

## OVERVIEW

NeuroMetrix is an innovation driven healthcare company combining bioelectrical and digital medicine to address chronic health conditions including chronic pain, sleep disorders, and diabetes. The company is committed to empowering people to improve their health through technology and reclaim their lives from chronic disease. The company's lead product is Quell®, an over-the-counter wearable therapeutic device for chronic pain. The company also markets DPNCheck®, a rapid point-of-care test for diabetic neuropathy, which is the most common long-term complication of Type 2 diabetes. The company is located in Waltham, Massachusetts.

NeuroMetrix was started in 1996 by Dr. Shai N. Gozani, M.D., Ph.D. while conducting medical research at MIT. The scientists and biomedical engineers at NeuroMetrix have spent over 20 years developing breakthrough neuro diagnostic technology and wearable neuro technology solutions for people suffering from chronic pain and degenerative nerve disorders. The company has been granted over 70 patents and published numerous scientific papers and abstracts.

## MARKETS

Chronic pain is a \$35 Billion market<sup>1</sup>, impacting 100 million Americans and 1.5 billion people worldwide<sup>2</sup>. Despite over 200 million opioid prescriptions in 2013<sup>3</sup>, treatment is inadequate. In a recent survey of 1,500 chronic pain sufferers, 90% indicated they are actively seeking new treatment methods, 91% said pain impacts their sleep and 59% reported losing time at work<sup>4</sup>.

## BUSINESSES AND PRODUCTS

Quell® is an advanced, 100% drug free wearable technology for treating chronic pain. Quell has been cleared by the FDA for treatment of chronic pain without a prescription. Quell has been shown in multiple clinical studies to relieve chronic pain and, in a published study<sup>5</sup>, 4 out of 5 users reported improvement in chronic pain. Quell users can personalize and manage therapy discreetly via the Quell app. Quell also offers health tracking relevant to chronic pain sufferers including pain, sleep, activity, and gait. Quell users can synchronize their data with the Quell Health Cloud, which provides customized feedback and powers one of the world's largest chronic pain databases. The company launched Quell 2.0 in September 2018. The latest generation technology is smarter, more powerful and 50% smaller. Quell is available online and through select retailers. Visit [QuellRelief.com](http://QuellRelief.com) for more information.



**DPNCheck®** is a fast, accurate, and quantitative nerve conduction test that is used to evaluate systemic neuropathies such as diabetic peripheral neuropathy (DPN). It is designed to be used by clinicians at the point-of-care to objectively detect, stage, and monitor DPN. The device measures nerve conduction velocity and response amplitude of the sural nerve, a nerve in the lower leg and ankle. These parameters are widely recognized as sensitive and specific biomarkers of DPN.



## **RESEARCH AND DEVELOPMENT**

NeuroMetrix maintains an active research effort in the application of neuromodulation to detect and treat chronic disease, focusing on chronic pain and degenerative nerve disease and restless leg syndrome. The company has active research programs with Scripps Translational Science Institute, Harvard Medical School, the University of Rochester and others.

## **MANAGEMENT**

### **SHAI N. GOZANI, M.D., PH.D.**

President, Chief Executive Officer and Director

Dr. Gozani founded NeuroMetrix, Inc. in 1996 as a spin-off from the Massachusetts Institute of Technology. He currently serves as Chairman of the board of directors and as our President and Chief Executive Officer. Shai has led the Company from a venture capital backed start-up, through an initial public offering on NASDAQ, through development of a successful diagnostics business, and presently into the wearable technology sector. Over 2.5 million patients have benefited from the Company's technology over the past 15 years.



Shai has published over 30 peer-reviewed scientific articles and has been awarded 25 US and international patents. Shai holds a B.A. degree in Computer Science, a M.S. degree in Electrical Engineering & Computer Science (Biomedical Engineering Focus) and a Ph.D. in Neurobiology, from the University of California, Berkeley. He also received an M.D. from Harvard Medical School and the Harvard-MIT Division of Health Sciences and Technology at M.I.T.

### **THOMAS T. HIGGINS**

Senior Vice President and Chief Financial Officer

Tom brings to NeuroMetrix a broad set of financial management and operations skills from his experience with publicly traded companies in life sciences, specialty chemicals and financial services. He has extensive international experience with a particular emphasis on Japan, Southeast Asia and the Middle East.

Prior to joining NeuroMetrix, Tom was Executive Vice President and Chief Financial Officer at Caliper Life Sciences, Inc, a provider of technology and services for life sciences research. Before Caliper, Mr. Higgins was Executive Vice President, Operations and Chief Financial Officer at V.I. Technologies, Inc. ("Vitex"), a biotechnology company addressing blood safety. Before Vitex, Mr. Higgins served at Cabot Corporation in various senior finance and operations roles. Tom started his career at PricewaterhouseCoopers.



Tom holds a B.B.A. with honors from Boston University.

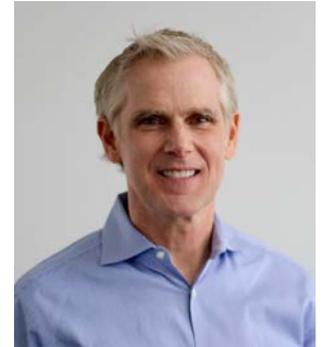
## **FRANK MCGILLIN**

Senior Vice President and Chief Commercial Officer

Frank brings to NeuroMetrix over 20 years of experience building successful, high-growth consumer healthcare brands most recently at Philips Oral Healthcare and at Johnson & Johnson.

At Philips Frank was responsible for building the global oral care business of Sonicare® to become the #1 brand in the nearly \$1 billion dollar US power toothbrush market. During his career, he has launched over 50 new products and product upgrades and managed businesses across markets including diagnostic imaging, healthcare informatics, medical devices, dental and consumer technology.

Frank holds an M.B.A. degree from Fordham University and a B.S. degree from Northeastern University.



## **MICHAEL J. MACDONALD**

Senior Vice President and General Manager, Diagnostics

Mike joined NeuroMetrix in 2000 and has held various marketing and sales positions in the company including Vice President of Marketing, Vice President of Healthcare Economics and Region Sales Manager. In his current role as General Manager, Mike is responsible for the marketing, sales and day to day management of the company's diagnostic technologies.

Prior to joining NeuroMetrix, Mike held various marketing positions at Smith & Nephew Endoscopy, a world leader in minimally invasive surgical devices. Prior to Smith & Nephew, he served in multiple product management roles at Deknatel, Inc., a company specializing in the development of products for cardiovascular and other specialty surgery markets.

Mike holds a 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 current role, he leads the company's data science initiative by leveraging the data assets collected from Company's products to deliver personalized and clinically optimized pain relief and health experience for customers. In addition, he provides leadership and technology contributions for the Company's basic research and product development functions. Xuan also manages the Company's intellectual property portfolio and external research collaborations. He has published numerous papers in leading signal processing, biomedical engineering, and clinical neurophysiology journals. Xuan has been awarded more than twenty U.S. and foreign patents.



Prior to joining the company, Xuan was a tenured associate professor in the Department of Electrical Engineering at Northern Illinois University. As a principal investigator, he successfully led many federally and industrially funded projects in signal processing research and bio-electric signal analysis applications.

Xuan received his Ph.D. from The Johns Hopkins University and M.B.A. from Boston University. He is certified as professional risk manager by PRMIA. He is a senior member of IEEE and a member of Eta Kappa Nu and Beta Gamma Sigma.

Note 1 Global market for pain management drugs and devices was valued at \$35.4 billion in 2012. BCC Research LLC. Note 2. Gaskin et al. 2012..Note 3. National Institute of Drug Abuse. Note4 2018 Vanson Borne / NeuroMetrix – Living with Chronic Pain amid the Opioid Epidemic Note 5 Journal of Pain Research 2016;(9):469-479. Based on 60 days of product use. Results may vary.