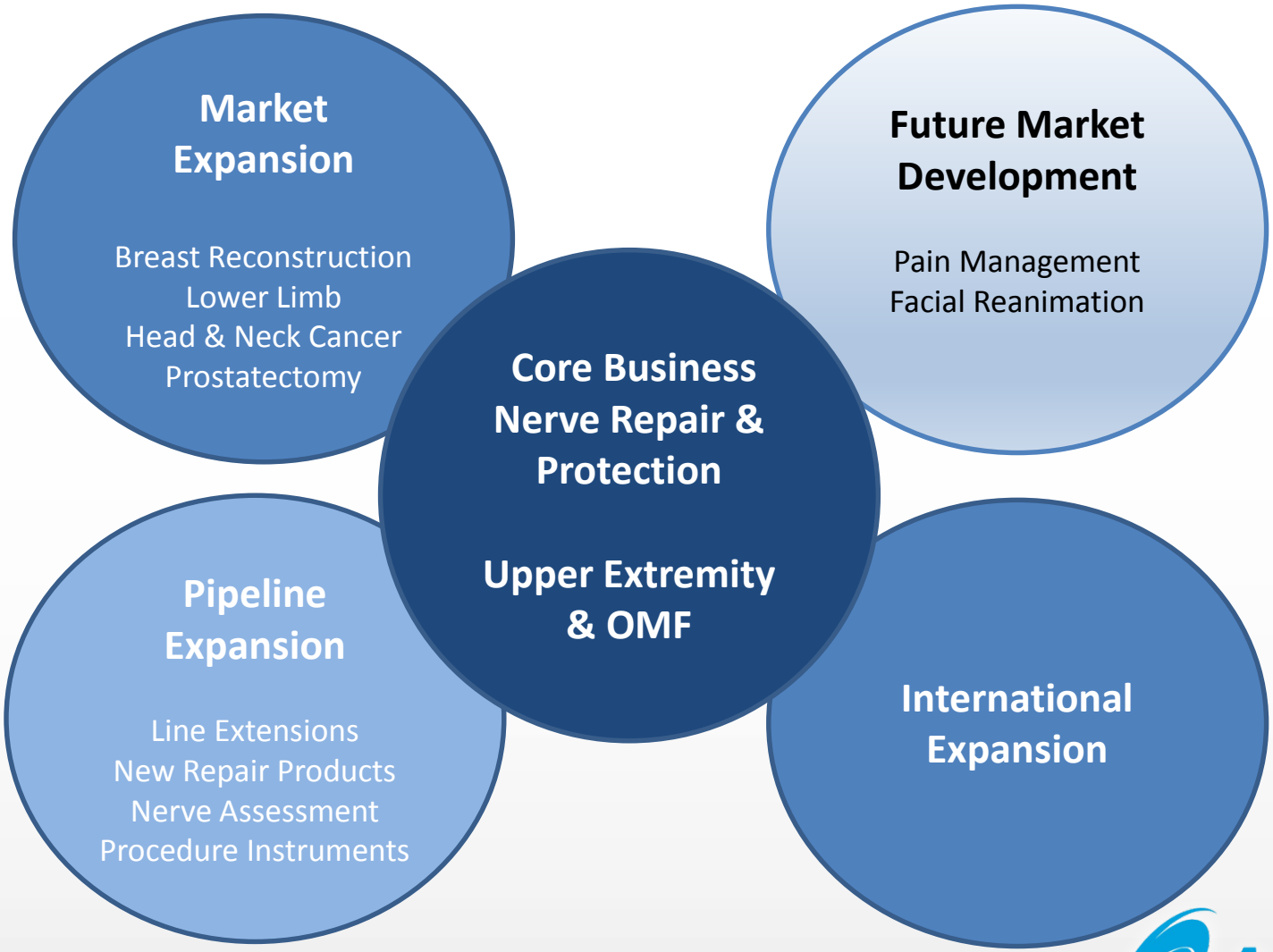
Execute Sales Plan

Expand Reach, Focus Sales Execution on Growth

- Expanded Sales Reach as of September 30, 2016
  - US sales team
    - 45 direct sales professionals
    - 23 independent distributors
  - OUS: Presence in 9 countries

- Sales Execution Focused on Driving Results
  - 414 Active accounts purchasing AxoGen product; increased 40% over prior year
  - 5,100 potential U.S. accounts doing nerve repair

Expand the opportunity in nerve repair



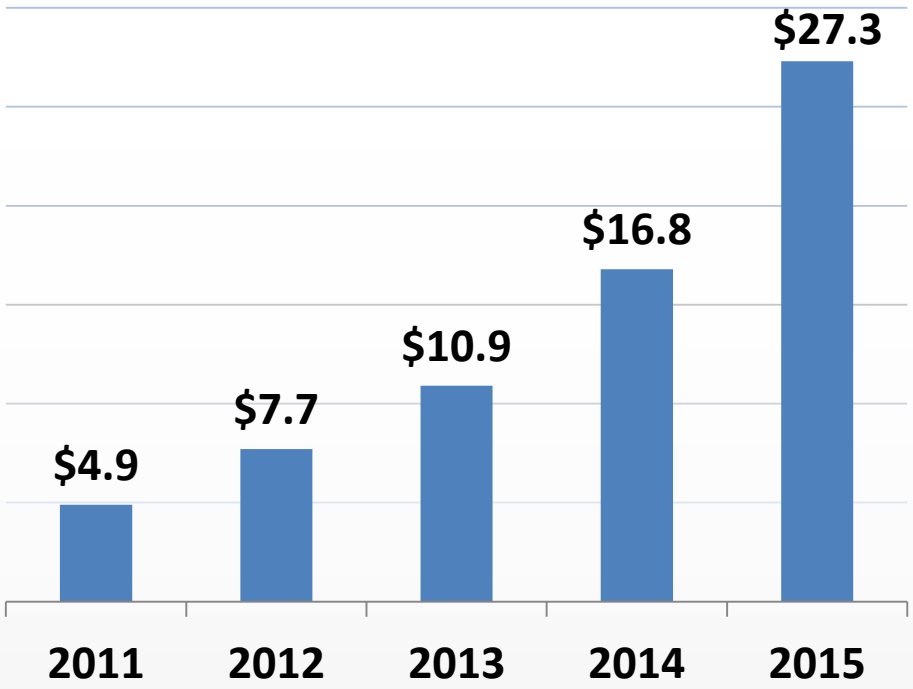
$ in millions

Delivering Strong Consistent Growth & Gross Margin

Year over Year

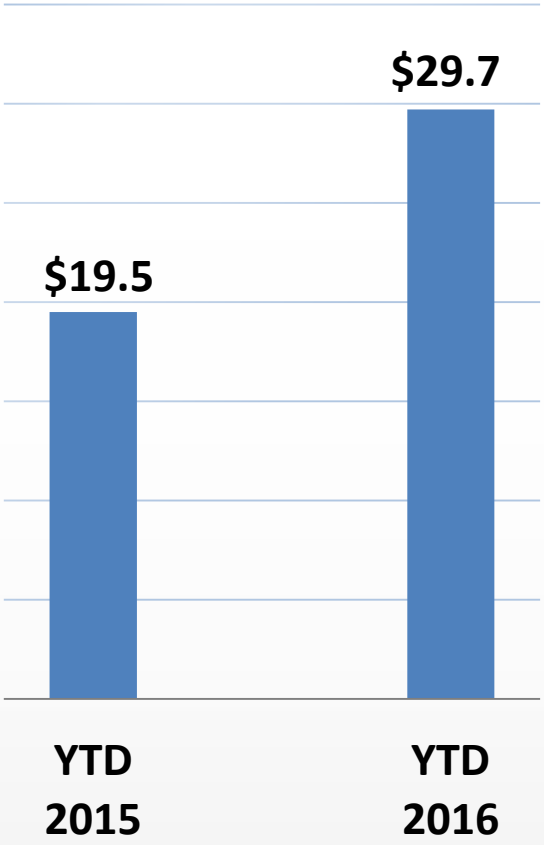
55% CAGR

5 Years of Double Digit Growth



Year To Date

52% Revenue Growth



84.4% Gross Margin for the nine months September 30, 2016

Balance Sheet & Capital Structure

Balance Sheet Highlights	September 30, 2016	Pro Forma[1] September 30, 2016
Cash	$16,003,245	$31,705,686
Debt	$24,996,070	$25,000,000

Capital Structure (Shares)	September 30, 2016	Pro Forma[1] September 30, 2016
Common Stock	30,209,036	32,892,370
Common Stock Options	3,515,009	3,515,009
Common Stock Warrants	44,843	44,843
Common Stock and Common Stock Equivalents	33,768,888	36,452,222

[1] Pro forma amounts reflect the impact of the equity raise and the debt refinancing completed in October had the transactions taken place on September 30, 2016. The Company sold a total of 2,683,334 shares at $7.50 and received proceeds, net of underwriters discounts and offering expenses, of $18.6 million. Additionally, the company refinanced its previous $25.0 million debt facility with Three Peaks Capital into a new facility with MidCap Financial. The new facility provides for up to $31.0 million of debt comprised of a $21.0 million term loan and a $10.0 million revolving line of credit. The revolver may be increased to $15.0 million at a later date at the Company's request and with the approval of MidCap. Borrowings under the revolver are subject to the available borrowing base which, at closing was $5.4 million, and the company drew $4.0 million. At closing, the interest rate was 8.5% on the Term Loan and 5.0% on the revolver. The company anticipates that annual interest cost savings of this new facility will be at least $1.5 million compared to the previous facility. Expenses and fees of approximately $600,000 were paid in October to complete the refinancing, and prepayment fees of approximately $2.3 million were owed to Three Peaks Capital and were paid from the company's own funds.

Leadership Team

Karen Zaderej, MBA
President & Chief Executive Officer
J&J (Ethicon)

Peter Mariani
Chief Financial Officer
Lensar, Hansen, Guidant

Greg Freitag, JD, CPA
General Counsel & SVP Business Development
Pfizer, Guidant

Shawn McCarrey
SVP, Sales
Bayer, Medrad, Possis

Kevin Leach
VP of Marketing
Stryker, ConvaTec/Bristol-Myers
Squibb, Zimmer

Mark Friedman, PhD
VP, Regulatory & Quality Assurance
AtriCure, Enable Medical

Mike Donovan
VP, Operations
Zimmer

John Engels, MBA
VP International Sales &
Co-Founder
University of FL, CACM

Erick DeVinney
VP, Clinical & Translational Sciences
Angiotech, PRA International

Dave Hansen
Chief Accounting Officer
Perma-Fix, Kraft

AxoGen was founded by regenerative medicine pioneer, **Jamie Grooms** (RTI, Cryolife and Osteotech), and is headed by a seasoned executive team

AxoGen Overview

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- "Five Pillar" growth strategy has delivered 23 consecutive quarters of YOY double-digit growth
  - 2015 Revenue $27.3M, 63% growth vs 2014
  - Q3 2016 Revenue $11.2M, 37% growth vs Q3 2015
  - YTD 2016 Revenue $29.7M, 52% growth vs YTD 2015
  - High gross margins 82.4% 2015 and 84.4% YTD 2016
  - Pro Forma Sept 30, 2016 Cash $31.7M
- Solid balance sheet provides resources to execute business plan
- Significant barriers to competitive entry including a growing body of clinical data
- Strong management team with track record of commercial success
- Expansion opportunities beyond current markets

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