Kevin A. Johnson, PhD RN

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Summary of Interests and Background: My overall career goal is to translate neuroscience and behavioral research into useful therapies. I have worked in areas of non-invasive brain stimulation, neuroimaging, sensory testing and consumer health technology; with applications to mood disorders and pain.

Primary Positions

2020-	Florida State University College of Medicine, Tallahassee, FL Department of Behavioral Sciences and Social Medicine Research Faculty II
2018-2020	Neuronetics, Malvern, PA Neuroscientist (Director Level, Product Development Group)
2015-2018	Johnson & Johnson OTC Global Innovation, Fort Washington, PA R&D Research Manager, Pain Franchise
2014-2015	Stanford Systems Neuroscience & Pain Laboratory, Palo Alto, CA Senior Research Scientist
2009-2011	Stanford Systems Neuroscience & Pain Laboratory, Palo Alto, CA Post-Doctoral Scholar (2009-2011), Research Associate (2011-2014)
2002-2009	MUSC Center for Advanced Imaging Research, Charleston, SC Member as Graduate Student and Post-Doctoral Scholar
2002-2009	MUSC Brain Stimulation Laboratory, Charleston, SC Member as Graduate Student and Post-Doctoral Scholar
2001-2002	Vanderbilt Affective Neuroimaging Laboratory, Nashville, TN Research Assistant

Medical Device Industry, Skills & Experience

Performing Technology Landscapes and External Product Evaluation
Establishing Collaborations with Startup Companies and Academic Laboratories
Developing New Products – Medical Devices (Class II) and Consumer Technology
Utilizing Research from Basic Science to Clinical Trials to Support Initiatives
Familiar with FDA and Global Regulatory Pathways

Education and Training

2007-2008 Medical University of South Carolina (MUSC), Charleston, SC
Bachelor of Science in Nursing

2002-2007 Medical University of South Carolina (MUSC), Charleston, SC
Doctor of Philosophy, Neurosciences
Dissertation: Classical Conditioning Using Transcranial Magnetic Stimulation as the Unconditioned Stimulus (Mentor: Mark S. George, MD)

1997-2002 Vanderbilt University, Nashville, TN
Bachelor of Engineering, Biomedical Engineering and Psychology

Licensure

Registered Nurse, License Number RN9547490
Active, September 30, 2020 – July 31, 2022
State of Florida, Board of Nursing (Compact Status: Multistate)

Registered Nurse, License Number RN678815
Active, January 7, 2016 – April 30, 2021
State of Pennsylvania, Board of Nursing

Registered Nurse, License Number 768487
Active, February 18, 2010 - December 31, 2021
State of California, Board of Registered Nursing

Registered Nurse, License Number 205395
Inactive, May 21, 2009 – April 30, 2010
State of South Carolina, Board of Nursing

Volunteer Activities

2016-2020 Borough Planning Commission, Chalfont, PA

2016-2018 Doylestown Heath Emergency Room, Doylestown, PA

Strengths (*Strengths Finder 2.0, Tom Rath*)

1) Strategic
2) Learner
3) Analytical
4) Self-Assurance
5) Maximizer

Roles and Key Activities

2020- Florida State University College of Medicine, Tallahassee, FL
Research Faculty working with Dr. Andy Kozel to establish a clinical research program using neuromodulation to treat mood and anxiety disorders.

2018-2020 Neuronetics, Malvern, PA
Subject matter expert for new product development, expansion of clinical indications, external partnerships, and various activities across the organization.

- Guided next generation product definition based on market research and scientific advancements. Completed feasibility assessments and prototyping for feature selection.
- Helped write clinical study protocols for bipolar disorder and PTSD, leading on technical parameters and advising on study design and outcome measures. Steered cross-functional team through scientific advisory boards and FDA interactions, leading to breakthrough device designation for bipolar disorder. Assessed additional indications for strategic planning.
- Maintained relationships with external researchers and complimentary businesses. Sponsored external research through my budget.
- Member of large outcome registry team, identifying advocacy and research directions.
- Provided technical and strategic advice to multiple functional groups (marketing and sales, clinical training, medical affairs, regulatory, reimbursement and executive team). Lead competitive intelligence and research updates.

2015-2018 Johnson & Johnson OTC Global Innovation, Fort Washington, PA
Front end innovation for pain OTC and adjacent categories. Performed external landscapes and evaluations. Worked with internal and external partners to de-risk and advance products.

- Identified external opportunities through category landscapes, Innovation Center contacts, supplier initiatives and scientific meetings. Worked with cross-functional team to evaluate and define milestones for pipeline advancement. Provided scientific evaluation for due diligence on potential partnerships or acquisitions.
- Participated in internal innovation activities for new product ideation and competitive claims.
- Core team member on a new product project covering all aspects from concept through pilot market launch. Led EU regulatory testing, performance verification and clinical evaluation report.
- Developed novel laboratory tests, including cellular and cadaver experiments. Key participant in design of consumer testing studies.
- Member of cross-sector mental health ambassador initiative.

2011-2015 Stanford University, Systems Neuroscience & Pain Laboratory, Palo Alto, CA
Advanced from postdoctoral scholar to staff scientist, working as collaborator and independent investigator in the field of pain neuroscience.

- Worked on research projects related to a wide variety of pain conditions (chronic pelvic pain, fibromyalgia, low back pain, CRPS, long-term opioid use, and headache).
- Refined sensory testing protocols for use in human volunteers.
- Applied brain neuroimaging and neurostimulation research to understand and treat pain. Launched pilot program of Transcranial Magnetic Stimulation in the Stanford Pain Clinic.
- Worked on large pain registry projects, with special interest in pain location and co-occurrence with psychological factors.
- Helped launch the Stanford Center for Low Back Pain, funded by the NIH.
- Mentored numerous students, research assistance and clinicians in conducting pain research.
- Obtained independent career-development funding from the NIH National Institute of Drug Abuse.

2002-2009 Medical University of South Carolina
Center for Advanced Imaging Research / Brain Stimulation Laboratory

- Participated in the OPT-TMS trial that supported FDA clearance of TMS for the treatment of major depressive disorder (initial clearance given to Neuronetics, subsequently joined company 2018-2020).
- Helped launch a small startup using fMRI brain imaging to detect deception.
- Worked on a large number of neuroscience topics (including VNS for depression, counteracting sleep deprivation for aviation, effect of weightlessness for NASA, smoking cessation).

Peer-Reviewed Publications

Webler RD, Hamady C, Molnar C, Johnson K, Bonilha L, Anderson BS, Bruin C, Bohning DE, George MS, Nahas Z. (2020). Decreased interhemispheric connectivity and increased cortical excitability in unmedicated schizophrenia: A prefrontal interleaved TMS fMRI study. *Brain Stimul*, 13(5):1467-1475.

Gaertner M, Kong JT, Scherrer KH, Foote A, Mackey S, Johnson KA. (2018). Advancing Transcranial Magnetic Stimulation Methods for Complex Regional Pain Syndrome: An Open-Label Study of Paired Theta Burst and High-Frequency Stimulation. *Neuromodulation*, 21(4):409-416.

Tran P, Sturgeon JA, Nilakantan A, Foote A, Mackey S, Johnson K. (2017). Pain catastrophizing mediates the relationship between trait happiness and depressive symptoms in individuals with current pain. *J Appl Biobehav Res*, 22(4).

Sturgeon JA, Hah JM, Sharifzadeh Y, Middleton SK, Rico T, Johnson KA, Mackey SC. (2017). Predictors of Daily Pain Medication Use in Individuals with Recurrent Back Pain. *Int J Behav Med,* (2):252-258.

Taub CJ, Sturgeon JA, Johnson KA, Mackey SC, Darnall BD. (2017). Effects of a Pain Catastrophizing Induction on Sensory Testing in Women with Chronic Low Back Pain: A Pilot Study. *Pain Res Manag, [Epub 2017 Feb 28].*

Mackey IG, Dixon EA, Johnson K, Kong JT. (2017). Dynamic Quantitative Sensory Testing to Characterize Central Pain Processing. *J Vis Exp*, 120.

Dixon EA, Benham G, Sturgeon JA, Mackey S, Johnson KA, Younger J. (2016). Development of the Sensory Hypersensitivity Scale (SHS): a self-report tool for assessing sensitivity to sensory stimuli. *J Behav Med, 39(3):537-50.*

Alger JR, Ellingson BM, Ashe-McNalley C, Woodworth DC, Labus JS, Farmer M, Huang L, Apkarian AV, Johnson KA, Mackey SC, Ness TJ, Deutsch G, Harris RE, Clauw DJ, Glover GH, Parrish TB, Hollander Jd, Kusek JW, Mullins C, Mayer EA; MAPP Research Network Investigators. (2016). Multisite, multimodal neuroimaging of chronic urological pelvic pain: Methodology of the MAPP Research Network. *Neuroimage Clin, 12:65-77.*

Woodworth D, Mayer E, Leu K, Ashe-McNalley C, Naliboff BD, Labus JS, Tillisch K, Kutch JJ, Farmer MA, Apkarian AV, Johnson KA, Mackey SC, Ness TJ, Landis JR, Deutsch G, Harris RE, Clauw DJ, Mullins C, Ellingson BM; MAPP Research Network. (2015). Unique Microstructural Changes in the Brain Associated with Urological Chronic Pelvic Pain Syndrome (UCPPS) Revealed by Diffusion Tensor MRI, Super-Resolution Track Density Imaging, and Statistical Parameter Mapping: A MAPP Network Neuroimaging Study. *PLoS One. 10(10).*

Martucci KT, Shirer, WR, Bagarinao E, Johnson KA, Farmer MA, Labus JS, Apkarian AV, Deutsch G, Harris RE, Mayer EA, Clauw DJ, Greicius MD, Mackey SC. (2015). The Posterior Medial Cortex in Urologic Chronic Pelvic Pain Syndrome: Detachment from Default Mode Network. A Resting-State Study from the MAPP Research Network. *Pain, 156(9):1755-64*.

Kutch JJ, Yani MS, Asavasopon S, Kirages DJ, Rana M, Cosand L, Labus JS, Kilpatrick LA, Ashe-McNalley C, Farmer MA, Johnson KA, Ness TJ, Deutsch G, Harris RE, Apkarian AV, Clauw DJ, Mackey SC, Mullins C, Mayer EA. (2015). Altered resting state neuromotor connectivity in men with chronic prostatitis/chronic pelvic pain syndrome: A MAPP: Research Network Neuroimaging Study. *Neuroimage Clin. 8:493-502.*

Sawaya H, Johnson K, Schmidt M, Arana A, Chahine G, Atoui M, Pincus D, George M, Panksepp J, Nahas Z. (2015). Resting-state Functional Connectivity of Antero-medial Prefrontal Cortex Sub-regions in Major Depression and Relationship to Emotional Intelligence. *International Journal of Neuropsychopharmacology, 18(6).*

Bagarinao E, Johnson KA, Martucci K, Ichesco E, Farmer MA, Labus J, Ness TJ, Harris RE, Deutsch G, Apkarian AV, Mayer EA, Clauw DJ, Mackey S. (2014). Preliminary structural MRI based brain classification of chronic pelvic pain: A MAPP Network Study. *Pain, 155(4):2502-9*.

Bernaba M, Johnson KA, Kong JT, Mackey S. (2014). Conditioned Pain Modulation is Minimally Influenced by Cognitive Evaluation or by Imagery of the Conditioning Stimulus. *J Pain Research, 7: 689-97.*

Kong JT, Schnyer RN, Johnson KA, Mackey SC. (2013). Understanding Central Mechanisms of Acupuncture Analgesia Using Dynamic Quantitative Sensory Testing. *Evidence-Based Complementary and Alternative Medicine.*

Ung H, Brown JE, Johnson KA, Younger J, Hush J, Mackey S. (2014). Multivariate Classification of Structural MRI Data Detects Chronic Low Back Pain. *Cereb Cortex. 24(4):1037-44.*

Martin L, Borckardt JJ, Reeves ST, Frohman H, Beam W, Nahas Z, Johnson K, Younger J, Madan A, Patterson D, George M. (2013). A Pilot Functional MRI Study of the Effects of Prefrontal rTMS on Pain Perception. *Pain Medicine*.

Johnson KA, Baig M, Ramsey D, Lisanby SH, Avery D, McDonald WM, Li X, Bernhardt ER, Haynor DR, Holtzheimer PE, Sackeim HA, George MS, Nahas Z. (2013). Prefrontal rTMS for treating depression: Location and intensity results from the OPT-TMS multi-site clinical trial. *Brain Stimulation 6(2): 108-17.*

Kong JT, Johnson KA, Balise RR, Mackey S. (2013). Test-retest reliability of thermal temporal summation using an individualized protocol. *J Pain. 14(1):79-88.*

Li X, Hartwell K, Borckardt J, Prisciandaro J, Saladin M, Morgan P, Johnson KA, et al. (2013). Volitional Reduction of Anterior Cingulate Cortex Activity Produces Decreased Cue Craving in Smoking Cessation: A Preliminary Real-Time fMRI Study. *Addict Biol 18(4): 739-48.*

Johnson KA, Hartwell K, LeMatty T, Borckardt J, Morgan PS, Govindarajan K, et al. (2012). Intermittent 'Real-time' fMRI Feedback is Superior to Continuous Presentation for a Motor Imagery Task: A Pilot Study. *Journal of Neuroimaging 22(1):58-66.*

Ricci R, Salatino A, Li X, Funk AP, Logan SL, Mu Q, Johnson KA, Bohning DE, George MS. (2012). Imaging the neural mechanisms of TMS neglect-like bias in healthy volunteers with the interleaved TMS/fMRI technique: preliminary evidence. *Frontiers in Human Neuroscience 6:326.*

Hartwell KJ, Johnson KA, Li X, et al. (2011). Neural correlates of craving and resisting craving for tobacco in nicotine dependent smokers. *Addict Biol. 16(4):654-66.*

Kozel FA, Johnson KA, Nahas Z, Nakonezny PA, Morgan PS, Anderson BS, et al. (2011). Fractional Anisotropy Changes After Several Weeks of Daily Left High-Frequency Repetitive Transcranial Magnetic Stimulation of the Prefrontal Cortex to Treat Major Depression. *J ECT 27(1): 5-10.*

Pincus D, Kose S, Arana A, Johnson K, Morgan P, Borckardt J, et al. (2010). Inverse Effects of Oxytocin on Attributing Mental Activity to Others in Depressed and Healthy Subjects: A Double-Blind Placebo Controlled fMRI Study. *Frontiers in Neuropsychiatric Imaging and Stimulation.*

Johnson K A, Baylis GC, Powell DA, Kozel FA, Miller SW, George MS. (2010). Conditioning of transcranial magnetic stimulation: Evidence of sensory-induced responding and prepulse inhibition. *Brain Stimulation 3(2): 78-86.*

Roberts DR, Ramsey D, Johnson K, Kola J, Ricci R, Hicks C, et al. (2010). Cerebral cortex plasticity after 90 days of bed rest: data from TMS and fMRI. *Aviat Space Environ Med 81(1): 30-40.*

Jin B, Strasburger A, Laken SJ, Kozel FA, Johnson KA, George MS, et al. (2009). Feature selection for fMRI-based deception detection. *BMC Bioinformatics 10 Suppl 9: S15.*

Kozel FA, Johnson KA, Grenesko EL, Laken SJ, Kose S, Lu X, et al. (2009). Functional MRI Detection of Deception After Committing a Mock Sabotage Crime. *J Forensic Sci. 54(1): 220-231.*

Kozel FA, Johnson KA, Laken SJ, Grenesko EL, Smith JA, Walker J., et al. (2009). Can simultaneously acquired electrodermal activity improve accuracy of fMRI detection of deception? Soc Neurosci. 4(6): 510-517.

Kozel FA, Laken SJ, Johnson KA, Boren B, Mapes KS, Morgan PS, et al. (2009). Replication of Functional MRI Detection of Deception. Open Forensic Sci J 2: 6-11.

de Vries PM, Johnson KA, de Jong BM, Gieteling EW, Bohning DE, George MS, et al. (2008). Changed patterns of cerebral activation related to clinically normal hand movement in cervical dystonia. *Clin Neurol Neurosurg, 110(2), 120-128.*

Johnson KA, George MS, and Kozel FA. (2008). Detecting Deception Using Functional Magnetic Resonance Imaging. *Directions in Psychiatry. 28 (Special Report Issue).*

Ricci R, Ramsey D, Johnson KA, Borckardt JJ, Vallejo M, Roberts DR, et al. (2008). A pilot feasibility study of daily rTMS to modify corticospinal excitability during lower limb immobilization. *Therapeutics and Clinical Risk Management. 4(5), 1127-1134.*

George MS, Molnar CE, Grenesko EL, Anderson B, Mu Q, Johnson K., et al. (2007). A single 20 mg dose of dihydrexidine (DAR-0100), a full dopamine D1 agonist, is safe and tolerated in patients with schizophrenia. *Schizophr Res 93(1-3), 42-50.*

Mu Q, Johnson K, Morgan PS, Grenesko EL, Molnar CE, Anderson B, et al. (2007). A single 20 mg dose of the full D1 dopamine agonist dihydrexidine (DAR-0100) increases prefrontal perfusion in schizophrenia. *Schizophr Res 94(1-3), 332-41.*

Roberts DR, Ricci R, Funke FW, Ramsey P, Kelley W, Carroll JS, Ramsey D, Borckardt JJ, Johnson K, and George MS. (2007). Lower limb immobilization is associated with increased corticospinal excitability. *Exp Brain Res 181(2), 213-20.*

Toxopeus CM, de Vries PM, de Jong BM, Johnson KA, George MS, Bohning DE, et al. (2007). Cerebral activation patterns related to initiation and inhibition of hand movement. *Neuroreport 18(15), 1557-60.*

Borckardt JJ, Smith AR, Hutcheson K, Johnson K, Nahas Z, Anderson B, et al. (2006). Reducing pain and unpleasantness during repetitive transcranial magnetic stimulation. *J Ect 22(4), 259-64.*

Johnson KA, Nahas Z, Kozel FA, Ramsey D, Bohning DE, Anderson B, et al. (2006). Using imaging to target the prefrontal cortex for transcranial magnetic stimulation studies in treatment-resistant depression. *Dialogues in Clinical Neuroscience 8(2).*

Johnson KA, Mu Q, Yamanaka K, Mishory A, Koola J, Hill S, et al. (2005). Repeatability of Within-Individual BOLD fMRI Maps of a Working Memory Task for TMS Targeting. *Neuroscience Imaging 1(1), 95-111.*

Kozel FA, Johnson KA, Mu Q, Grenesko EL, Laken SJ, and George MS. (2005). Detecting deception using functional magnetic resonance imaging. *Biol Psychiatry 58(8), 605-13.*

Mu Q, Mishory A, Johnson KA, Nahas Z, Kozel FA, Yamanaka K, et al. (2005). Decreased brain activation during a working memory task at rested baseline is associated with vulnerability to sleep deprivation. *Sleep 28(4), 433-46.*

Mu Q, Nahas Z, Johnson KA, Yamanaka K, Mishory A, Koola J, et al. (2005). Decreased cortical response to verbal working memory following sleep deprivation. Sleep 28(1), 55-67.

Mu Q, Bohning DE, Nahas Z, Walker J, Anderson B, Johnson KA, et al. (2004). Acute vagus nerve stimulation using different pulse widths produces varying brain effects. *Biol Psychiatry 55(8), 816-25.*

Research Support

Grant Funding Years: 2020-
Grant Title: Multi-site confirmatory efficacy treatment trial of combat-related PTSD
Principle Investigator: John Hart, Jr., MD (Sub PI: Andrew Kozel)
Grant Number: W81XWH-18-1-0464 (Subaward No: 1604938)
Grant Agency: Department of Defense (USAMRAA)
Role: Principle Investigator

Grant Funding Years: 2011-2015
Grant Title: Research Training Using TMS to Study Pain Processing in Long-Term Opioid Use
Principle Investigator: Kevin A. Johnson
Grant Number: 1K23 DA031808-04
Grant Agency: NIH
Role: Principle Investigator

Grant Funding Years: 2012-2013
Grant Title: Neuroimaging to Detect Chronic Low Back Pain
Principle Investigator: S Mackey, H Greely, A Wagner, G Glover, KA Johnson
Grant Agency: Stanford University, Bio-X NeuroVentures
Role: Research Associate

Grant Funding Years: 2010-2011
Grant Title: Anesthesia Training Grant in Biomedical Research
Principle Investigator: Rona Giffard
Grant Number: T32 GM089626-01
Grant Agency: NIH
Role: Postdoctoral Trainee

Grant Funding Years: 2009-2010
Grant Title: MAPP Research Network: Central Mechanisms of Urologic Pelvic Pain: Functional Structural Analysis by MRI
Principle Investigator: Richard J. Landis
Grant Number: 5 U01 DK 082316-02
Grant Agency: NIH
Role: Postdoctoral Scholar/Research Nurse

Grant Funding Years 2008-2010
Grant Title: The Impact of Real-time fMRI Feedback on Response to Nicotine Cues
Principle Investigators: Kathleen Brady and Mark George
Grant Number: 1R21DA026085-01
Grant Agency: NIH/NIDA
Role: Post-Doctoral Researcher

Grant Funding Years 2004-2008
Grant Title: Optimization of TMS for Depression – Coordination Center
Principal Investigator: Mark George
Grant Number: 5 R01 MH069887-04
Grant Agency: NIH
Role: Research Team Member

Grant Funding Years 2004-2008
Grant Title: Optimization of TMS for Depression – Clinical Center Grant
Principal Investigator: Mark George
Grant Number: 5 R01 MH 069896-04
Grant Agency: NIH
Role: Research Team Member

Grant Funding Years 2002-2012
Grant Title: ORWH: SCOR on Sex & Gender Factors Affecting Women's Health
Principal Investigator: Kathleen Brady/Angela Waldrop
Grant Number: 2 P50 DA 016511-06
Grant Agency: NIH/NIDA
Role: Research Team Member

Grant Funding Years 2004-2007
Grant Title: Human Cerebral Cortex plasticity in Response to Long-Term Bedrest
Principal Investigator: Donna R. Roberts
Grant Number: NNJ04HF70G
Grant Agency: NASA
Role: Research Team Member

Previously Worked under DODPI Grant
Grant Title: Bold fMRI to Detect Deception
Principal Investigator: Mark George
Grant Number: W74V8H-04-1-0010
Grant Agency: DOD
Role: Graduate Student Researcher

Previously Worked under DARPA Grant
Grant Title: DARPA (TMS and Sleep Deprivation)
Principal Investigator: Mark George
Grant Number: DAAD19-02-C-0048
Grant Agency: DOD/DARPA
Role: Graduate Student Researcher