

# NEUROMetrix<sup>®</sup>

Nasdaq: NURO

Shai N. Gozani, MD, PhD  
President & CEO

Tom Higgins  
Chief Financial Officer

May 2018

# Safe Harbor Statement

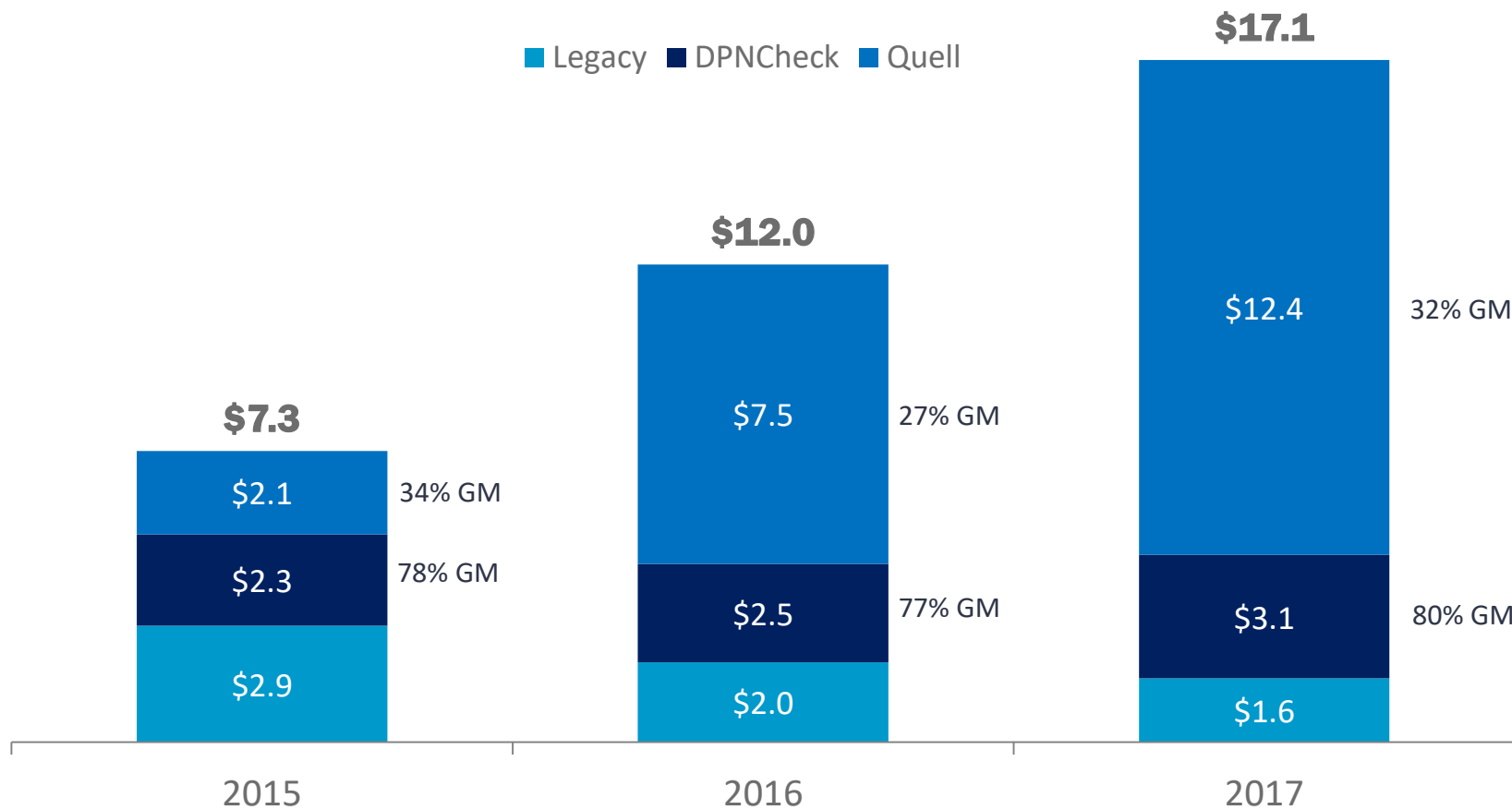
The statements contained in this corporate presentation include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, including, without limitation, statements regarding our or our management's expectations, hopes, beliefs, intentions or strategies regarding the future. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "plan" and similar expressions may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. The forward-looking statements contained in this corporate presentation, including those related to Quell Business Model, are based on our current expectations and beliefs concerning future developments and their potential effects on us. There can be no assurance that future developments affecting us will be those that we have anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond our control) or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. Such forward-looking statements involve known and unknown risks, uncertainties and other factors including those risks, uncertainties and factors referred to under the section "Risk Factors" of the Company's most recent Annual Report on Form 10-K and of the prospectus included with our registration statement, and subsequent Quarterly Reports on Form 10-Q, as well as other documents that we may file from time to time with the Securities and Exchange Commission. Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary from those projected in these forward-looking statements. We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

# Company Profile

- Consumer health/technology
- Neurostimulation and digital medicine
- Chronic pain, sleep disorders, diabetes
- Institutional knowledge builds on pedigree
  - Innovation-driven
  - Core technology spun out of Harvard-MIT
  - 20 year history in medical devices
- Fully integrated operations
  - In-house R&D, regulatory/compliance, manufacturing, marketing, customer service
  - Provides operating flexibility, facilitates innovation
- Consumer/retail and professional marketing
- Commercial products: Quell<sup>®</sup> and DPNCheck<sup>®</sup>

# Revenue Growth by Product

(\$s in millions)



1. Legacy consists of the Company's ADVANCE and SENSUS products.

# 2018 Milestones

- GSK - \$26.5M Quell OUS
  - Expect milestone funding \$12M in 2018
- Launch 3<sup>rd</sup> generation Quell
  - Enhanced functionality
  - Reduced cost
- Rationalize distribution
  - Optimize for highest performing channels
- Improve user retention
  - Increase recurring consumable business
- Clinical study read-outs
  - Low back pain study from Brigham & Women's Hospital
- Financials
  - Double digit revenue growth on \$17.1M in 2017
  - Gross margin expansion
  - Operational leverage with growth

# Strategic Collaborators

- GlaxoSmithKline - January 2018
  - Among world's largest healthcare companies, \$40B annual sales
  - Leading OTC pain relief brands: Voltaren<sup>®</sup>, Panadol<sup>®</sup> and Excedrin<sup>®</sup>
  - Objective – funding, product development
- Fukuda Denshi – August 2017
  - Tokyo based, \$1B annual sales (90% Japan)
  - Medical electronic equipment (cardiovascular and circulatory systems)
  - Objective – grow DPNCheck business in Japan
- Omron Healthcare – November 2013
  - Kyoto based, global health leader, \$1B annual sales
  - Monitoring devices for blood pressure, body composition, activity, sleep, blood glucose. Other products: vascular screening, thermometers, electric toothbrushes, nebulizers, ECGs
  - Objective – develop DPNCheck market in China

# Chronic Pain Market

- Large market with unmet needs
  - 100 million U.S. adults
  - Internal/external OTC analgesics > \$4.9 billion annual U.S. spending<sup>1</sup>
  - U.S. out-of-pocket spending on alternative chronic pain therapy - \$15 billion per year<sup>2</sup>
  - Over 200 million prescription opioid prescriptions written in 2013<sup>3</sup>
- Most common therapy is pain medications
  - OTC non-steroidal, anti-inflammatories, opioids, anti-convulsants, anti-depressants
- Over 50% of chronic pain sufferers indicate little/no control over their pain<sup>3</sup>

1. Nielsen Research 2016.

2. BCC Research LLC.

3. Nahin et al. 2015.

4. 2006 Voices of Chronic Pain Survey (American Pain Foundation).

5. Gaskin et al. 2012.

# Quell Wearable Technology

## - Convergence of Neurostimulation and Digital Health

### Quell Device & Sports Band

- Wearable neurostimulator
- Automatically adjusting stimulation
- Frictionless health tracking
- Weekly charging
- FDA cleared, class 2 medical device



### Quell Electrode

- Rated for 2 weeks
- Regular and sport versions



### Quell App & Health Cloud

- Control device
- Visualize, understand and optimize chronic pain and health
- Rich database for data analytics and clinical research





# Recurring Revenue Model



**Starter kit - ASP \$249.00**

- Quell therapy device
- 2 electrodes (1 month supply)
- Sports band (~ 6 mo usage)

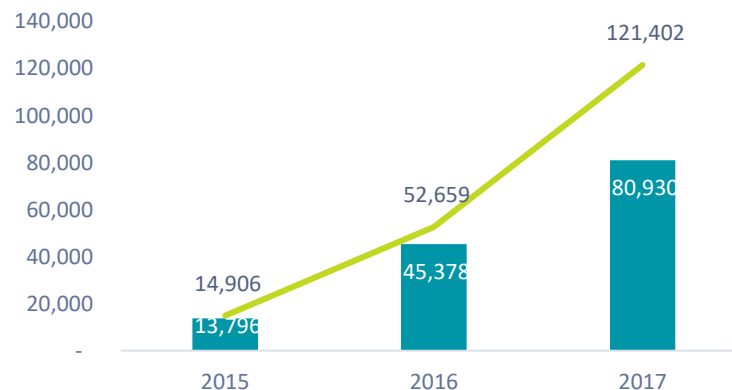
**Electrode - ASP \$29.95**

- 2 electrodes per package

**Sports band – ASP \$24.95**

Solid electrode growth with upside in reorder rates

Shipments



# Benefits Unmatched in Chronic Pain

| Benefits                          | Quell® | OTC TENS <sup>1</sup> | OTC Internal Analgesics <sup>2</sup> | OTC External Analgesics <sup>3</sup> | Non-Opioid Pain Meds <sup>4</sup> | Opioid Pain Meds <sup>5</sup> |
|-----------------------------------|--------|-----------------------|--------------------------------------|--------------------------------------|-----------------------------------|-------------------------------|
| Treats Chronic Pain               | ■      | +/-                   | +/-                                  | +/-                                  | ■                                 | ■                             |
| Widespread <sup>6</sup> Analgesia | ■      |                       | ■                                    |                                      | ■                                 | ■                             |
| Nighttime Use                     | ■      |                       | ■                                    |                                      | ■                                 | ■                             |
| No Major Side Effects             | ■      | ■                     |                                      | ■                                    |                                   |                               |
| No Addiction Risk                 | ■      | ■                     | ■                                    | ■                                    | ■                                 |                               |
| Smartphone Enabled                | ■      |                       |                                      |                                      |                                   |                               |
| Digital Health Integration        | ■      |                       |                                      |                                      |                                   |                               |
| Available without Prescription    | ■      | ■                     | ■                                    | ■                                    |                                   |                               |

Examples

- |                                                                                                                           |                                                                                                                 |                                                                                                    |                                                                                 |                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Bayer Direct Therapy</li> <li>• Icy Hot Smart Relief</li> <li>• Omron</li> </ul> | <ul style="list-style-type: none"> <li>• Advil</li> <li>• Aleve</li> <li>• Motrin</li> <li>• Tylenol</li> </ul> | <ul style="list-style-type: none"> <li>• Ben Gay</li> <li>• Icy Hot</li> <li>• Salonpas</li> </ul> | <ul style="list-style-type: none"> <li>• Lyrica</li> <li>• Neurontin</li> </ul> | <ul style="list-style-type: none"> <li>• Oxycontin</li> <li>• Percocet</li> <li>• Vicodin</li> <li>• Percocet</li> </ul> |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|

1. Retail leaders are Sanofi IcyHot Smart Relief and Bayer Aleve Direct Therapy.

2. Non-steroidal anti-inflammatory drugs, acetaminophen, aspirin, etc.

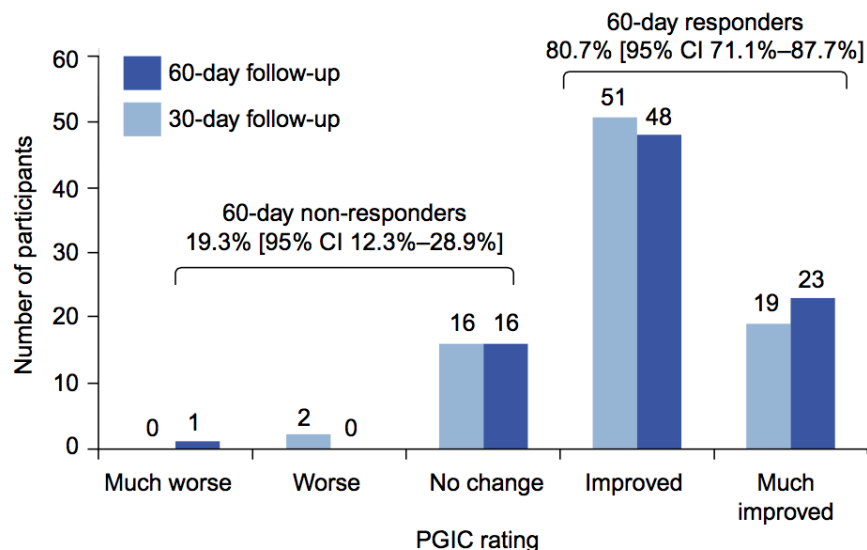
3. Analgesic patches and creams.

4. Gabapentin, pregabalin, duloxetine, amitriptyline, etc.

5. Hydrocodone, oxycodone, meperidine, etc.

6. Widespread indicates effects beyond site of stimulation

# Open-Label Interventional Study



Gozani. Fixed-Site High-Frequency Transcutaneous Electrical Nerve Stimulation for Treatment of Chronic Low Back and Lower Extremity Pain. Journal of Pain Research 2016.

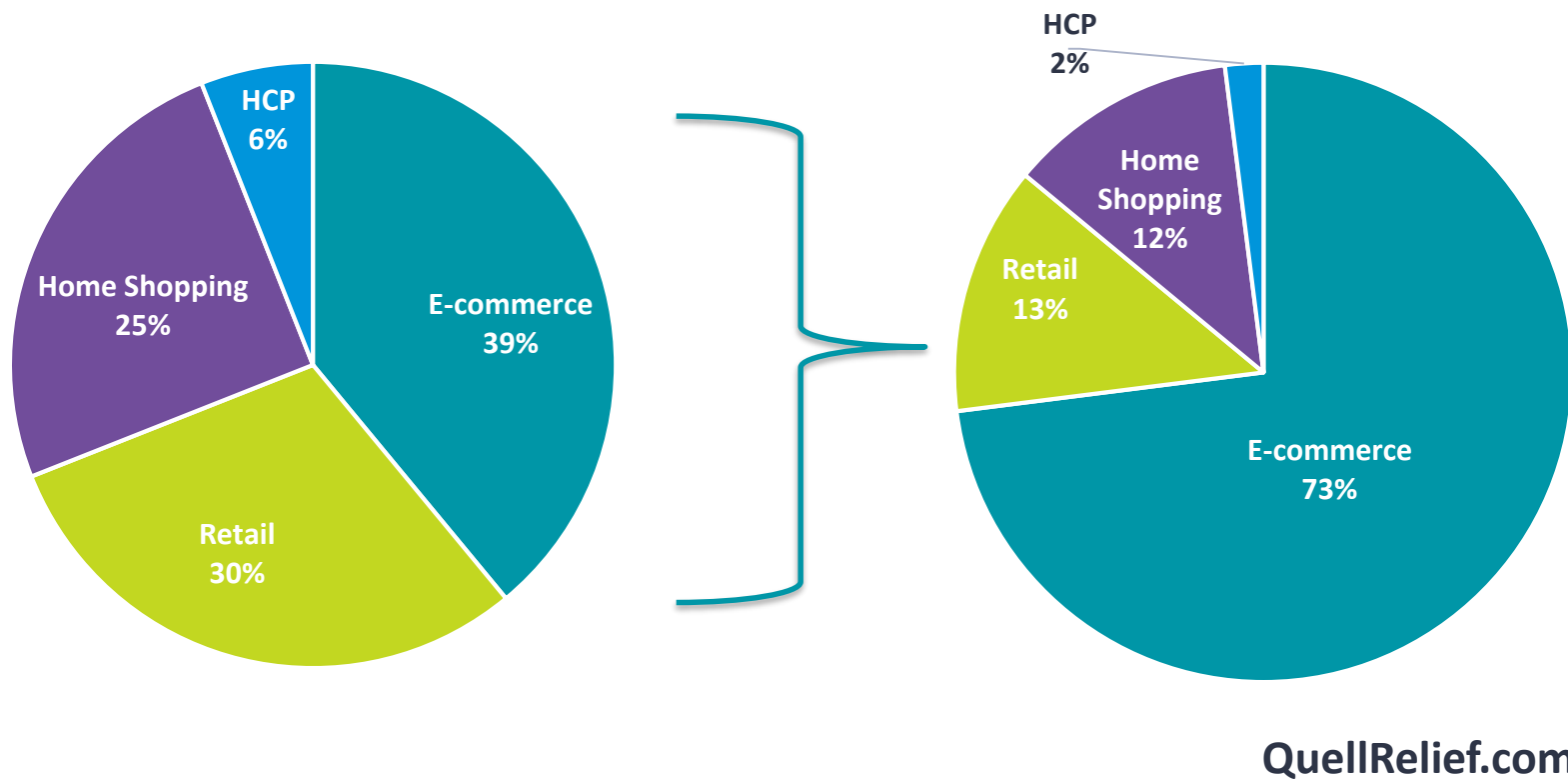
**Figure 2** PGIC ratings of study participants.

**Notes:** Light and dark bars represent 30- and 60-day follow-up, respectively. Percentage of responders and non-responders shown for 60-day only.

**Abbreviations:** PGIC, patient global impression of change; CI, confidence interval.

- 81% of subjects reported improvement in chronic pain
- 67% of subjects (80% of responders) reported reduction in pain medication use
- Responders reported clinically significant reduction in pain interference with sleep and walking ability
- Responders reported clinically significant improvement in pain relief effectiveness

# Margin-driven Distribution Shift



- Focusing the business on highest performing channels

# DPNCheck

- Diabetic peripheral neuropathy (DPN) test
  - Most common long term complication of diabetes
  - 50% prevalence
- Regulatory clearance - U.S., Canada, China, EU, Japan, South Korea, Australia, Mexico
- U.S. Medicare Advantage focus
  - providers covering patient health care risk
- OUS distribution - Japan, China, Mexico, Middle East
- Razor/razorblade business model
  - Device list price \$1,000
  - Biosensor list price \$20
- 2017 revenue \$3.1M (35% growth)
  - gross margin > 75%

NC-stat® | DPNCheck®



- Electronic hand-held device
- Single patient use biosensor
- Data management software

 **FUKUDA  
DENSHI**

**OMRON**

# DPNCheck<sup>®</sup>

## Rapid, accurate, quantitative test for neuropathy

- Point-of-care test of sural nerve conduction
  - Standard biomarker for DPN
  - Sensitive and specific for DPN
  - Quantitative and entirely objective
  - Identifies pre-clinical (“early”) DPN
- Easy operation
  - 30-60 seconds per test, does not disrupt patient flow
  - Testing can be done by clinic staff or in-home risk assessment provider
  - Reports standard, easily understood nerve conduction parameters
- Substantial clinical benefits
  - Early detection, definitive diagnosis, assess severity
  - Intensify glycemic control, improved foot care, guide specialist referrals, enhance patient education



Device is placed at the ankle and calf



1 Position patient, prepare testing area



2 Turn on, place biosensor, apply gel



3 Place device, start 10-15 second test



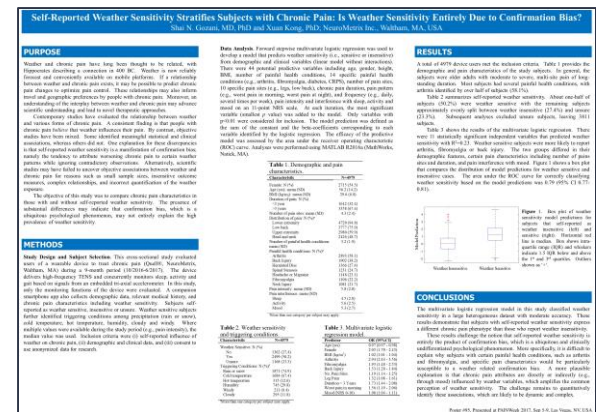
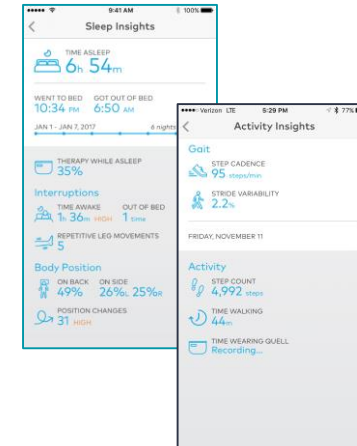
4 Read results

# Research & Development

– Innovation mindset > sustainable competitive advantage

- Highly experienced 10 person R&D team
- 2 MD's, 3 Ph.D's
  - Hardware, software, project mgmt., FDA/regulatory, data analytics
- Product development
  - DPNCheck sustaining engineering
  - Continual innovation of Quell platform
  - Third generation Quell
    - Decreased COGS, enhanced usability, electrode improvements
  - Expanding digital health functionality

- Leveraging Quell Health Cloud through data science
- Supporting, collaborating, and conducting DPNCheck and Quell clinical studies
- Evaluating new clinical applications of Quell technology platform



# Intellectual Property

- 38 issued U.S. patents
- 7 issued foreign patents
- 50 patent applications
  - 27 U.S. applications
  - 23 PCT/foreign national applications
- Wearable therapeutic technology (Quell)
  - 6 issued US utility patents
  - 3 issued foreign patents (assigned to GSK)
  - 3 issued design patents
  - 36 utility and design patent applications
- Point-of-care nerve testing (DPNCheck)
  - 7 issued utility patents
  - 3 issued foreign patents
  - 6 utility patent applications

(12) **United States Patent** (10) **Patent No.:** **US 8,948,876 B2**  
 Gozani et al. (45) **Date of Patent:** **Feb. 3, 2015**

(54) **APPARATUS AND METHOD FOR RELIEVING PAIN USING TRANSDUCENT ELECTRICAL NERVE STIMULATION** (58) **Field of Classification Search**  
 USPC ..... 607/46, 48, 62, 72  
 See application file for complete search history.

(71) Applicant: **NeuroMetrix, Inc.**, Waltham, MA (US) (56) **References Cited**  
 U.S. PATENT DOCUMENTS

(72) Inventors: **Shai N. Gozani**, Brookline, MA (US); **Xuan Kong**, Acton, MA (US); **Andres Aguirre**, Belmont, MA (US); **Glenn Herb**, Weston, MA (US); **Marc Cryan**, Maynard, MA (US); **Michael Williams**, Melrose, MA (US)

(73) Assignee: **NeuroMetrix, Inc.**, Waltham, MA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/678,221** (74) **Attorney, Agent, or Firm** — **Pandiscio & Pandiscio**

(22) Filed: **Nov. 15, 2012** (57) **ABSTRACT**

(65) **Prior Publication Data**  
 US 2013/0158627 A1 Jun. 20, 2013

**Related U.S. Application Data**

(60) Provisional application No. 61/560,029, filed on Nov. 15, 2011; provisional application No. 61/627,382, filed on Jun. 8, 2012.

(51) **Int. Cl.**  
**A61N 1/00** (2006.01)  
**A61N 1/04** (2006.01)  
**A61N 1/32** (2006.01)

(52) **U.S. Cl.**  
 CPC: **A61N 1/0456** (2013.01); **A61N 1/36021** (2013.01); **A61N 1/0492** (2013.01); **A61N 1/321** (2013.01); **A61N 1/56014** (2013.01)  
 USPC ..... **607/46, 607/62**

**29 Claims, 9 Drawing Sheets**



# Operating Performance

|                          | Historical            |                       |                       | Path Forward        |                     |
|--------------------------|-----------------------|-----------------------|-----------------------|---------------------|---------------------|
|                          | 2015                  | 2016                  | 2017                  | Mid-Point           | Crossover           |
| Product Revenue          |                       |                       |                       |                     |                     |
| - Quell                  | \$ 2,122,806          | \$7,513,912           | \$12,397,947          | \$15,000,000        | \$33,500,000        |
| - DPNCheck               | 2,319,098             | 2,495,884             | 3,110,435             | 4,500,000           | 6,000,000           |
| - Legacy                 | 2,857,927             | 2,017,732             | 1,583,954             | 1,000,000           | 500,000             |
| <b>Total</b>             | <b>\$7,299,830</b>    | <b>\$12,027,528</b>   | <b>\$17,092,336</b>   | <b>\$20,500,000</b> | <b>\$40,000,000</b> |
| Gross Profit             | \$ 3,349,084          | \$ 4,914,523          | \$ 6,856,798          | 10,250,000          | \$24,000,000        |
|                          | 45.9%                 | 40.9%                 | 40.1%                 | 50.0%               | 60.0%               |
| Operating Expenses       |                       |                       |                       |                     |                     |
| - R&D                    | 3,894,786             | 4,394,353             | 3,497,636             | 3,000,000           | 2,500,000           |
| - S&M                    | 7,232,971             | 10,855,444            | 10,751,863            | 12,000,000          | 14,000,000          |
| - G&A                    | 5,497,513             | 4,872,670             | 5,689,917             | 5,000,000           | 5,000,000           |
| <b>Total</b>             | <b>16,625,269</b>     | <b>20,122,468</b>     | <b>19,939,416</b>     | <b>20,000,000</b>   | <b>21,500,000</b>   |
| <b>Operating Inc</b>     | <b>(13,276,186)</b>   | <b>(15,207,945)</b>   | <b>(13,082,618)</b>   | <b>(9,750,000)</b>  | <b>2,500,000</b>    |
| Other Inc (w/Collab)     | 5,233                 | 19,132                | 4,257                 | 10,000,000          | 15,000              |
| <b>Net Income (Loss)</b> | <b>(\$13,270,953)</b> | <b>(\$15,188,813)</b> | <b>(\$13,078,361)</b> | <b>\$250,000</b>    | <b>\$2,515,000</b>  |

## Crossover to profitability – range of \$40M revenue

Key milestones on pathway

- GSK collaboration - capital, shared R&D costs
- Next-gen Quell launch - COGS gains
- Revenue growth - efficient ad spend plus rationalized distribution
- Operational leverage with growth

# Capital structure

- Simple capitalization
  - Debt free
  - Equity = common and convertible preferred stock
    - Preferred is fully funded, “plain vanilla” convertible to common
    - No interest/dividends, no anti-dilution or liquidation preferences
    - Institutional investor holds convertible preferred
  - Insignificant warrants and employee stock options
  - Management/Director common stock = 3.9%

| Fully Diluted (\$1.40/share)                      | Common Shares     | Market Cap          | Capitalization      |
|---------------------------------------------------|-------------------|---------------------|---------------------|
| Common Stock                                      | 7,356,731         | \$10,299,423        | \$10,299,423        |
| Common stock Issuable under convertible preferred | 6,584,674         | \$0                 | \$9,218,544         |
| Warrants (Wtd Avg. = \$40.00)                     | 459,375           | \$0                 | \$0                 |
| Stock options (Wtd Avg. = \$4.85)                 | 434,566           | \$0                 | \$0                 |
|                                                   | <b>14,835,346</b> | <b>\$10,299,423</b> | <b>\$19,517,967</b> |

| Institution (50% fully diluted) | Common Shares    | Market Cap         | Capitalization      |
|---------------------------------|------------------|--------------------|---------------------|
| Common stock                    | 816,506          | \$1,143,109        | \$1,143,109         |
| Common stock under conv pfd     | 6,583,127        | \$0                | \$9,216,378         |
|                                 | <b>7,399,634</b> | <b>\$1,143,109</b> | <b>\$10,359,487</b> |

# Valuation Metrics

- **Market capitalization** (\$1.40 stock price)
  - NASDAQ listed common shares Today  
\$10.3M
  - Common & preferred “as converted” shares
    - more meaningful measure \$19.5M
  
- **Enterprise value**
  - Q1’18 cash ~\$6.1M \$13.4M
  
- **Valuation potential**

|                                 | <u>EV</u> | <u>Rev</u> | <u>Mult</u> | <u>SP</u> |
|---------------------------------|-----------|------------|-------------|-----------|
| – TTM rev, current multiple     | \$13.4M   | \$17.1M    | 0.78x       | \$1.40    |
| – TTM, Health/Tech growth 3x    | \$51.3M   | \$17.1M    | 3.00x       | \$3.57    |
| – Crossover rev, Health/Tech 3x | \$120M    | \$40M      | 3.00x       | \$8.76    |
| – M&A crossover rev, 5x         | \$200M    | \$40M      | 5.00x       | \$14.60   |

# Management Team



## **Shai N. Gozani, M.D. Ph.D., Chairman of the Board, Chief Executive Officer and President**

- Dr. Gozani founded NeuroMetrix in 1996 as a spin-off from the Massachusetts Institute of Technology
- M.D. from Harvard Medical School; Ph.D. in Neurobiology from the University of California, Berkeley



## **Thomas T. Higgins, Senior Vice President and Chief Financial Officer**

- Mr. Higgins has served as Senior Vice President, Chief Financial Officer and Treasurer since September 2009
- Prior to joining NeuroMetrix, Mr. Higgins was Executive Vice President and Chief Financial Officer at Caliper Life Sciences, a provider of technology and services for life sciences research
- B.B.A. with honors from Boston University



## **Frank McGillin, Senior Vice President and Chief Commercial Officer**

- Mr. McGillin as served as Senior Vice President and Chief Commercial Officer since August 2014
- Prior to joining NeuroMetrix, from September 2001 to January 2014, Mr. McGillin was Vice President and General Manager at Philips, having served in a number of senior marketing and management positions in the company's consumer and healthcare businesses
- MBA from Fordham University and a B.S. degree from Northeastern University



## **Michael J. MacDonald, Senior Vice President of General Manager of Diagnostics**

- Mr. MacDonald joined NeuroMetrix in September 2000 and has held several marketing and sales positions
- Prior to joining NeuroMetrix, Mr. MacDonald held various marketing positions at Smith & Nephew Endoscopy, a world leader in minimally invasive surgical devices
- B.S. degree in Business Administration from Northeastern University



## **Xuan Kong, Ph.D., Senior Vice President and Chief Data Scientist**

- Dr. Kong joined the company in 1999. In his role of Chief Data Scientist, he provides leadership for the Company's emerging data science program. Dr. Kong is also responsible for Company intellectual property development
- Prior to joining the company, Dr. Kong was a tenured associate professor in the Department of Electrical Engineering at Northern Illinois University
- Ph.D. from The Johns Hopkins University and MBA from Boston University

# Investment Thesis

## Attractive Financial Metrics

- Undervalued, EV/ TTM revenue < 1
- Improving gross margins, operational leverage, pathway to profitability
- New capital minimizes dilution risk

## Strong 2018 Catalysts

- GSK collaboration milestones
- Rationalize distribution, new user initiatives
- PR related to next-gen Quell launch

## Productive R&D Program

- Next-gen Quell launch H2 2018
- Joint NURO/GSK development program
- Pipeline opportunities