James (Jim) A. Hokanson, Ph.D.

Assistant Professor of Biomedical Engineering
Medical College of Wisconsin
Biomedical Engineering, TBRC
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Research Expertise: Experienced in design and execution of physiological testing in animal models, especially peripheral nerve stimulation. Have additional experience conducting physiological testing in humans. Focused on developing novel therapies to restore bladder function. Conducting physiological testing in humans, as well as clinical predictive modeling, to guide therapy selection and inform the design of novel therapies.

Education & Training:

Postdoc, Research Scientist, Biomedical Engineering

- Duke University, Durham, NC. (*Mar. 2014 – Dec. 2020, research scientist since July 2019*)
- Focus: Electrical stimulation therapies to treat lower urinary tract dysfunction
- Advisors: Dr. Warren Grill PhD, Dr. Cindy Amundsen MD
- Awarded Grants:
  - NIH NIDDK Research Scientist Development Award (*K01; Sept. 2020 – Aug. 2023*)
  - Urology Care Foundation Research Scholar Award (*July 2017 – June 2019*)
  - NIH NIDDK Multidisciplinary Urologic Research Career Development Program (*K12; Aug. 2014 – June 2017*)

PhD, Bioengineering

- University of Pittsburgh, Pittsburgh, PA. (*Aug. 2006 –Feb. 2014*)
- Focus: Development of an animal model to study artificial somatosensory feedback
- Advisor: Dr. Doug Weber PhD
- Awarded Fellowships:
  - NSF Integrative Graduate Education and Research Traineeship (IGERT) (*Sept. 2010 – Aug. 2012*)
  - NIH NIDA Training in Neuroimaging (*T90: Sept. 2009 – Aug 2010*)

BS, Biomedical Engineering & Electrical Engineering (two degrees, with honors)

- Washington University in St. Louis, St. Louis, MO. (*Aug. 2002 – May 2006*)
- Focus: neural engineering, brain-computer interfaces
- Advisor: Dr. Dan Moran PhD

Research Experience:

Duke University, Durham, NC
Research Scientist, Biomedical Engineering (*July 2019 – Present*)
Postdoctoral Associate, Biomedical Engineering (*March 2014 – June 2019*)

- Developing predictive models to predict treatment responses (success or failure, adverse events) to sacral neuromodulation and Onabotulinum Toxin A administration for women with urgency urinary incontinence.

- Conducting research to understand sacral innervation of the lower urinary tract and the impact of innervation variability on stimulation outcomes. Medtronic partnership.
- Helping to plan and execute the first ever multi-site clinical testing protocol to assess lower urinary tract function in women with and without incontinence.
- Designed and executed novel set of experiments attempting to prevent urgency urinary incontinence by electrically stimulating the urethra in women.
- Conducted research on how to stimulate pudendal and pelvic nerves to treat urinary dysfunction. GlaxoSmithKline/Galvani Partnership.
- Characterized the response of the lower urinary tract to intravesical and intraurethral PGE2 administration, highlighting a new mechanism of action to target for treating urinary urgency.
- Collaborated with researchers to develop algorithms that could be used as part of a closed-loop electrical stimulation system for treating urinary dysfunction.

OpenWorm, http://www.openworm.org
Core Member (*October 2013 – September 2018*)

OpenWorm is an open science initiative, comprised mainly of volunteers, aimed at producing high quality scientific results in a non-academic setting. The goal of this initiative is to model the *C. elegans* as accurately as possible, with an initial focus on using the connectome to model movement. Being a core member indicates a high level of commitment to the project and requires a nomination from current core members.

- Worked with a talented international team to develop tools that facilitate neural modeling.
- Developed code that quantifies differences between measurements obtained from *C. elegans* worms in a laboratory and measurements obtained from simulations. This information will be used to improve our ability to simulate the *C. elegans*, particularly its nervous system.

University of Pittsburgh, Pittsburgh, PA
Graduate Research Assistant (*Aug. 2006 – Feb. 2014)*

- Examined the ability of different stimulation paradigms to provide artificial somatosensory feedback in a cat model.
- Characterized the response of cortical recordings in sensory cortex to stimulation in the peripheral nervous system. Single unit data, local field potentials, and electrocorticography recordings were analyzed. Comparisons were made between the cortical responses to electrical stimulation and the responses to natural stimulation.
- Characterized the recruitment of primary afferent neurons in the DRG using compound action potential recordings from the sciatic nerve.
- Modeled changes in primary afferent recruitment due to simultaneous microstimulation on multiple electrodes.

Washington University in St. Louis, St. Louis, MO
Lab Technician and Research Assistant (*May 2005 – Aug. 2006*)

- Designed Electrocorticography (ECoG) electrodes for use in experiments.
- Designed and conducted preliminary research regarding electrode spacing with ECoG electrodes.
- Assisted graduate students with neural recordings.
- Trained monkeys to perform movement tasks.

- Modified C++ and Performer code for animal training use.

Teaching Experience:

University of Pittsburgh, Pittsburgh, PA
Teaching Assistant, Bioinstrumentation, BIOE 1310 (*Spring 2008, 2009, 2010)*

- Led students through lab each week
- Designed and held optional test review sessions for exams
- Guided new teaching assistants.

Instructor: Dr. George Stetten

Lab Instructor, Bioengineering Methods Lab, BIOE 1150 (*Spring 2007, 2008)*

- Responded to department request for a bioelectric signals lab; designing a 6 hour laboratory session from scratch, including myoelectric control of a robot and electrooculographic control of a computer cursor to discuss issues related to neuroprosthetic control.
- Assisted in design of a 1-hour lecture serving as an introduction to the lab
- Ran lab sessions and graded lab reports.

Co-Instructor: Dr. Douglas Weber

Washington University in St. Louis, St. Louis, MO
Teaching Assistant, Introduction to Electrical and Computer Engineering, (*Fall 2005, Spring 2006)*

- Assisted with labs each week.
- Graded homework and lab reports.
- First semester required managing 15+ hours of work in addition to 10 – 15 hours of work elsewhere on campus per week.

Instructor: Dr. Robert Morley

Seminar Instructor, Introduction to HTML (*Summer 2005*)

- I decided to teach web design to anyone interested on campus before school started my senior year. I designed the course material, advertised around school, and taught those who attended. The course lasted five days, with two-hour sessions each day followed by time for questions and help.

Course Director, Freshman Engineering Seminar, EN120, (*Spring 2003 – Spring 2005)*

- Lead 40 of my peers in advising freshmen and class preparation.
- Guided class once a week for 75 freshmen.
- Represented the class and peers with administrative concerns including meetings, budgets, and public relations.
- Prepared all layout and material covered in class.
- Designed engineering projects that enhance discussions on engineering majors
- Organized weekly presentations on engineering majors using PowerPoint, props, videos, and alumni professional experience.

Supervisor: Associate Dean, Chris Kroeger

Research Funding:

Current Funding

- Principal Investigator, “Predicting Urinary Continence Status with Sacral Neuromodulation and Botulinum Toxin Treatments” NIH K01DK121866, *Sept. 2020 – Aug. 2023* ($530,231)
- Co-Investigator, “Advancing the Measurement and Classification of Lower Urinary Tract Dysfunction” NIH U01DK097780-06, *Sept. 2019 – Aug. 2024* ($2,474,900), PIs: Cindy Amundsen, Kevin Weinfurt

Previous Funding Awarded

- Research Scholar, “Electrical stimulation of the urethra to prevent urgency urinary incontinence episodes” Urology Care Foundation Research Scholar Award, *July 2017 – June 2019* ($80,000), Mentors: Warren Grill, Cindy Amundsen
- Research Scholar, “Peripheral Nerve Stimulation to Treat Overactive Bladder Symptoms” NIH K12DK100024 ($328,424), *Aug. 2014 – June 2017*, Mentors: Warren Grill, Cindy Amundsen

Other Grant Writing Experience

- Helped author and contributed data for "Multichannel microstimulation of primary afferent neurons to restore proprioceptive feedback." NIH R01NS072342, *Aug. 2012 – July 2017*, PI: Douglas Weber
- Helped author and contributed data for additional rounds of funding for “Peripheral Nerve Stimulation to Treat Bladder Dysfunction” GlaxoSmithKline/Galvani Bioelectronics Agreement, *Jan. 2014 – Dec 2019*, PI: Warren Grill
- Helped author “Sacral Nerve Stimulation to Treat Detrusor Underactivity: Parameters & Pathways”, Medtronic Agreement, *Jan. 2020 – Dec. 2020*, PI: Warren Grill

Honors and Awards:

- Best Poster Award, NIDDK CAIRIBU meeting (*Dec. 2020*)
- Best Poster Award, NIDDK CAIRIBU meeting (*Dec. 2019*)
- NSF Integrative Graduate Education and Research Traineeship (IGERT) (*Sept. 2010 – Aug. 2012*)
- Neural Interfaces Conference, Student Travel Award (*June 2010*)
- Beyond Brain Machine Interface Workshop, Student Travel Award (*June 2010*)
- NIH NIDA Training in Neuroimaging (*Sep. 2009 – Aug. 2010*)
- Honorable Mention for Poster Abstract, Institute for Rehabilitation and Research Day, University of Pittsburgh (*May 2009*)
- Bioengineering TA of the Year (*Spring 2009*)
- Rick Grodsky Award for Technical Achievement (*Apr. 2006*)
- Eagle Scout (*2001*)

Professional Activities:

- On faculty planning committee for NIDDK meeting on how to improve efficacy of translational urological research, NIH Lead: Tamara Bavendam (*2020*)
- Panel Discussion Host, “Individualizing Urologic Care with Data Science and Predictive Analytics”, Duke Multidisciplinary Benign Urology Research Day, *April 2019*

- Breakout Group Moderator, “Environmental Burden of Genitourinary Conditions”, NIDDK Uncovering the Hidden Burden of Benign Genitourinary Conditions meeting, *October 2019*
- On faculty planning committee for NIDDK meeting: “Uncovering the Hidden Burden of Benign Genitourinary Conditions” (*2019*)
- Editorial Board, American Journal of Physiology – Renal Physiology (*Mar. 2019 – present*)
- Panel Discussion Host, “Bladder Outlet Obstruction/Benign Prostate Hyperplasia”, Duke Multidisciplinary Benign Urology Research Day, *April 2017*
- Manuscript reviewer for: American Journal of Obstetrics and Gynecology; American Journal of Physiology – Renal Physiology; IEEE Transactions on Neural Systems & Rehabilitation Engineering; Journal of Neural Engineering; Journal of Neurotrauma; Neuromodulation: Technology at the Neural Interface; Scientific Reports
- Maintainer for numerous scientific programming packages/libraries https://jimhokanson.com/code/

Professional Memberships:

- Society for Basic Urological Research (2020 – present)
- American Urological Association (*2017 – present*)
- International Continence Society (*2016 – present*)
- Society for Neuroscience (*2007 – present*)
- American Society for Engineering Education (*2006 – 2014*)
- Center for the Neural Basis of Cognition (*2006 – 2013*)
- Institute of Electrical and Electronics Engineers (*2003 – 2018*)

Patents:

- Grill WM, **Hokanson JA**, Langdale CL “State-Dependent Peripheral Neuromodulation to Treat Bladder Dysfunction,” U.S. Patent No. 10,922,708 , *Jul 28, 2020*

Patent Applications:

- **Hokanson JA**, Langdale CL, Grill WM, Sridhar A, Milliken P “Stimulation of Pudendal Nerve or Pudendal Nerve Branches for Bladder Control”, U.S. Provisional Patent Application, 62/946,596, *Dec. 11, 2019*
- Famm HJK, Grill WM, **Hokanson JA**, Langdale CLL, Sridhar A. “Neuromodulation device”, U.S. Patent Application 15/749,063, *Aug. 2, 2018*

Publications and Presentations

Peer Reviewed Articles

- **Hokanson JA**, Langdale CL, Milliken P, Sridhar A, Grill WM “Effects of Intravesical Prostaglandin E2 on Bladder Function are Preserved in Capsaicin-Desensitized Rats” (in press at Am J Physiol Renal Physiol)
- **Hokanson JA**, Langdale CL, Sridhar A, Milliken P, Grill WM (2021) State-dependent bioelectronic interface to control bladder function. Sci Rep 11:314.
- Sridhar A, Milliken P, Grill WM “State-dependent bioelectronic interface to control bladder function” (in press at Scientific Reports)
- Langdale CL, **Hokanson JA**, Sridhar A, Grill WM, “Stimulation of the pelvic nerve increases bladder capacity in the prostaglandin E2 cat model of overactive bladder" Am J Physiol Renal Physiol 318:F1357-F1368.

- **Hokanson JA**, Gaunt RA, Weber DJ (2018) “Effects of Synchronous Electrode Pulses on Neural Recruitment During Multichannel Microstimulation” Sci Rep 8:13067.
- **Hokanson JA**, Langdale CL, Sridhar A, Grill WM (2018) “Stimulation of the sensory pudendal nerve increases bladder capacity in the rat” Am J Physiol Renal Physiol 314:F543–F550.
- Javer A, Currie M, Lee CW, **Hokanson JA**, Li K, Martineau CN, Yemini E, Grundy LJ, Li C, Ch’ng Q, Schafer WR, Nollen EAA, Kerr R, Brown AEX (2018) “An open-source platform for analyzing and sharing worm-behavior data” Nat Methods 15:645–646.
- Rutter EM, Langdale CL, **Hokanson JA**, Hamilton F, Tran H, Grill WM, Flores KB (2018) “Detection of Bladder Contractions From the Activity of the External Urethral Sphincter in Rats Using Sparse Regression” IEEE Trans Neural Syst Rehabil Eng 26:1636–1644.
- **Hokanson JA**, Langdale CL, Sridhar A, Grill WM (2017) “OAB without an overactive bladder in the acute prostaglandin E2 rat model” Am J Physiol Renal Physiol 313:F1169–F1177.
- Langdale CL, **Hokanson JA**, Sridhar A, Grill WM (2017) “Stimulation of the Pelvic Nerve Increases Bladder Capacity in the Prostaglandin E2 Rat Model of Overactive Bladder” Am J Physiol Renal Physiol:ajprenal.00116.2017.
- Szigeti B, Gleeson P, Vella M, Khayrulin S, Palyanov A, **Hokanson JA**, Currie M, Cantarelli M, Idili G, Larson S (2014) “OpenWorm: an open-science approach to modeling Caenorhabditis elegans” Front Comput Neurosci 8:137.
- Bourbeau DJ, **Hokanson JA**, Rubin JE, Weber DJ (2011) “A computational model for estimating recruitment of primary afferent fibers by intraneural stimulation in the dorsal root ganglia” J Neural Eng 8:056009.
- Weber DJ, London BM, **Hokanson JA**, Ayers CA, Gaunt RA, Torres RR, Zaaimi B, Miller LE (2011) “Limb-state information encoded by peripheral and central somatosensory neurons: implications for an afferent interface” IEEE Trans Neural Syst Rehabil Eng 19:501–513.
- Gaunt RA, **Hokanson JA**, Weber DJ (2009) “Microstimulation of primary afferent neurons in the L7 dorsal root ganglia using multielectrode arrays in anesthetized cats: thresholds and recruitment properties” J Neural Eng 6:55009.

In Review or Revision Articles

- **Hokanson JA**, Grill WM, Amundsen CL, “A pilot study investigating the effects of intraurethral stimulation and the potential to prevent urgency urinary incontinence episodes in women” (revising)

Conference Proceedings

- Lubba C, Mitrani E, **Hokanson JA**, Grill WM, Schultz SR (2017) “Real-time decoding of bladder pressure from pelvic nerve activity” CP. Int IEEE/EMBS Conf Neural Eng NER:617–620.
- Gleeson P, Cantarelli M, Currie M, **Hokanson JA**, Idili G, Khayrulin S, Palyanov A, Szigeti B, Larson S (2015) “The OpenWorm Project: currently available resources and future plans” BMC Neurosci. 2015; 16(Suppl 1): P141. PMCID: PMC4697589
- **Hokanson JA**, Ayers CA, Gaunt RA, Weber DJ (2012) “Channel Interactions During Synchronous Microstimulation with High Density Microelectrode Arrays” International Functional Electrical Stimulation Society, Mirrored at: https://jimhokanson.com/papers/167_2012-04-29_hokansonpaper_v11.pdf
- Ayers CA, **Hokanson JA**, Gaunt RA, Weber DJ (2012) “Chronic multi-channel neural recording in feline sensorimotor cortex” International Functional Electrical Stimulation

Society, Mirrored at: https://jimhokanson.com/papers/187_2012-04-29_ifess_2012_abstract_ayers-v5.pdf

- **Hokanson JA**, Ayers CA, Gaunt RA, Bruns TM, Weber DJ (2011) "Effects of spatial and temporal parameters of primary afferent microstimulation on neural responses evoked in primary somatosensory cortex of an anesthetized cat." Conf Proc IEEE Eng Med Biol Soc 2011:7533–7536.

Book Chapters

- **Hokanson JA**, Amundsen CL, Grill WM (2017) "Neuroprosthetic Control of Lower Urinary Tract Function." In: Neuroprosthetics: Theory and Practice, pp 537–565. DOI: 10.1142/9789813207158_0017
- Fisher LE, **Hokanson JA**, Weber DJ (2015) "Neuroprostheses for Somatosensory Function." In: Implantable Neuroprostheses for Restoring Function, pp 127–151. DOI: 10.1016/B978-1-78242-101-6.00006-9

Conference Abstracts

- Hendrickson WK, Xie G, Rahn DD, Bradley MB, Sung V, **Hokanson JA**, Smith AL, Visco A, Amundsen CL, Luo S, Jelovsek JE (2021) "Development of Models Predicting Treatment Efficacy and Need for Self-Catheterization After Intradetrusor OnabotulinumToxinA for Non-Neurogenic Urgency Incontinence in Women" Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction (Online)
- **Hokanson JA**, Langdale CL, Grill WM (2020) "Sacral Neuromodulation in Rats: Parameters and Pathways" Collaborating for the Advancement of Interdisciplinary Research in Benign Urology (Online)(Best Poster Awardee)
- Langdale CL, **Hokanson JA**, Degoski D, Milliken P, Grill WM (2019) "Stimulation of the pudendal sensory nerve alters voiding behavior in conscious unrestrained Wistar rats" Society for Neuroscience, Chicago, Illinois
- **Hokanson JA**, Grill WM, Amundsen CA (2019) "Intraurethral stimulation: a possible way to increase intraurethral pressures and prevent urgency incontinence episodes" Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction, Miami, Florida
- **Hokanson JA**, Langdale CL, Milliken P, Sridhar A, Grill WM (2018) "State-dependent pudendal nerve stimulation increases bladder capacity and voiding efficiency in rats and cats" Society for Neuroscience, San Diego, California
- **Hokanson JA**, Langdale CL, Milliken P, Sridhar A, Grill WM (2018) "State-dependent pudendal nerve stimulation to increase bladder capacity and voiding efficiency in rats" Neural Interfaces Conference, Minneapolis, Minnesota
- Langdale CL, **Hokanson JA**, Milliken P, Grill WM (2017) "Voiding behavior in awake unrestrained untethered spontaneously hypertensive and control rats" Society for Neuroscience, Washington, D.C.
- **Hokanson JA**, Langdale CL, Sridhar A, Milliken P, Grill WM (2017) "State-dependent stimulation of the pudendal nerve increases bladder capacity and voiding efficiency" Society for Neuroscience, Washington, D.C.
- Langdale CL, **Hokanson JA**, Sridhar A, Grill WM (2016) "Prostaglandin E2 installation as an overactive bladder model in cats" Society for Neuroscience, San Diego, California
- **Hokanson JA**, Langdale CL, Sridhar A, Grill WM (2016) "OAB Without an overactive bladder: insights from an acute prostaglandin E2 rat model" Society for Neuroscience, San Diego, California

- **Hokanson JA**, Langdale CL, Grill WM (2016) “OAB Without an overactive bladder” Society for Urodynamics and Female Urology, New Orleans, Louisiana
- Langdale CL, **Hokanson JA**, Sridhar A, Grill WM (2015) “Pelvic nerve stimulation restores bladder capacity and voiding efficiency in rat prostaglandin E2 overactive bladder model” Society for Neuroscience, Chicago, Illinois
- **Hokanson JA**, Langdale, CA, Sridhar A, Grill WM (2015) “Pudendal nerve stimulation restores bladder capacity in rat prostaglandin E2 overactive bladder model”
- Fisher LE, **Hokanson JA**, Gaunt RA, Weber DJ (2013) “A method for automatic identification of peripheral nerve microstimulation thresholds from electroneurogram signals” Society for Neuroscience, San Diego, California
- **Hokanson JA**, Ayers CA, Gaunt RA, Weber DJ (2012) “Nonlinear recruitment of primary afferent neurons from simultaneous stimulation” Society for Neuroscience, New Orleans, Lousiana
- Bruns TM, Gaunt RA, Ayers CA, **Hokanson JA**, Weber DJ (2012) "Bladder and pelvic activity recorded with chronic microelectrode implants in feline sacral dorsal root ganglia" Society for Neuroscience, New Orleans, Lousiana
- Ayers CA, **Hokanson JA**, Gaunt RA, Weber DJ (2012) “A chronic feline model of a dorsal root ganglion based somatosensory neural interface” Society for Neuroscience, New Orleans, Lousiana
- Bruns TM, Gaunt RA, Ayers CA, **Hokanson JA**, Weber DJ (2012) "Pelvic activity recorded with a chronic microelectrode array implant in feline sacral dorsal root ganglia" Neural Interfaces Conference, Salt Lake City, Utah
- Wagenaar JB, **Hokanson JA**, Ayers CA, Weber DJ (2010) “Development of an efficient data-management system in Matlab” Society for Neuroscience, San Diego, California
- **Hokanson JA**, Ayers CA, Gaunt RA, Weber DJ (2010) “Novel stimulation paradigm to provide somatosensory feedback in a neural prosthesis” Society for Neuroscience, San Diego, California
- Bourbeau DJ, **Hokanson JA**, Rubin JE, Ermentrout GB, Weber DJ (2010) “A computational model for simulating recruitment of peripheral nerve fibers by intraneural microstimulation” Society for Neuroscience, San Diego, California
- Ayers CA, Gaunt RA, **Hokanson JA**, Weber DJ (2010) “Primary somatosensory cortex responses to simple patterns of primary afferent microstimulation in L6/L7 dorsal root ganglia of anesthetized cats” Society for Neuroscience, San Diego, California
- **Hokanson JA**, Yu B, Ayers CA, Weber DJ (2010) “Quantifying Neural Responses to Natural and Artificial Stimuli in Large Populations of Cortical Neurons” Neural Interfaces Conference, Long Beach, California
- Perich M, **Hokanson JA**, Gaunt RA, Weber DJ (2009) “Improving Limb-State Decoding Using a Liquid State Machine” Biomedical Engineering Society, Pittsburgh, Pennsylvania
- Kim J, Wilson JA, Hippensteel J, **Hokanson JA**, Wang W, Smith K, Otto KJ, Shain W, Weber DJ, Krugner-Higby LA, Moran DW, Williams JC (2008) “A Cortical microECoG Platform Utilizing Thin Film Polymer Electrode Arrays” Society for Neuroscience, Washington D.C.
- **Hokanson JA**, Wagenaar JB, Weber DJ (2008) “Recruitment of DRG neurons by electrical microstimulation” Society for Neuroscience, Washington D.C.
- Wagenaar JB, **Hokanson JA**, Ventura V, Weber DJ (2008) “Real-time feedback control of functional electrical stimulation based on primary afferent recordings” Biomedical Engineering Society, St. Louis, Missouri
- **Hokanson JA**, Wagenaar JB, Weber DJ (2008) “Recruitment of DRG Neurons by Electrical Microstimulation” Biomedical Engineering Society, St. Louis, Missouri

- Bourbeau DJ, **Hokanson JA**, Weber DJ (2008) “A Computational Model for Examining Activation of Peripheral Neurons by Electrical Microstimulation” Biomedical Engineering Society, St. Louis, Missouri
- **Hokanson JA**, Wagenaar JB, Ventura V, Weber DJ (2007) “Neural Responses in Somatosensory Cortex to Multichannel Microstimulation of Primary Afferent Neurons” Society for Neuroscience, San Diego, California

Oral Presentations

- NIDDK CAIRIBU Meeting, Kansas City, Missouri, December 4-6, 2019, Intravesical Prostaglandin E2: Bladder Irritant or Urethral Smooth Muscle Relaxer?
- NIDDK CAIRIBU Meeting, Ellicott City, Maryland, December 12-14, 2018, Predicting Urinary Continence Status with Sacral Neuromodulation and Botulinum Toxin Treatments
- International Continence Society Meeting, Philadelphia, Pennsylvania, August 28-31, 2018, State-Dependent Pudendal Nerve Stimulation to Increase Bladder Capacity and Voiding Efficiency in Cats
- Society for Neuroscience Annual Meeting, San Diego, California, November 12-16, 2016, Beyond sacral root modulation: Pudendal nerve stimulation to improve bladder function
- International Functional Electrical Stimulation Society, Banff, Alberta, Canada, September 9 – 12, 2012, Channel Interactions During Synchronous Microstimulation with High Density Microelectrode Arrays
- 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Boston, Massachusetts, August 30 – September 3, 2011, Effects of Spatial and Temporal Parameters of Primary Afferent Microstimulation on Neural Responses Evoked in Primary Somatosensory Cortex of an Anesthetized Cat
- Biomedical Engineering Society Conference, Pittsburgh, Pennsylvania, October 7 – 10, 2009, Using Classifiers to Identify Differences in Evoked Responses from Stimulation of Primary Afferents
- Neurohike Motor Control Conference, Kananaskis, Alberta, Canada, September 22-25, 2006, Spacing and Size of Electrocorticography electrodes with a focus on Brain Computer Interfaces