

# NEUROMetrix<sup>®</sup>

Shai N. Gozani, MD, PhD

President & CEO

January 2018

# Safe Harbor Statement

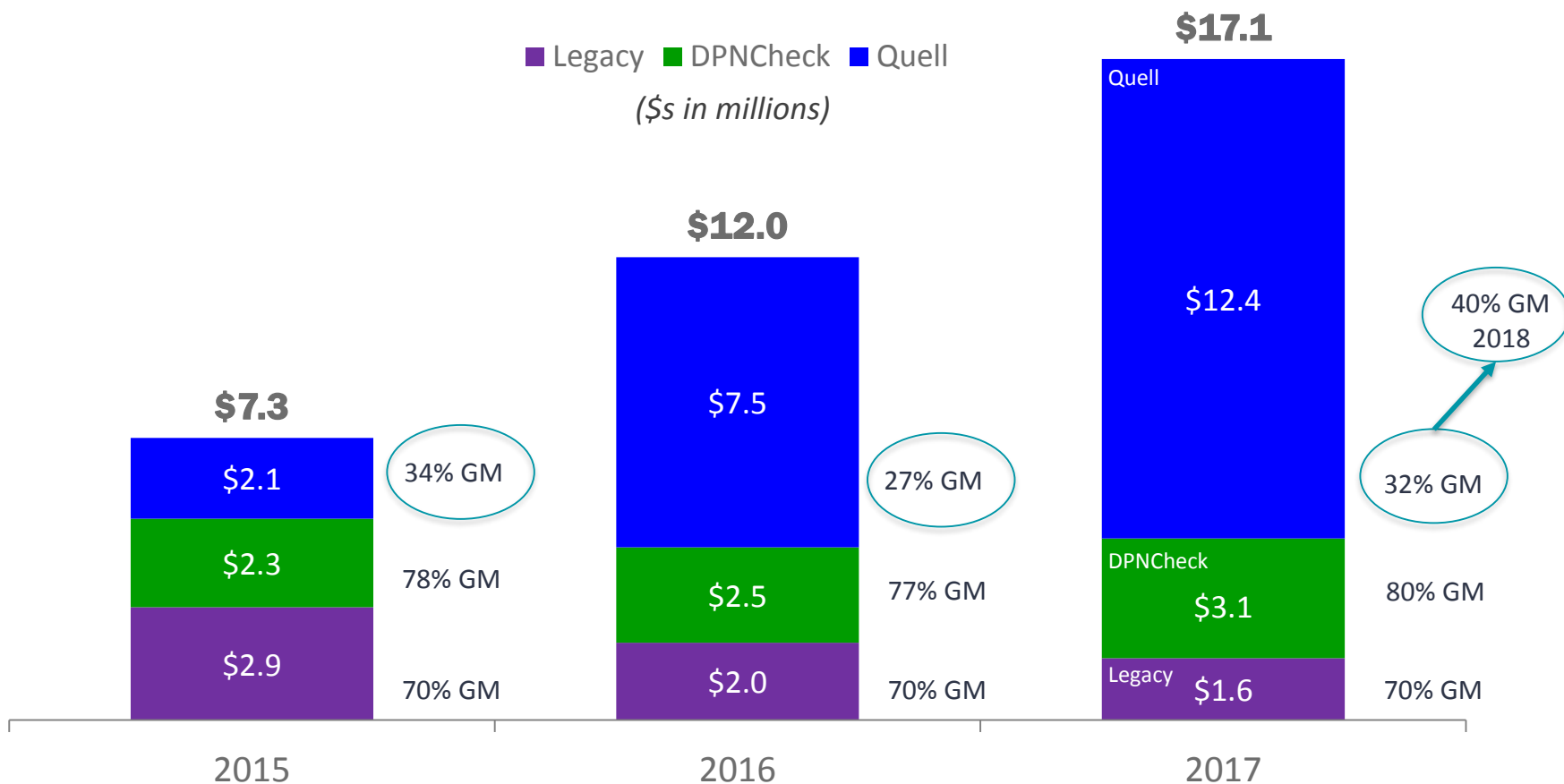
The statements contained in this corporate presentation include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, including, without limitation, statements regarding 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.



Sector	Health technology: neurostimulation and digital health
History	Founded 1996, IPO 2004
Ticker	Nasdaq: NURO
Locations	Waltham, MA and Woburn, MA (manufacturing)
Markets	Chronic pain (U.S.) Diabetes (U.S., Mexico, Japan, China)
Products	Quell® (OTC) DPNCheck® (Rx)
IP	Over 50 U.S. and international patents
Financials	9-mo Ended 9/30/18: Rev \$12.4M Net Income \$2.8M
Market Cap	\$10M \$6M+ cash at year end, no debt

# Revenue Growth 2015-2017

## Driven by Quell Business



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

# 2018 Financials – Profitable through Q3

## Nine Months Ended September 30,

\$s in thousands	2018	2017
Revenue	\$12,361	\$12,163
Gross Profit	\$5,635	\$4,785
Operating Expenses	\$15,105	\$14,984
Loss from Operations	\$(9,470)	\$(10,199)
Collaboration Income	\$12,255	\$0
Net Income (loss)	\$2,826	\$(9,979)

### Key Achievements

- Signed GSK agreement
- Launched Quell 2.0
- Rationalized distribution
- Expanded clinical validation

- Gross margin improved from 39.3% to 45.6%
- Collaboration income from \$26.5M GSK agreement (initial \$5M payment + 2 operating milestones)

# Strategic Collaborations



Largest consumer health company following joint venture with Pfizer Consumer

Leading OTC pain brands: Voltaren<sup>®</sup>, Panadol<sup>®</sup>, Excedrin<sup>®</sup>

Sold international rights to Quell technology for \$5M upfront, \$21.5M in milestone payments and 50/50 R&D cost sharing



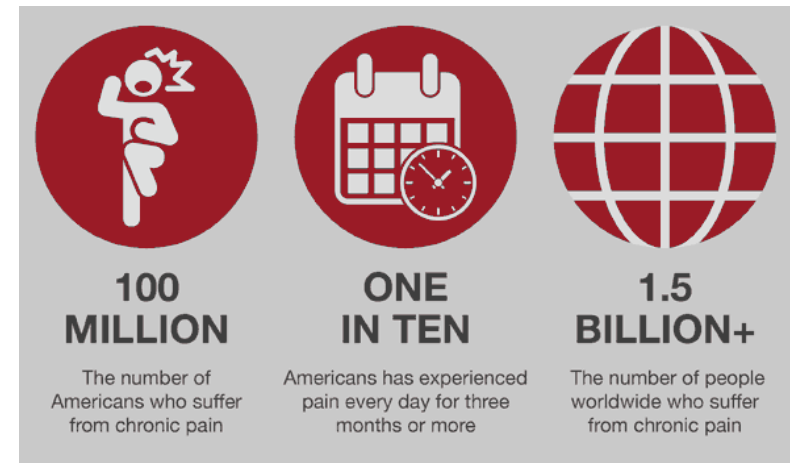
Tokyo based, \$1B annual sales (90% Japan)

Medical equipment (cardiovascular, diabetes)

Japan DPNCheck distributor, minimum orders in 2019-2021

# Quell Targets the \$20B Out-of-Pocket Market for Chronic Pain Treatments

- #1 cause of long-term disability
- Annual direct/indirect economic cost > \$600B
- Over 50% feel medications provide little or no control over pain
- Increasing restrictions on prescription opioids
- Annual out-of-pocket spending on alternatives (nutraceuticals, acupuncture, chiropractic) > \$15B
- Annual out-of-pocket spending on OTC analgesics > \$4B



# 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 App & Health Cloud

- Controls device
- Visualize, understand and optimize chronic pain and health
- Rich database for data analytics and clinical research
- Therapeutic coach based on gamification principles
- AI powered personalization and optimization of pain relief



### Quell Electrode

- Rated for 2 weeks
- Regular and sport versions



Quell Health Cloud - data on 70K individuals with chronic pain



# Who are Quell Users?

## People with Debilitating Chronic Pain



Age range 35-75  
Evenly split gender  
4+ years of chronic pain  
95% have daily pain  
50%+ have pain all day  
50%+ have severe pain  
3+ medical conditions  
4+ sites of pain

\*From Quell Health Cloud. Data on file.

# Bruce, Quell User

# Quell Efficacy Demonstrated in Multiple Clinical Studies

Jamison et al. **Outcome of a High Frequency Transcutaneous Electrical Nerve Stimulator (hfTENS) Device for Low Back Pain: A Randomized Controlled Trial.** *Manuscript Under Review.*

Pre minus post differences based on baseline and follow-up scores between the Experimental and Control subjects on pain, activity interference, catastrophizing, and mood at 3 months.

	Experimental	Control	
Pain Intensity (BPI, 0-10): ‡			
Worst	2.6±2.3	-0.1±2.2***	Pain Intensity
Least	0.9±1.6	-0.6±1.8**	
Average	1.2±1.8	-0.0±1.8**	
Now	1.2±2.0	-0.6±2.0**	
Pain relief % (24 hrs;0-100) †	-1.8±2.6	-0.2±4.5	Function / Disability
Ave. interference (mean, SD)	1.2±2.0	-0.4±2.0**	
Pain Disability Index (PDI)	8.4±13.2	-0.5±13.2*	
HADS Anxiety	0.9±3.4	-0.8±3.3	
HADS Depression	-0.7±2.9	0.4±4.9	Psychological
HADS Total	0.2±5.0	-1.2±5.3	
Pain Catastrophizing Scale	4.4±10.5	-1.9±8.8*	

Positive scores indicate improvements, negative scores indicate worsening

‡0=no pain; 10=pain as bad as you can imagine (past 24 hours)

†0=no relief; 100=complete relief

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

# Limited Competition

## Superior Benefit/Risk Among Pain Relief Options

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>• Aleve 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

# Quell DTC Business Model

## Upfront Hardware, Aftermarket Consumables

### Starter Kit

Quell Classic



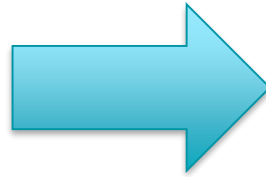
\$249.95

Quell 2.0



\$299.95

Therapy device, electrodes (1 mo supply),  
sports band (~ 6 mo usage)



### Consumables

Electrodes



\$29.95

2 electrodes per sleeve

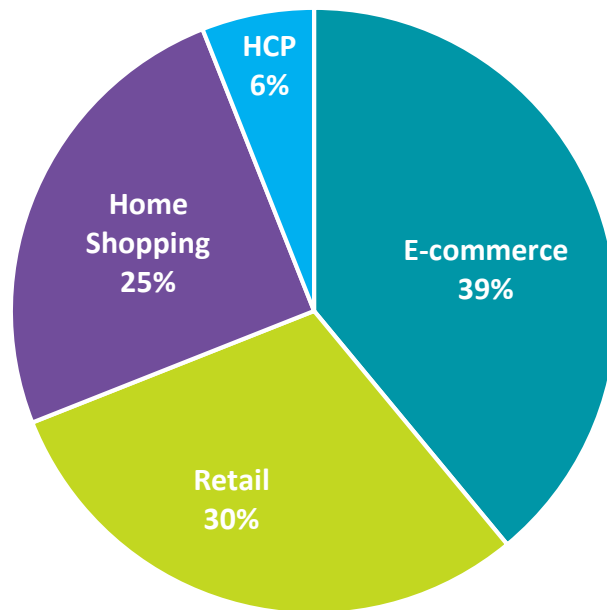
Sports Band



\$24.95

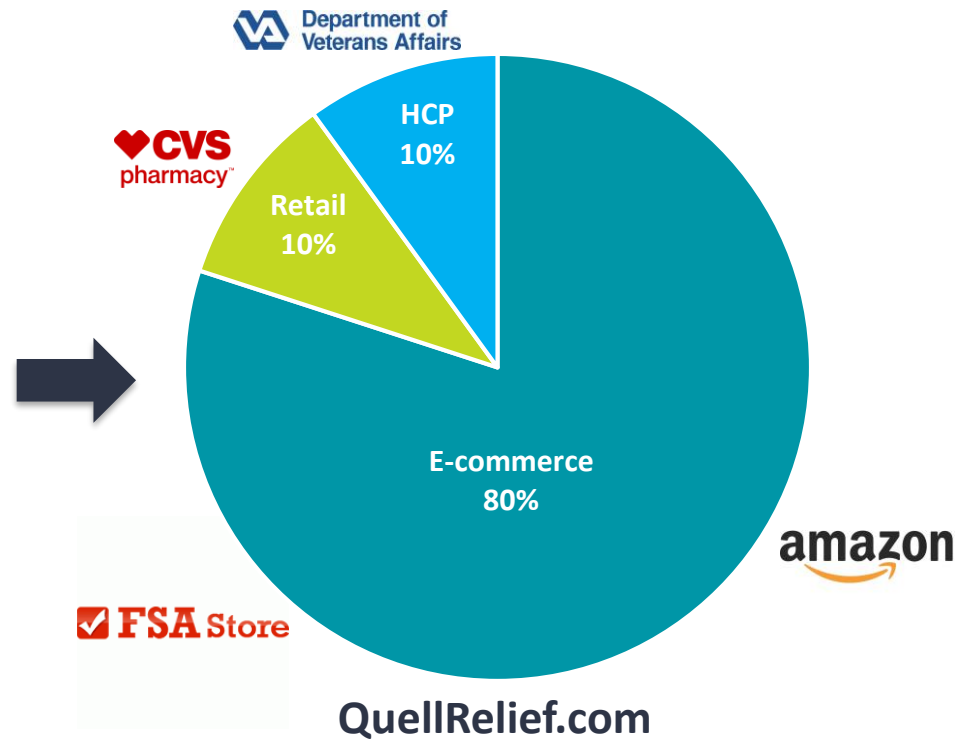
# Shifting Distribution to Highest Margin Channels

2017 Actual



Advertising – 80% TV, 20% digital

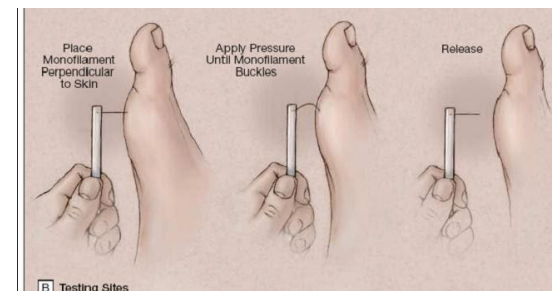
2019 Targets



Advertising – shift to digital

# DPNCheck Addresses Unmet Need in the Diabetes Market

- Diabetes prevalence: 30M U.S. and 400M+ worldwide
- Diabetic neuropathy (DPN) is the most common long-term complication - 50% prevalence
- Leads to foot ulcers and amputation
- Early detection and intervention is critical
- Current POC tests do not detect early DPN
- Nerve conduction is the gold-standard test but requires specialized equipment and expertise



# DPNCheck Test for Diabetic Neuropathy

- DPNCheck is the only POC nerve conduction test
- Strong IP and clinical validation
- Markets
  - US: Medicare Advantage
  - Mexico: government affiliated insurers
  - Japan: diabetes focused physicians
  - China: diabetes focused physicians
- Recurring revenue business model: device + biosensors
- Good growth, excellent margins
  - 2016 rev \$2.5M -> 2017 rev \$3.1M
  - Projected 2018 revenue \$4M+
  - Gross margin 80%, operating margin 60%



Position patient, prepare testing area



Turn on, place biosensor, apply gel



Place device, start 10-15 second test



Read results





# 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



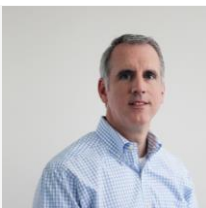
## **Thomas T. Higgins, Senior Vice President and Chief Financial Officer**

- 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

# NeuroMetrix Investment Thesis

- Novel pain relief solution that addresses unmet needs in chronic pain market
- Valuable diabetes business with excellent operating margins
- Ongoing income from GSK collaboration
- Extensive IP portfolio
- Experienced management team
- Focused on near term profitability with long-term M&A to deliver shareholder return



NC-stat® | DPNCheck™