

## April 2016 News PLEASE FORWARD TO YOUR COLLEAGUES www.wikistim.org

*If you are reading this newsletter for the first time, please visit the <u>ABOUT</u> section on the WIKISTIM <u>home page</u>. This section describes WIKISTIM's unique resources and is accessible without registration.* 

#### CHECK OUT THE APPENDIX TO SEE THE MOST RECENT CITATIONS ADDED TO WIKISTIM

#### **DONATIONS WELCOME**

We are grateful for any donation in any amount from those who use this free resource. All donations are 100% deductible for those of you who file US income tax and itemize deductions.

#### MORE ON THE FUTURE OF ACADEMIC PUBLISHING

In a commentary (Shanahan DR. A living document: reincarnating the research article. Trials 2015 16:151, available for free download), Daniel Shanahan states that research articles as traditionally published must now be considered "effectively fraudulent" in light of the new possibilities for "transparency and reproducibility" offered by information technology. He concludes that it is "no longer acceptable to continue to perpetuate [such] a centuries-old absurdity." As an alternative, he suggests that the process of publication begin when the study is entered into a registry and continue as the protocol (the methods section) is developed, perhaps revised, and finally fully executed. At this point, the publication would include the results and the interpretation of these results. This model envisions peer review occurring at various stages of the process, with these reviews becoming "associated with" various versions of the publication that would be frozen, dated, and assigned unique identifiers. This would require "citations. . . to include the access date." Secondary analyses, conducted by external researchers, would also become extensions of the root publication, presumably with their own time-stamped version identifiers. This living document would link to all of the underlying data and data analyses generated by the study.

Shanahan acknowledges that "contemporary cultural attitudes and workflows, within both publishing and academia, along with research conduct and evaluation, present barriers" to this type of living publication. Among these barriers, surely, is the reliance on lists of publications in a typical curriculum vitae. And is a publication model that requires various versions to become frozen in time really different from a model where succeeding versions are published over time in discrete publications, even in separate scientific journals?

While we and others contemplate the merits of suggestions such as Shanahan's and the absurdity of dismissing the entire extant scientific literature as fraudulent, we believe that everyone can agree that finding a way to make data embedded in research articles more readily available for comparison and

analysis is a worthy endeavor. Thus, WIKISTIM.

#### REMINDERS

#### North American Neuromodulation Society and Neural Interfaces Conference Joint Meeting

In our session on "Maximizing the Value of Neural Interface Data" at the <u>NANS2/NIC conference</u> on June 25th through 29th, we will explain how the way something is reported predicts what will be reported and demonstrate how WIKISTIM will be a positive influence on the quality of the data that will be published as well as on the way these data are analyzed in relation to the findings of other neural interface studies.

We urge you to use the link above to access the agenda for this important meeting, which will take place at a hotel overlooking Baltimore's beautiful inner harbor.

#### **CURRENT STATUS**

Our 5 new subscribers in March increased our total to 320. Please continue to encourage your colleagues to register for access to our free resource. And THANK YOU for being early adopters!

# April 1st numbers (These numbers might not add up from month to month as we remove the inevitable duplication that occurs. See appendix below for list of new citations.)

- 320 subscribers (5 new)
- SCS citations 1891 (14 new)
- DBS citations 1731 (27 new; 22 Parkinson's; 2 OCD, 3 epilepsy)
- SNS citations 765 (2 new)
- PNS citations 38 (11 new)
- DRG citations 33 (1 new)
- GES citations 470 (0 new)

#### CONTINUING PLANS FOR THE FUTURE

- Encourage people to earn CME credits by filling in datasheets
- Transform our datasheets into forms that can be completed online easily
- Include additional sections, with VNS next in line
- Optimize performance on various platforms (screen sizes, browser types, etc.)
- Create forms for online data submission, with easy checkboxes when applicable
- Link data fields to additional information (e.g., descriptions and preferred uses of study designs and outcome criteria, authors' CVs, etc.)
- Incorporate cutting edge data visualization graphics that will update immediately as data are extrapolated from papers and uploaded
- Offer a dynamic user experience, including the ability to save searches and customize the way the site behaves
- Secure continued funding
- Continue to make quality improvements

#### HOW THE NEUROSTIMULATION COMMUNITY CAN HELP

- Submit extracted data from published reports of your choice, or use our datasheets as a guide when you plan your study and write your paper, and then submit the datasheet to us upon journal acceptance.
- Notify us about any reports we might have missed that contain primary data on SCS, SNS, DRG, PNS, GES, DBS/OCD, DBS/Epilepsy, or reports you would like to see added for DBS/PD.

• Suggest website improvements (and thanks to those who have done this—we have incorporated your suggestions to the best of our ability).

#### FINANCIAL SUPPORT FOR 2015 to 2016

(Listed alphabetically by first name):

- B. Todd Sitzman, MD, MPH
- Greatbatch
- Medtronic
- The NANS Foundation (3-year grant commitment started 2014)
- NEVRO
- Richard B. North, MD
- Thomas Abell, MD

#### Ongoing in-kind support:

- The International Neuromodulation Society (publicity and conference registration)
- The Neuromodulation Foundation (parent non-profit, overhead and development)
- The North American Neuromodulation Society (publicity and conference registration)

#### **EDITORIAL BOARD**

Editor-in-chief Richard B. North, MD

#### Section editors

Thomas Abell, MD, Gastric Electrical Stimulation Tracy Cameron, PhD, Peripheral Nerve Stimulation Roger Dmochowski, MD, Sacral Nerve Stimulation Robert Foreman, MD, PhD, Co-editor Experimental Studies Elliot Krames, MD, Dorsal Root Ganglion Stimulation Bengt Linderoth, MD, PhD, Co-editor Experimental Studies Richard B. North, MD, Spinal Cord Stimulation B. Todd Sitzman, MD, MPH, At Large Konstantin Slavin, MD, Deep Brain Stimulation Kristl Vonck, MD, PhD, Section on DBS for Epilepsy To be determined, Vagus Nerve Stimulation

#### Managing editor

Jane Shipley

#### Disclosure

WIKISTIM includes citations for indications that are or might be considered off-label in the United States.

## Contact

The Neuromodulation Foundation, Inc. 117 East 25th Street Baltimore, MD 21218 wikistim@gmail.com wikistim.org neuromodfound.org

## DBS-PD (We continue to add older DBS citations that we passed over in our initial list.)

- Akbar U, Raike RS, Hack N, Hess CW, Skinner J, Martinez-Ramirez D, DeJesus S, Okun MS. Randomized, blinded pilot testing of nonconventional stimulation patterns and shapes in Parkinson's disease and essential tremor: evidence for further evaluating narrow and biphasic pulses. Neuromodulation 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27000764
- 2. Arlotti M, Rossi L, Rosa M, Marceglia S, Priori A. An external portable device for adaptive deep brain stimulation (aDBS) clinical research in advanced Parkinson's Disease. Med Eng Phys 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27029510
- 3. D'Ausilio A, Marconi S, Antonini A, Tamma F, Valzania F, Berto P. Cost analysis in Italy of various strategies for the treatment of Parkinson disease in the advanced phase. Italian. Recenti Prog Med 2003 94(11):484-493 http://www.ncbi.nlm.nih.gov/pubmed/14679916
- 4. Ekmekci H, Kaptan H. Camptocormia and deep brain stimulation: the interesting overlapping etiologies and the therapeutic role of subthalamic nucleus-deep brain stimulation in Parkinson disease with camptocormia. Surg Neurol Int 2016 7(Suppl 4):S103-S107 http://www.ncbi.nlm.nih.gov/pubmed/26958425
- 5. Hariz GM, Limousin P, Hamberg K. 'DBS means everything for some time'. Patients' perspectives on daily life with deep brain stimulation for Parkinson's disease. J Parkinsons Dis 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27003786
- Hariz MI, Krack P, Melvill R, Jorgensen JV, Hamel W, Hirabayashi H, Lenders M, Wesslen N, Tengvar M, Yousry TA. A quick and universal method for stereotactic visualization of the subthalamic nucleus before and after implantation of deep brain stimulation electrodes. Stereotact Funct Neurosurg 2003 80(1-4):96-101 http://www.ncbi.nlm.nih.gov/pubmed/14745216
- Hilker R, Voges J, Weisenbach S, Kalbe E, Burghaus L, Ghaemi M, Lehrke R, Koulousakis A, Herholz K, Sturm V, Heiss WD. Subthalamic nucleus stimulation restores glucose metabolism in associative and limbic cortices and in cerebellum: evidence from a FDG-PET study in advanced Parkinson's disease. J Cereb Blood Flow Metab 2004 24(1):7-16 http://www.ncbi.nlm.nih.gov/pubmed/14688612
- Hjort N, Østergaard K, Dupont E. Improvement of sleep quality in patients with advanced Parkinson's disease treated with deep brain stimulation of the subthalamic nucleus. Mov Disord 2004 19(2):196-199 http://www.ncbi.nlm.nih.gov/pubmed/14978676
- 9. Keller S, Kessler T, Meuser T, Fogel W, Bremen D, Jost WH. Analysis of direct costs in therapy of Parkinson disease. German. Nervenarzt 2003 74(12):1105-1109 http://www.ncbi.nlm.nih.gov/pubmed/14647911
- 10. Krack P, Batir A, Van Blercom N, Chabardes S, Fraix V, Ardouin C, Koudsie A, Limousin PD, Benazzouz A, LeBas JF, Benabid AL, Pollak P. Five-year follow-up of bilateral stimulation of the subthalamic nucleus in advanced Parkinson's disease. NEJM 2003 349(20):1925-1934 http://www.ncbi.nlm.nih.gov/pubmed/14614167
- 11. Krygowska-Wajs A, Furgala A, Gorecka-Mazur A, Pietraszko W, Thor P, Potasz-Kulikowska K, Moskala M. The effect of subthalamic deep brain stimulation on gastric motility in Parkinson's disease. Parkinsonism Relat Disord 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26952698
- Limousin P, Krack P, Pollak P, Benazzouz A, Ardouin C, Hoffmann D, Benabid AL. Electrical stimulation of the subthalamic nucleus in advanced Parkinson's disease. NEJM 1998 339(16):1105-1111 http://www.ncbi.nlm.nih.gov/pubmed/9770557
- 13. Littlechild P, Varma TR, Eldridge PR, Fox S, Forster A, Fletcher N, Steiger M, Byrne P, Tyler K, Flintham S. Variability in position of the subthalamic nucleus targeted by magnetic resonance imaging and microelectrode recordings as compared to atlas co-ordinates. Stereotact Funct

Neurosurg 2003 80(1-4):82-87 http://www.ncbi.nlm.nih.gov/pubmed/14745213

- Martín N, Valero R, Hurtado P, Gracia I, Fernández C, Rumià J, Valldeoriola F, Carrero EJ, Tercero FJ, de Riva N, Fàbregas N. Experience with 'Fast track' postoperative care after deep brain stimulation surgery. Neurocirugia (Astur) 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27006141
- 15. McConnell GC, So RQ, Grill WM. Failure to suppress low-frequency neuronal oscillatory activity underlies the reduced effectiveness of random patterns of deep brain stimulation. J Neurophysiol 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26961105
- 16. Murchison AG, Fletcher C, Cheeran B. Recurrence of dyskinesia as a side-effect of mirabegron in a patient with Parkinson's disease on DBS (GPi). Parkinsonism Relat Disord 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27004469
- Paradiso G, Saint-Cyr JA, Lozano AM, Lang AE, Chen R. Involvement of the human subthalamic nucleus in movement preparation. Neurology 2003 61(11):1538-1545 http://www.ncbi.nlm.nih.gov/pubmed/14663039
- 18. Pesenti A, Rohr M, Egidi M, Rampini P, Tamma F, Locatelli M, Caputo E, Chiesa V, Bianchi A, Barbieri S, Baselli G, Priori A. The subthalamic nucleus in Parkinson's disease: power spectral density analysis of neural intraoperative signals. Neurol Sci 2004 24(6):367-374 http://www.ncbi.nlm.nih.gov/pubmed/14767681
- Putzke JD, Wharen RE Jr, Wszolek ZK, Turk MF, Strongosky AJ, Uitti RJ. Thalamic deep brain stimulation for tremor-predominant Parkinson's disease. Parkinsonism Relat Disord 2003 10(2):81-88 http://www.ncbi.nlm.nih.gov/pubmed/14643997
- 20. Tröster AI, Fields JA, Wilkinson S, Pahwa R, Koller WC, Lyons KE. Effect of motor improvement on quality of life following subthalamic stimulation is mediated by changes in depressive symptomatology. Stereotact Funct Neurosurg 2003 80(1-4):43-47 http://www.ncbi.nlm.nih.gov/pubmed/14745208
- 21. Vaillancourt DE, Prodoehl J, Verhagen Metman L, Bakay RA, Corcos DM. Effects of deep brain stimulation and medication on bradykinesia and muscle activation in Parkinson's disease. Brain 2004 127(Pt 3):491-504 http://www.ncbi.nlm.nih.gov/pubmed/14662520
- 22. Vedam-Mai V, Baradaran-Shoraka M, Reynolds BA, Okun MS. Tissue response to deep brain stimulation and microlesion: a comparative study. Neuromodulation 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27018335

# DBS OCD

- 1. Gibson WS, Cho S, Abulseoud OA, Gorny KR, Felmlee JP, Welker KM, Klassen BT, Min HK, Lee KH. The impact of mirth-inducing ventral striatal deep brain stimulation on functional and effective connectivity. Cereb Cortex 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27001680
- 2. Messina G, Islam L, Cordella R, Gambini O, Franzini A. Deep brain stimulation for aggressive behaviour and obsessive-compulsive disorder. J Neurosurg Sci 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27007543

# DBS Epilepsy

- Mizuno-Matsumoto Y, Motamedi GK, Webber WR, Lesser RP. Wavelet-crosscorrelation analysis can help predict whether bursts of pulse stimulation will terminate afterdischarges. Clin Neurophysiol 2002 113(1):33-42 http://www.ncbi.nlm.nih.gov/pubmed/11801422
- 2. Motamedi GK, Lesser RP, Miglioretti DL, Mizuno-Matsumoto Y, Gordon B, Webber WR, Jackson DC, Sepkuty JP, Crone NE. Optimizing parameters for terminating cortical afterdischarges with pulse stimulation. Epilepsia 2002 43(8):836-846 Erratum 43(11):1441 http://www.ncbi.nlm.nih.gov/pubmed/12181002
- 3. Motamedi GK(1), Okunola O, Kalhorn CG, Mostofi N, Mizuno-Matsumoto Y, Cho YW, Meador KJ.

Afterdischarges during cortical stimulation at different frequencies and intensities. Epilepsy Res 2007 77(1):65-69 epub http://www.ncbi.nlm.nih.gov/pubmed/17869064

## DRG

1. Adams RD, Willits RK, Harkins AB. Computational modeling of neurons: intensity-duration relationship of extracellular electrical stimulation for changes in intracellular calcium. J Neurophysiol 2016 115(1):602-16 http://www.ncbi.nlm.nih.gov/pubmed/26510759

## PNS (We believe we have nearly all PNFS citations.)

- 1. Bernstein C, Richard A, Paicius M, Barkow SH, Lempert-Cohen C. Spinal cord stimulation in conjunction with peripheral nerve field stimulation for the treatment of low back and leg pain: a case series. Neuromodulation 2008 1:116-123 http://www.ncbi.nlm.nih.gov/pubmed/22151044
- 2. D'Ammando A, Messina G, Franzini A, Dones I. Peripheral nerve field stimulation for chronic neuropathic pain: a single institution experience. Acta Neurochir (Wien) 2016 158(4):767-772 http://www.ncbi.nlm.nih.gov/pubmed/26858209.
- 3. Frahm KS, Hennings K, Vera-Portocarrero L, Wacnik PW, Mørch CD. Nerve fiber activation during peripheral nerve field stimulation: importance of electrode orientation and estimation of area of paresthesia. Neuromodulation 2015 epub http://www.ncbi.nlm.nih.gov/pubmed/26586248
- Hamm-Faber T, Hans E, Aukes A, De Loos F, Gültuna I. Subcutaneous stimulation as an additional therapy to spinal cord stimulation for the treatment of lower limb pain and/or back pain: a feasibility study. Neuromodulation 2011 15:108–117 http://www.ncbi.nlm.nih.gov/pubmed/21943376
- 5. Klein J, Sandi-Gahun S, Schackert G, Juratli TA. Peripheral nerve field stimulation for trigeminal neuralgia, trigeminal neuropathic pain, and persistent idiopathic facial pain. Cephalalgia 2015 epub http://www.ncbi.nlm.nih.gov/pubmed/26209705
- Navarro RM, Vercimak DC. Triangular stimulation method utilizing combination spinal cord stimulation with peripheral subcutaneous field stimulation for chronic pain patients: a retrospective study. Neuromodulation 2012 15:124–131 http://www.ncbi.nlm.nih.gov/pubmed/22329399
- Paicius RM, Bernstein CA, Lempert-Cohen C. Peripheral nerve field stimulation for the treatment of chronic low back pain: preliminary results of long-term follow-up: a case series. Neuromodulation 2007 10:279–290 http://www.ncbi.nlm.nih.gov/pubmed/22150840
- Upadhyaya SP, Rana SP, Mishra S, Bhatnagar S. Successful treatment of an intractable postherpetic neuralgia (PHN) using peripheral nerve field stimulation (PNFS). Amer J Hosp Pallia Care 2010 27:59–62 http://www.ncbi.nlm.nih.gov/pubmed/19700650
- 9. Verrills P, Mitchell B, Vivian D, Sinclair C. Peripheral nerve field stimulation: is age an indicator of outcome? Neuromodulation 2009 12:60–67 http://www.ncbi.nlm.nih.gov/pubmed/22151225
- 10. Verrills P, Russo M. Peripheral nerve stimulation for back pain. Prog Neurol Surg 2015 29:127-138 http://www.ncbi.nlm.nih.gov/pubmed/26393502
- Winkelmueller M, Kolodziej MA, Welke W, Koulousakis A, Martinez R. Subcutaneous peripheral nerve field stimulation for the treatment of chronic back pain: patient selection and technical aspects. J Neurol Surg A Cent Eur Neurosurg 2016 77(1):63-67 http://www.ncbi.nlm.nih.gov/pubmed/26216732

# SCS

- Ahmed S, Lindsay JM, Snyder DI. Spinal cord stimulation for complex regional pain syndrome: a case study of a pregnant female. Pain Physician 2016 19(3):E487-E493 http://www.ncbi.nlm.nih.gov/pubmed/27008306
- 2. Blackburn DR, Romers CC, Copeland LA, Lynch W, Nguyen DD, Zeber JE, Hoffman MR. Presurgical

psychological assessments as correlates of effectiveness of spinal cord stimulation for chronic pain reduction. Neuromodulation 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27028312

- 3. Bomba G, Kowalski IM, Szarek J, Zarzycki D, Pawlicki R. The effect of spinal electrostimulation on the testicular structure in rabbit. Med Sci Monit 2001 7(3):363-368 http://www.ncbi.nlm.nih.gov/pubmed/11386010
- 4. Chan AK, Winkler EA, Jacques L. Rate of perioperative neurological complications after surgery for cervical spinal cord stimulation. J Neurosurg Spine 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26943257
- Choi JH, Choi SC, Kim DK, Sung CH, Chon JY, Hong SJ, Lee JY, Moon HS. Combined spinal cord stimulation and peripheral nerve stimulation for brachial plexopathy: a case report. Pain Physician 2016 9(3):E459-E463 http://www.ncbi.nlm.nih.gov/pubmed/27008302
- 6. Ghaly RF, Tverdohleb T, Candido KD, Knezevic NN. Do we need to establish guidelines for patients with neuromodulation implantable devices, including spinal cord stimulators undergoing nonspinal surgeries? Surg Neurol Int 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26958424
- 7. Gomes C, Kuchenbuch M, Lucas G, Argaud S, Violas P, Sauleau P. Validity and utility of monopolar spinal cord stimulation in pediatric scoliosis surgery. Eur Spine J 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26957100
- Moraud EM, Capogrosso M, Formento E, Wenger N, DiGiovanna J, Courtine G, Micera S. Mechanisms underlying the neuromodulation of spinal circuits for correcting gait and balance deficits after spinal cord injury. Neuron 2016 89(4):814-828 http://www.ncbi.nlm.nih.gov/pubmed/26853304
- 9. Plevko O. An attempt of active treatment of paralysis by spinal electrostimulation. Croatian. Lijec Vjesn 1954 76(5-6):209-212 http://www.ncbi.nlm.nih.gov/pubmed/13234680
- 10. Provenzano DA, Williams JR, Jarzabek G, DeRiggi LA, Scott TF. Treatment of neuropathic pain and functional limitations associated with multiple sclerosis using an MRI-compatible spinal cord stimulator: a case report with two year follow-up and literature review. Neuromodulation 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/27019220
- 11. Strauss I, Taha K, Krishna V, Hodaie M. Younger age predicts greater effectiveness of spinal cord stimulation for chronic pain. Acta Neurochir (Wien) 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26969075
- 12. Tyagi R, Kloepping C, Shah S. Spinal cord stimulation for recurrent tethered cord syndrome in a pediatric patient: case report. J Neurosurg Pediatr 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26942269
- 13. Wenger N, Moraud EM, Gandar J, Musienko P, Capogrosso M, Baud L, Le Goff CG, Barraud Q, Pavlova N, Dominici N, Minev IR, Asboth L, Hirsch A, Duis S, Kreider J, Mortera A, Haverbeck O, Kraus S, Schmitz F, DiGiovanna J, van den Brand R, Bloch J, Detemple P, Lacour SP, Bézard E, Micera S, Courtine G. Spatiotemporal neuromodulation therapies engaging muscle synergies improve motor control after spinal cord injury. Nat Med 2016 22(2):138-145 http://www.ncbi.nlm.nih.gov/pubmed/26779815
- 14. Yamamoto T, Watanabe M, Obuchi T, Kano T, Kobayashi K, Oshima H, Fukaya C, Yoshino A. Importance of pharmacological evaluation in the treatment of poststroke pain by spinal cord stimulation. Neuromodulation 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26990444

# SNS

 Brégeon J, Coron E, Da Silva AC, Jaulin J, Aubert P, Chevalier J, Vergnolle N, Meurette G, Neunlist M. Sacral nerve stimulation enhances early intestinal mucosal repair following mucosal injury in a pig model. J Physiol 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26939757 2. Ren J, Chew DJ, Thiruchelvam N. Electrical stimulation of the spinal dorsal root inhibits reflex bladder contraction and external urethra sphincter activity: is this how sacral neuromodulation works? Urol Int 2016 epub http://www.ncbi.nlm.nih.gov/pubmed/26953816