

# JEFFREY H GERTSCH MD

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## EDUCATION

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**Clinical Neurophysiology Fellowship:** David Geffen School of Medicine, University of California - Los Angeles. Los Angeles, CA – Completion date: 6/2008.

**Neurology Residency:** Stanford University School of Medicine. Palo Alto, CA – Completion date: 6/2007.

**Medical Internship:** Maricopa Medical Center. Phoenix, AZ – Completion date: 6/2004.

**Medical Doctorate:** University of Hawaii, John Burns School of Medicine. Honolulu, HI – Degree granted 5/2003.

**Bachelor of Science in Biochemistry and Cell Biology:** University of California - San Diego, Thurgood Marshall College. La Jolla, CA – Degree granted 6/1998.

## ACADEMIC APPOINTMENTS

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**Guest Assistant Professor:** Department of Biological Science and Technology, National Chiao Tung University. Hsin-Chu, Taiwan, 5/2012 – present.

**Research Scientist:** Warfighter Performance Department, Naval Health Research Center (NHRC)/Department of Defense (DoD). San Diego, CA, 9/2010 – present.

**Assistant Clinical Professor:** Department of Neurosciences, University of California - San Diego School of Medicine. La Jolla, CA, 7/2008 – present.

## PROFESSIONAL EXPERIENCE

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**Consultant:** Tri-Mate Pro, Inc. DBA OxyStrap, San Diego, CA 2004-present

**Medical Director:** Western Society of Electroneurodiagnostic Technologists (WSET). Western US, 1/2012 – present.

**Principal Investigator and Subject Matter Expert:** Warfighter Performance Department, Naval Health Research Center (NHRC)/Department of Defense (DoD). San Diego, CA, 9/2010 – present.

**Medical Director:** Ambulatory Care Sleep Center. San Diego, CA, 7/2008 – 12/2011.

**Medical Director:** Interventional Neurophysiology Service, University of California - San Diego Medical Center (Hillcrest and Thornton Hospitals). La Jolla, CA, 7/2008 – present.

**Research Assistant:** Center for the Study of Neurological Diseases, Queen's Medical Center, Laboratory of Dr. Bo K Siesjo, MD/PhD. Honolulu, HI, 9/1998-7/1999.

**Student Researcher:** The Salk Institute of Biosciences, Infectious Diseases Section, Laboratory of Dr. Rick Bushman, PhD. San Diego, CA - 7/1997 – 7/1998.

## GRANT SUPPORT

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### *Current Grant Support:*

**Co-Principal Investigator:** Proposal N13A-021-0212 “Body-worn Wireless Neurophysiological Monitoring Network.” Phase 1 Small Business Technology Transfer (STTR) program funded by the Department of Defense (DoD)/Navy and administered jointly between Cognionics Inc. and the UCSD Department of Neurosciences, both of San Diego, CA. \$80 thousand contract in the process of being funded between 7/1/2013 – 5/1/2014. This project will develop a wireless, body-worn neurophysiological monitoring suite comprising of multiple 'patches' designed to cover the body for ECG, EEG and EMG acquisition along with auxiliary

sensors for temperature and motion capture. The core of the Phase I project will focus on demonstrating the feasibility of the device for clinical and other uses.

**Principal Investigator and Primary Subject Matter Expert: Project W181 “Neurological Performance at Altitude.”** Funded by the DoD/Navy Bureau of Medicine and Surgery (BUMED) and administered through the Naval Health Research Center (NHRC), San Diego, CA. \$1.3 million contract successfully executed on Work Unit 61031 for federal fiscal years 2010-2013. Developed a clinical field research model for human performance under moderate to high altitude hypoxic conditions (max >11K feet, Marine Corps Mountain Warfare Training Center, Bridgeport, CA). Focusing on cerebral forms of altitude illness in Marines engaged in infantry training exercises, studied 1) risk factors, incidence, and prevalence of hypoxic illness, 2) the contribution of inflammation in hypoxic illness (as well as the biological activity of anti-inflammatory agents), and 3) objective diagnostics for greater sensitivity and specificity of hypoxic illness.

**Consultant and Subject Matter Expert: Project DARPA-SN08-53 “Rapid Altitude and Hypoxia Acclimatization (RAHA)” Program.** Funded by the Department of Defense (DoD)/Defense Advanced Research Projects Agency (DARPA), subcontracted through a Space and Naval Warfare (SPAWAR) Systems Command collaboration with the Naval Health Research Center (NHRC), San Diego, CA. \$150 thousand subcontract for federal fiscal year 2013. Providing neurological expertise in high altitude hypoxic diseases in the context of safety assessment/validation of experimental hypoxia antagonist medications undergoing accelerated phase I clinical trials.

### *Previous Grant Support:*

**Co-Investigator: “Ginkgo biloba (GK501®) for prophylaxis of altitude sickness.”** Funded by Boehringer-Ingelheim Pharmaceuticals/Pharmaton Natural Health Products; administered through the Kapiolani Clinical Research Center, Honolulu, HI. \$10 thousand successfully executed in academic year 2002. Developed a clinical field research model evaluating Ginkgo biloba extract for prevention of cerebral forms of altitude illness under high altitude hypoxic conditions in the Khumbu-Everest region, Nepal Himalayas.

**Co-Investigator: “Ginkgo biloba and prophylaxis of acute mountain sickness.”** Funded by a National Institutes of Health (NIH) Research Centers in Minority Institutions Research Award P20-RR11091; administered through the Kapiolani Clinical Research Center, Honolulu, HI. \$15 thousand successfully executed in academic year 1999. Developed a clinical field research model evaluating Ginkgo biloba extract for prevention of cerebral forms of altitude illness under high altitude hypoxic conditions on Mauna Kea, HI.

## **PATENTS, LICENSING, AND TECHNOLOGY TRANSFER AGREEMENTS**

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**Jeffrey H Gertsch MD** and David Allison PhD. Provisional patent materials submitted for “Stimulator lead placement system.” Established in the UCSD Technology Transfer Office 5/31/2011 (case # 2011-357).

**Gertsch, Jeffrey H;** Gertsch, Ronald L; Gehrisch, Christopher L; et al. Patent for an “Electronic helmet,” US Patent #20060277666 and international submissions completed 12/14/2006.

## **ORGANIZATIONAL AND PROFESSIONAL ACTIVITIES**

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**Scholarly Peer Review (past decade):** British Medical Journal, European Journal of Neuroscience, Archives of Internal Medicine, Canadian Medical Association Journal, Journal of Clinical Neurophysiology, High Altitude Medicine and Biology, Wilderness and Environmental Medicine, Undersea and Hyperbaric Medicine.

**American Society of Neurophysiological Monitoring (ASNM):** Member since 2012. Elected to the ASNM Board of Directors in 11/2012, invited speaker for the 2012 ASNM national meeting, as well as the 2012 and 2013 Fall focus course meetings.

**Institute of Health Sciences (IHS):** Member since 2011. Advisory board member for electroneurodiagnostics and advanced intraoperative monitoring technologist programs.

**American Clinical Neurophysiology Society (ACNS):** Member since 2008. Member of the Continuous ICU EEG Work Group. Invited speaker in two symposia for the 2010 ACNS Annual Meeting, Symposium chair and speaker in the 2011 ACNS Annual Meeting, invited speaker in two symposia for the 2012 ACNS Annual Meeting, invited speaker for the Plenary Scientific Session in the 2013 ACNS Annual Meeting.

**American Academy of Neurology (AAN):** Member since 2002. AAN representative for the American Medical Association’s CPT code review conference 10/16/2010 in Los Angeles, CA. Reviewer for clinical neurophysiology abstracts and co-chair of a scientific

platform session for the 2011 and 2013 AAN Annual meetings. Eligible for fellowship status in 2017 (7 years after primary board certification).

**Wilderness Medical Society (WMS):** Member since 2001. Served as a reviewer for the society journal, Wilderness and Environmental Medicine.

**International Society for Mountain Medicine (ISMM):** Member since 2001. Served as a reviewer for the society journal, High altitude Medicine and Biology.

## LICENSURE AND CERTIFICATION

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**Diplomate in Clinical Neurophysiology - American Board of Psychiatry and Neurology.** Certificate number 2125 granted 8/15/2011 and continuously held to the present with no restrictions.

**Diplomate in Clinical Neurology - American Board of Psychiatry and Neurology.** Certificate number 55971 granted 1/22/2010 and continuously held to the present with no restrictions.

**Federal Drug Enforcement Administration:** Unrestricted controlled substance prescription. Registration number BG9718466, granted 4/26/2006 and continuously held to the present with no restrictions.

**Medical Board of California:** License number A88828 granted 10/10/2004 and continuously held to the present with no restrictions.

## PEER-REVIEWED PUBLICATIONS

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**Publication metrics as of 9/26/2013: 15 peer-reviewed publications with 594 citations generating an H Index of 11 and an i10 index of 11.**

Allison, D.W., Skousen, C.B., Kohanchi, D., Allen, R.T., Lee, Y.P., **Gertsch, J.H.** (2014). Vasculopathy, Ischemia, and the Lateral Interbody Fusion Surgery: Report of three cases. *Journal of Clinical Neurophysiology* 31:(in press, pages to be announced).

**Jeffrey H. Gertsch**, Bryan Corbett, Peter S Holck, Allison Mulcahy, Melanie Watts, Nathan T Stillwagon, Amanda Morgan Casto, Charles H Abramson, Charles PA Vaughan, Christopher Macguire, Neda N Farzan, Bao tran N Vo, Rebecca J Norvelle, Kerstin May, Jessica E Holly, Hillary Irons, Aaron M Stutz, Pradip Chapapgain, Siddhartha Yadav, Matiram Pun, Jeremy Farrar, Buddha Basnyat (2012). Altitude Sickness in Climbers and Efficacy of NSAIDs Trial (ASCENT): Randomized, Controlled Trial of Ibuprofen Versus Placebo for Prevention of Altitude Illness. *Wilderness & Environmental Medicine* 23(4):307-15.

Norris JN, Viirre E, Aralis H, Sracic MK, Thomas D, **Gertsch JH** (2012). High altitude headache and acute mountain sickness at moderate elevations in a military population during battalion-level training exercises. *Military Medicine* 177(8):917-23.

Lipman GS, Kanaan NC, Holck PS, Constance BB, Corbett B, Grimm E, Preuss J, Zorko B, **Gertsch JH** for the PAINS Study Group (2012). Ibuprofen Prevents Altitude Illness: A Randomized Controlled Trial for Prevention of Altitude Illness with Non-steroidal Anti-inflammatory Agents (PAINS). *Annals of Emergency Medicine* 59(6):484-490.

Erica M. Brandling-Bennett, Susan Y. Bookheimer, Jessica L. Horsfall, Parham Moftakhar, Mark Sedrak, Charles T. Barkulis, **Jeffrey H. Gertsch**, Matthew G. MacDougall, Willy Boucharel, Marc R. Nuwer, and Marvin Bergsneider (2012). A Paradigm for Awake Intra-operative Memory Mapping During Forniceal Stimulation. *Neurocase* 18(1):26-38.

Buddha Basnyat, Peter S. Holck, Matiram Pun, Stephen Halverson, Piotr Szawarski, **Jeffrey H. Gertsch**, Mike Steif, Skip Powell, Subhash Khanal, Anip Joshi, Ravi Shankar, Jamie Karambay, Hattie Alexander, Allyson Stone, Candice Morrissey, Beth Thompson, Jeremy Farrar for the SPACE Trial Group (2011). Spironolactone Does Not Prevent Acute Mountain Sickness (AMS): A prospective, double-blind, randomized, placebo-controlled trial by the SPACE Trial Group (Spironolactone and Acetazolamide Trial for the Prevention of AMS). *Wilderness and Environmental Medicine* 22(1):15-22.

**Jeffrey H. Gertsch**, Grant S. Lipman, Peter S. Holck, Andrew Merritt, Allison Mulcahy, Robert S. Fisher, and Buddha Basnyat, for the authors of the HEAT Trial (2010). Prospective, Double-Blind, Randomized, Placebo-Controlled Comparison of Acetazolamide Versus Ibuprofen for Prophylaxis Against High Altitude Headache: The Headache Evaluation at Altitude Trial (HEAT). *Wilderness and Environmental Medicine* 21(3):236-243.

Buddha Basnyat, **Jeffrey H. Gertsch**, Peter S Holck, E William Johnson, and Erik Swensen, for the authors of the PACE trial (2006). Acetazolamide 125mg BD is not significantly different from 375mg BD in the prevention of acute mountain sickness: the Prophylactic acetazolamide dosage comparison for efficacy (PACE) trial. *High Altitude Medicine and Biology* 7(1):17-27.

Buddha Basnyat, Tianyi Wu, and **Jeffrey H. Gertsch** (2004). Neurological conditions at altitude which fall outside the usual definition of altitude sickness. *High Altitude Medicine and Biology* 5(2):171-179.

**Gertsch JH**, Basnyat B, Johnson EW, Onopa J, Holck PS, for the authors of the PHAIT trial (2004). Randomised, double blind, placebo controlled comparison of ginkgo biloba and acetazolamide for prevention of acute mountain sickness among Himalayan trekkers: the prevention of high altitude illness (PHAIT) trial. *The British Medical Journal* 328(7443):797-799.

**Jeffrey H. Gertsch MD** and Christopher Wood MD (2003). Case Report: An ingestion of Hawaiian Baby Woodrose seeds associated with acute psychosis. *Hawaii Medical Journal* 62(6):127-129.

Buddha Basnyat, **Jeffrey H. Gertsch**, E. William Johnson, Franco Castro-Marin, Yoshio Inoue, Clement Yeh (2003). Efficacy of low-dose acetazolamide (125 mg BID) for the prophylaxis of Acute Mountain Sickness (AMS). *High Altitude Medicine and Biology* 4(1):45-52.

**Jeffrey H. Gertsch**, Todd B. Seto, Joanne Mor, and Janet Onopa (2002). *Ginkgo biloba* for the prevention of severe acute mountain sickness starting one day before rapid ascent. *High Altitude Medicine and Biology* 3(1):29-37.

Tibor Kristian, **Jeff Gertsch**, Timothy E. Bates, and Bo K. Siesjo (2000). Characteristics of the Calcium-Triggered Mitochondrial Permeability Transition in Nonsynaptic Brain Mitochondria: Effect of Cyclosporin A and Ubiquinone O. *Journal of Neurochemistry* 74(5):1999-2009.

Young Hwang, David Rowley, Denise Rhodes, **Jeff Gertsch**, William Fenical, and Frederic Bushman (1999). Mechanism of Inhibition of a Poxvirus Topoisomerase by the Marine Natural Product Sansalvamide A. *Molecular Pharmacology* 55(6):1049-1053.

## **LETTERS TO THE EDITOR AND OTHER NON-PEER REVIEWED PUBLICATIONS:**

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**JH Gertsch**, PS Holck, B Basnyat, BM Corbett (2013). In reply to “ibuprofen for prevention of acute mountain sickness – is bigger really better?” *Wilderness and Environmental Medicine* 24(2):178-179.

**Jeff Gertsch** and Colin Skousen (2012). WSET Technical Reviews: New for 2012 – The PressOn Electrode. *Brainworks*. June-July 2012.

Lipman GS, **Gertsch JH**, Holck PS (2012). “Pharmacologic Prevention for Acute Mountain Sickness – Lack of Appropriate Inclusion of the Available Evidence.” *Annals of Emergency Medicine* 60(4):538-539.

Basnyat B, **Gertsch JH**, Holck PS (2008). In reply to the article entitled: “Low-dose acetylsalicylic acid analog and acetazolamide for prevention of acute mountain sickness.” *High Altitude Medicine and Biology* 9(4):349.

**Jeffrey H. Gertsch**, Buddha Basnyat, E. William Johnson, and Peter S. Holck (2004). “Ginkgo biloba and Acetazolamide for Acute Mountain Sickness: Authors’ reply.” *The British Medical Journal* 329(7458):171-172.

Buddha Basnyat and **Jeffrey H. Gertsch** (2003). “Reply to the Letter Above.” *High Altitude Medicine and Biology* 4(3):399-400.

## **CONFERENCE ABSTRACTS:**

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**Jeffrey H Gertsch**, Sonia Nhieu, David W Allison, Alex Khalessi, Robert S. Carter, Brian Lemkuil, and Piyush Patel (2012): Under what conditions is the Total Intra-Venous Anesthetic (TIVA) agent Propofol a pro-convulsant? Case report of a retractor-induced electrographic seizure during intracranial-extracranial vascular bypass surgery in the 6th hour of Propofol-induced neuroprotective burst suppression. *Presented at the Annual Meeting of the American Society of Neurophysiological Monitoring, Salt Lake City, UT, 5/4-6/2012.*

**Gertsch JH**, Allison DW, Matthews AD, Lee YP, Fo C, Lemkuil B (2012). Anodal Block in Surgical Neurophysiology: Fact or fiction? *Presented at the 2012 American Clinical Neurophysiology Society Meeting, San Antonio, Texas, 2/10-12/2012.*

**Gertsch JH**, Allison DW, Matthews AD, Lee YP, Fo C, Lemkuil B, (2012). Paired-Pulse Ratio (PPR) of SSEPs under Anesthesia. *Presented at the 2012 American Clinical Neurophysiology Society Meeting, San Antonio, Texas, 2/10-12/2012.*

**Gertsch JH**, Allison DW, Lee YP, Kohanchi D, Fo C, Wang S, Mower AI, Lemkuil B (2012). It’s Time: Multimodal IONM with MEP to Protect Lumbar Surgery (ALF/MIS). *Presented at the 2012 American Clinical Neurophysiology Society Meeting, San Antonio, Texas, 2/10-12/2012.*

Lipman GS, Kanaan N, Constance B, Holck P, Grimm E, **Gertsch JH**, Williams S (2011). Optic Nerve Sheath Diameter Changes on Ascent to High Altitude. *Oral presentation at the American College of Emergency Physicians National Research Forum, San Francisco, CA, 10/15-16/2011; published in Annals of Emergency Medicine. Supplement 58(4): S185.*

Ulrich G, Thomas D, Viirre E, Dietrich R, Scherl R, **Gertsch JH** (2011). High Altitude Cerebral Edema (HACE) strikes a 26-year-old male Corpsman after 18 hours at ~3110m: Correlation of objective and clinical findings. *Presented at the 28<sup>th</sup> Wilderness Medicine Scientific Conference and Annual Meeting, Snowmass, CO, 7/29-8/3/2011; published in Wilderness and Environmental Medicine 22(4):360.*

**Gertsch JH**, Sracic MK, Thomas D, Pate A, Viirre E (2011). Acute anxiety among marines after recent arrival at high altitude: high altitude anxiety as a distinct diagnostic entity. *Presented at the 28<sup>th</sup> Wilderness Medicine Scientific Conference and Annual Meeting, Snowmass, CO, 7/29-8/3/2011; published in Wilderness and Environmental Medicine 22(4):356-357.*

**Gertsch JH**, Sracic MK, Thomas D, Norris JN, Marzano S, Aralis HJ, Viirre E (2011). High Altitude Headache and Acute Mountain Sickness at Moderate Elevations During Battalion-Level Military Training Operations. *Presented at the 28<sup>th</sup> Wilderness Medicine Scientific Conference and Annual Meeting, Snowmass, CO, 7/29-8/3/2011; published in Wilderness and Environmental Medicine 22(4):358.*

Ulrich G, Thomas D, Viirre E, Johnson MB, Campbell C, **Gertsch JH** (2011). Optic Nerve Sheath Ultrasonography for the Noninvasive Determination of Intracranial Pressure at High Altitude: State of the Science in 2011, Limitations, and Recommendations for Standardization. *Presented at the 28<sup>th</sup> Wilderness Medicine Scientific Conference and Annual Meeting, Snowmass, CO, 7/29-8/3/2011.*

Lipman GS, Kanaan NC, Holck PS, **Gertsch JH**, Constance BB, Corbett B, Grimm E, Preuss J, Zorko B (2011). Ibuprofen Prevents Altitude Illness: A prospective Randomized Controlled Trial. *Presented at the Western Regional Meeting of the Society for Academic Emergency Medicine, Keystone, CO, 2/25/2011 in addition to the Annual Meeting of the Society for Academic Emergency Medicine, Boston MA, 6/2/2011; published in Academic Emergency Medicine 18(5): S15.*

Anna Weiss, Anjali Scholten, **Jeffrey H Gertsch**, Katherine E Brown, and Niren Angle (2010). Electroencephalographic Monitoring with Somatosensory Evoked Potentials Obviates The Need For Shunting In Carotid Endarterectomy, Even With Stroke. *Presented at the Western Vascular Society's 25<sup>th</sup> Annual Meeting, Sunriver, OR, 9/25-28/2010; published in the Journal of Vascular Surgery 52(2):523.*

Melanie R Watts, Allison Mulcahy, **Jeffrey H Gertsch**, Sachita Shah, Buddha Basnyat (2009). Correlation of the spectrum of acute altitude-associated neurological disorders with neurological disorders with ultrasound evaluation of optic nerve sheath diameter and papilledema - Standardization, controversies, and a novel technique. *Presented at the 16<sup>th</sup> International Hypoxia Symposium, Lake Louise, Alberta, Canada, 3/10-15/2009.*

Buddha Basnyat, **Jeffrey H Gertsch**, Peter Holck, Matiram Pun, Candice Morrissey, Anip Johsi, Subhash Khanal, Ravi Shankar, Hattie Alexander, Stephen Halvorson, Jamie Karambay, Skip Powell, Riley Powell, Mike Steif, Allyson Stone, Piotr Szawarski, Elizabeth Thompson, Ken Zafren, Jeremy Farrar (2009). The Spironolactone vs. Acetazolamide (SPACE) Trial for Prevention of Altitude Sickness. *Presented at the 16<sup>th</sup> International Hypoxia Symposium, Lake Louise, Alberta, Canada, 3/10-15/2009.*

E Brandling-Bennett, S Bookheimer, J Horsfall, **J Gertsch**, W Boucharel, M Nuwer, and M Bergsneider (2008). A Paradigm for Awake Intraoperative Memory Mapping. *Presented at the American Epilepsy Society 62<sup>nd</sup> Annual Meeting, Seattle, WA, 12/5-9/2008; published in Epilepsia 49:155-156.*

**Jeffrey H. Gertsch**, Grant S. Lipman, Peter S. Holck, Buddha Basnyat, and Andrew Merritt, writing for the corresponding authors of the HEAT trial (2006). Acetazolamide is no better than ibuprofen for prophylaxis of high altitude headache (HAH): The Headache Evaluation at Altitude Trial (HEAT). *Presented at the 15<sup>th</sup> International Hypoxia Symposium, Lake Louise, Alberta, Canada, 2/27-3/4/2007. High Altitude Medicine and Biology 7(4):312.*

Catherine Bjerum, **Jeffrey Gertsch**, John Li, and Steven Simerville (2005). A Case of Amebic Pericarditis presenting as possible esophageal cancer. *Presented at the American College of Physicians National Annual Session, San Francisco, California, 4/14-16/2005.*

**Gertsch JH**, Basnyat B, Johnson EW, Onopa J, and Holck PS for the Authors of PHAIT (2003). The Prevention of High Altitude Illness Trial (PHAIT): A comparison of Ginkgo biloba and acetazolamide for the prevention of acute mountain sickness. *Presented at the 4<sup>th</sup> World Congress on Wilderness Medicine, Whistler, British Columbia, Canada, 8/9-13/2003.*

**Gertsch JH**, Basnyat B, Johnson EW, Onopa J, and Holck PS for the Authors of PHAIT (2003). The Prevention of High Altitude Illness Trial (PHAIT): A comparison of Ginkgo biloba and acetazolamide for the prevention of acute mountain sickness. *Abstract #131, presented at the 13<sup>th</sup> International Hypoxia Symposium, Banff, Alberta, Canada, 2/19-22/2003, published in High Altitude Medicine and Biology* 3(4): 454.

**Jeffrey H. Gertsch** and Christopher Wood (2003). Ingestion of Hawaiian Baby Woodrose seeds associated with acute psychosis. *Abstract #87, presented at the John A. Burns School of Medicine Biomedical Sciences Symposium, 4/25/2003.*

Buddha Basnyat, **Jeffrey H. Gertsch**, E. William Johnson, Franco Castro-Marin, Yoshio Inoue, Clement Yeh (2003). Efficacy of low-dose acetazolamide (125 mg BID) for the prophylaxis of acute mountain sickness. *Abstract #103, presented at the 13<sup>th</sup> International Hypoxia Symposium, Banff, Canada, 2/18-22/2003; also published in High Altitude Medicine and Biology* 3(4): 454.

**Gertsch J**, TB Seto, J Onopa (2001). Does Ginkgo biloba Prevent Acute Mountain Sickness (AMS) if Begun 1-Day Before Ascent? (Abstract#125). *Proceedings of the 12<sup>th</sup> International Hypoxia Symposium, Jasper, Alberta, Canada, 3/10-13/2001; also published in High Altitude Medicine and Biology* 2(1): 109.

**Jeffrey H. Gertsch**, Russ S. Muramatsu, Connie L. Nelson, Wade T. Kyono MD. Increased Bacterial Infections in Polynesian Children. *Abstract #1429 presented at the 2001 Pediatric Academic Societies Meeting, Baltimore, Maryland, 4/29-5/1/2001; also published in Pediatric Research.* 49(4):250A.

Kenton Kramer, Leslie Tam, E. William Johnson, **Jeffrey H. Gertsch**, Haven Malish (1999). Student Participation in Biomedical Research Activities: An administrative proposal. *Presented to the John A. Burns School of Medicine, Medical Education Committee, 3/17/1999.*

## **CURRENT OPEN PROTOCOLS, SUBMITTED MANUSCRIPTS, AND SUBMITTED GRANTS**

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### ***Manuscripts submitted for peer review and currently under consideration:***

David W. Allison, **Jeffrey H. Gertsch**, Mark Mahan, Geoffrey Sheean, Justin Brown (2013). Anesthesia Considerations for Intraoperative Transcranial Motor Evoked Potentials (TcMEP) Monitoring in Adults Diagnosed with Poliomyelitis as Children: A Case Report. *Manuscript currently under consideration with the Neurodiagnostic Journal.*

## **INVITED PRESENTATIONS AND LECTURES:**

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### ***National and International Lectures:***

“Nearfield vs. Farfield: Clinical supervision models in surgical neurophysiology,” and “Neurophysiologic Monitoring for Minimally Invasive Spine Surgery (MIS) – concepts and controversy.” *Two lectures; ASNM Fall Focus Course – “Team IONM: Delivery of Quality Intraoperative Monitoring.” American Society of Neurophysiologic Monitoring, Dallas, TX, 9/7-8/2013.*

“Symposium (S19) – Clinical Neurophysiology Advances.” Symposium co-chair, *2013 Annual Meeting of the American Academy of Neurology, San Diego, CA, 3/20/2013.*

“Clinical-anatomic correlation: Spine cadaver lab (hands-on proctoring),” “Leading edge EEG Technology and implications for future technologist practice,” “Case studies in complex spine monitoring,” and “Thoraco-abdominal aortic surgical neuromonitoring: The multimodality approach.” *Three lectures and laboratory proctoring; 2013 Annual Meeting of the Western Society for Electrodiagnostic Technologists, San Francisco, CA, 3/8-10/2013.*

“Plenary Lecture: Interventional Neurophysiology for the 21st Century.” *2013 Annual Meeting of the American Clinical Neurophysiology Society, Miami, FL, 2/5/2013.*

“Technical Advances for Surgical Neuromonitoring 2012: Can we realize the promise in Dynamic Structural Neurophysiology?” and “Monitoring Minimally Invasive Spine Surgery: Challenges & Practical Recommendations.” *Two lectures; Intraoperative Spinal Monitoring: Surgical Neuromonitorist Focus Course – “Method, Data Analysis, & Quality Assurance on the Front Line.” American Society of Neurophysiologic Monitoring, Newport Beach, CA, 9/8-9/2012.*

“Plenary Session - Trajectory 2012: Emerging science and technology for the practice of surgical neurophysiology” and “Under what conditions is the Total Intra-Venous Anesthetic (TIVA) agent Propofol a pro-convulsant? Case report of a retractor-induced electrographic seizure during intracranial-extracranial vascular bypass surgery in the 6th hour of Propofol-induced neuroprotective burst suppression.” *Two lectures; Plenary Session on Scientific Advances, 2012 Annual Meeting of the American Society of Neurophysiological Monitoring, Salt Lake City, UT, 5/4-6/2012.*

“Interventional neurophysiology: Emerging technology-based practice paradigm for medical neurosciences,” and “Idea to Reality: Developing Medical Neurodiagnostic Devices.” *Two lectures; International Research-Intensive Center of Excellence (I-RICE) UCSD-University System of Taiwan (UST) Neural Engineering Symposium, National Chiao Tung University, Hsinchu, Taiwan, 3/22/2012 and 3/23/2012 respectively.*

“Skull base anatomy in surgical neurophysiology; Case studies in complex spine; Case studies in long term monitoring and ICU-cEEG; Multimodal thoraco-abdominal aortic surgery and more case studies in complex spine; Interventional neurophysiology: Emerging technology-based practice paradigm for medical neurosciences; The ‘business’ of surgical neurophysiology.” *Six lectures; 2012 Annual Meeting of the Western Society for Electrodiagnostic Technologists, Seattle, WA, 2/22-24/2012.*

“Intraoperative Neurophysiologic Monitoring Special Interest Group: Neurophysiologic Monitoring for Minimally Invasive Spine Surgery (MIS) – concepts and controversy,” and “Academic Surgical Neurophysiology in Practice: The Business of Neurophysiology.” *Two lectures; 2012 Annual Meeting of the American Clinical Neurophysiology Society, San Antonio, TX, 2/12/2012.*

“Symposium (S19) – Clinical Neurophysiology Advances.” Symposium co-chair; *2011 Annual Meeting of the American Academy of Neurology, Honolulu, HI, 4/13/2011.*

“Electromyography in Surgical Neurophysiology, Somatosensory Evoked Potentials in Surgical Neurophysiology, Motor Evoked Potentials in Surgical Neurophysiology, and Brainstem Auditory Evoked Potentials in Surgical Neurophysiology.” *Four lectures; 2011 Annual Meeting of the Western Society for Electrodiagnostic Technologists, Sacramento, CA, 2/17-18/2011.*

“Navigating the Minefield of Eloquent Cortex: Neurophysiologic techniques for cortical mapping and wake craniotomies.” Symposium chair and speaker; *2011 Annual Meeting of the American Clinical Neurophysiology Society, New Orleans, LA, 2/4/2011.*

“Electromyography in Surgical Neurophysiology, and Somatosensory Evoked Potentials in Surgical Neurophysiology.” *Two lectures; Annual Meeting of the Western Society for Electrodiagnostic Technologists, Sacramento, CA, 2/17-18/2010.*

“Starting a neurophysiology laboratory in the academic setting, and neurophysiologic intra-operative monitoring year in review - update on sensory evoked potential and motor evoked potential monitoring.” *Two lectures; 2010 Annual Meeting of the American Clinical Neurophysiology Society, San Diego, CA, 2/5-6/2010.*

“The Prevention of High Altitude Illness Trial (PHAIT): A comparison of Ginkgo biloba and acetazolamide for the prevention of acute mountain sickness.” *4<sup>th</sup> World Congress on Wilderness Medicine, Whistler, British Columbia, Canada, 8/11/2003.*

“Does Ginkgo biloba Prevent Acute Mountain Sickness (AMS) if Begun 1-Day Before Ascent?” *Hot Topics in Mountain Medicine Session; 12<sup>th</sup> International Hypoxia Symposium, Jasper, Canada, 3/12/2001.*

### **Local and Regional Lectures:**

“Wake Craniotomy Protocols for the Anesthesiologist.” *Anesthesia Department Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 7/3/2013.*

“Altitude Illness” and “Common Environmental Disorders of Homeostasis: Hypothermia, Hyperthermia, and Dehydration.” *Two lectures; San Diego Sierra Club’s Annual Wilderness Basics Course, San Diego, CA, 3/5/2013.*

“Interventional Neurophysiology: 21<sup>st</sup> Century Practice Paradigm for Clinical Neurophysiology” *2012 Annual Huntington Hospital Neurophysiology Symposium - The leading edge of inpatient clinical neurophysiology: Quality, risk, and economics, Pasedena, CA 11/14/2012.*

“Electroencephalography for the Anesthesiologist.” *Anesthesia Department Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 8/8/2012.*

“Emerging Technologies for the Evaluation of Epilepsy.” *Day of Hope Annual Conference, San Diego Epilepsy Foundation, University of California-San Diego School of Medicine, La Jolla, CA, 6/23/2012.*

“Visualizing Neuromarkers for the emerging 21<sup>st</sup> Century Practice of Interventional Neurophysiology.” *Bioinformatics and Systems Biology Grand Rounds, University of California-San Diego, La Jolla, CA, 4/20/2012.*

“Surgical Neurophysiology for the Anesthesiologist.” *Anesthesia Department Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 4/11/2012.*

“Altitude Illness” and “Common Environmental Disorders of Homeostasis: Hypothermia, Hyperthermia, and Dehydration.” *Two lectures; San Diego Sierra Club’s Annual Wilderness Basics Course, San Diego, CA, 3/6/2012.*

“Interventional Neurophysiology: Emerging practice paradigm and new technologies for the OR and ICU.” *Minisymposium on New Dimensions in Brain-Machine Interfaces, University of California-San Diego Jacobs School of Engineering, La Jolla, CA 11/9/2011.*

“Neurophysiologic Monitoring for Minimally Invasive Spine Surgery (MIS) – concepts and controversy, and Interventional Neurophysiology: Emerging practice paradigm and new technologies for the OR and ICU.” *Two lectures; Huntington Hospital Annual Neurophysiology Symposium: Neuromonitoring in Spine Surgery, Pasadena, CA 11/14/2011.*

“Interventional Neurophysiology: Emerging practice paradigm and new technologies for the OR and ICU.” *Neurology Department Grand Rounds, Cedars-Sinai Medical Center, Los Angeles, CA, 10/13/2011.*

“Altitude Illness.” *Three-part series; Mountain Medicine Course, USMC Mountain Warfare Training Center, Pickel Meadow, CA, 5/23/2011, 6/20/2011, 7/25/2011.*

“Altitude Illness” and “Common Environmental Disorders of Homeostasis: Hypothermia, Hyperthermia, and Dehydration.” *Two lectures; San Diego Sierra Club’s Annual Wilderness Basics Course, San Diego, CA, 3/1/2011.*

“Navigating the Minefield of Eloquent Cortex: Neurophysiologic techniques for cortical mapping and wake craniotomies.” *Neurosurgery Division Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 1/3/2011.*

“Surgical Neurophysiology.” *Neurosurgery Division Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 9/3/2010.*

“Surgical Neurophysiology.” *Orthopedics Department Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 9/1/2010.*

“Introduction to electroencephalography.” *Neurology Resident’s Crash Course in Emergency Neurology Series, University of California-San Diego School of Medicine, La Jolla, CA, 7/6/2010.*

“The spectrum of Altitude-Associated Neurological Disorders at Altitude.” *Warfighter Performance Section Conference, Naval Health Research Center, San Diego, CA, 3/23/2010.*

“Altitude Illness.” *USMC 1<sup>st</sup> Division/1<sup>st</sup> Battalion Corpsmen, Mountain Warfare Training Center, Pickel Meadow, CA, 4/18/2010.*

“Thoracic Outlet Syndrome.” *Two lectures; Physical Therapy Department Conference, UCSD Medical Center (Hillcrest and Thornton sites), San Diego, CA, 3/12/2010 and 8/13/2010 respectively.*

“Altitude Illness.” *San Diego Sierra Club’s Annual Wilderness Basics Course, San Diego, CA, 2/23/2010.*

“The spectrum of Altitude-Associated Neurological Disorders at Altitude: Clinical research from Mauna Kea to Everest base Camp.” *Neurosciences Department Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 11/29/2009.*

“Motor Evoked Potentials in the Intra-operative Setting.” *Orthopedics-Spine Division Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 11/2/2009.*

“Diagnosis and Treatment of Obstructive Sleep Apnea in 2009.” *Internal Medicine Department Grand Rounds, University of California-San Diego School of Medicine, La Jolla, CA, 4/8/2009.*

“Surgical Neurophysiology: current practice in spine and future trends.” *San Diego Academy of Neurological Surgeons, La Jolla, CA, 3/25/2009.*

“High Altitude Neurology: the spectrum of altitude-associated neurological disease.” *Neurology Department Grand Rounds, Veteran’s Administration Hospital - Greater Los Angeles, Los Angeles, CA, 5/16/2008.*

“Clinical Case Presentation: A Case of rapidly progressive altered mental status and death in a 14 year-old boy.” *Neurology Department Grand Rounds, Veteran’s Administration Hospital - Greater Los Angeles, Los Angeles, CA, 4/25/2008.*

“Clinical Case Presentation: 39 year-old female with headaches and encephalopathy.” *Neurology Department Grand Rounds, Veteran’s Administration Hospital - Greater Los Angeles, Los Angeles, CA, 1/8/2008.*