

CURRICULUM VITAE

NAME: David S. Shannahoff-Khalsa

PLACE AND DATE OF BIRTH: Los Angeles, California, USA

NATIONALITY: United States

EDUCATION:

B.A., Biology, University of California, San Diego, Revelle College, 1971

MAILING ADDRESS:

BioCircuits Institute, (mail code 0328), University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0328

PROFESSIONAL EXPERIENCE:

2011-present, member, The University of California, San Diego, Center for Integrative Medicine

2009-present, Director, The Research Group for Mind-Body Dynamics, BioCircuits Institute, University of California, San Diego

2008-present, Consultant & Yogic Therapist, Department of Psychiatry, University of California San Diego, Executive Mental Health Program, Center for Wellness & Personal Growth

2003-2009, Honorary Associate, The University of Sydney, Australia, Faculty of Health Sciences, Associate Supervisor for Thesis Dissertation using Yoga Meditation to treat Attention Deficit Hyperactive Disorder

1993-2009, Director, The Research Group for Mind-Body Dynamics, Institute for Nonlinear Science, University of California, San Diego (the Institute for Nonlinear Science is now the BioCircuits Institute (see above))

1984-present, President, The Khalsa Foundation for Medical Science, Del Mar, CA

1990-2001, visiting scientist, Laboratory of Michael G. Ziegler, MD, Department of Medicine, Division of Nephrology, University of California, San Diego

1983-1984, Research Associate, Senior Staff Laboratory, Salk Institute for Biological Studies, La Jolla, CA

1976-1983, Collaborative Research Associate, Arthur Vining Davis Laboratory for Behavioral Neurobiology, Salk Institute

1975-1983, Research Assistant, Molecular Biology & Virology Laboratory, Salk Institute

1976-1977, Research Consultant, Terra Marine Bioresearch, San Diego

1970-1973, Research Assistant, Chemical Evolution Laboratory, Salk Institute

1968 (6 months) Research Assistant, Surgical Research Laboratories, UCSD

ADDITIONAL EXPERIENCE:

2009-pres - Senior Editor – The Journal of Alternative and Complementary Medicine

2006-2008 - Associate Editor - The Journal of Alternative and Complementary Medicine

2005-pres - Senior Editorial Board – Natural Standard: The Authority on Integrative Medicine

2005-2007 - Member of the Technical Expert Panel, University of Alberta Evidence-Based Practice Center, Evidence Report on “Effectiveness of Meditation in Healthcare”, funded by the National Center for Complementary and Alternative Medicine, NIH, managed by the Agency for Healthcare Research and Quality.

2000-2006 - Editorial Board - The Journal of Alternative and Complementary Medicine

1997-2000 - Practitioners Advisory Panel - The Journal of Alternative and Complementary Medicine

1989-1991 - Consultant/Advisor - National Research Council, Committee on Techniques for the Enhancement of Human Performance, Committee formed at the request of the Army Research Institute to investigate methods/techniques to overcome stress and maintain competence under unusually high levels of stress.

1987-1990 - Task Force Member - The California Task Force to Promote Self-Esteem, and Personal, and Social Responsibility (California legislature passed bill to investigate and recommend programs for prevention and rehabilitation in 6 areas: (1) crime and violence, (2) drug and alcohol abuse, (3) child and spousal abuse, (4) teenage pregnancy, (5) chronic welfare

dependency, (6) failure to learn in the educational system.

1988-1990 - Consultant - San Diego City Unified School District, workshops for staff, teachers, and students, techniques to reduce stress, enhance mental development and educational performance.

1985-1987 - Editorial Advisory Board - Human Neurobiology

1976-1990 - Consultant - 3HO SuperHealth (Drug & Alcohol Rehabilitation Hospital), Tucson, Arizona.

1974-pres - Studied Yogic Medicine and taught Kundalini Yoga.

CONFERENCE PRESENTATIONS:

American Psychiatric Association Conferences:

165th Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, "Kundalini Yoga Meditation Techniques for Anxiety Disorders Including OCD, Depression, Attention Deficit Hyperactivity Disorder, and Posttraumatic Stress Disorder" Course 5, May, 5, 2012, Philadelphia.

165th Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, "Kundalini Yoga Meditation Techniques for Schizophrenia, the Personality Disorders, and Autism" Course 19, May, 6, 2012, Philadelphia.

164th Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, "Kundalini Yoga Meditation Techniques for Anxiety Disorders Including OCD, Depression, Attention Deficit Hyperactivity Disorder, and Posttraumatic Stress Disorder" May 14, 2011, Honolulu.

164th Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, "Kundalini Yoga Meditation Techniques for Schizophrenia, the Personality Disorders, and Autism" May 15, 2011, Honolulu.

163rd Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, "Kundalini Yoga Meditation Techniques for Anxiety Disorders Including OCD, Depression, Attention Deficit Hyperactivity Disorder, and Posttraumatic Stress Disorder" May 25, 2010, New Orleans.

163rd Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, "Kundalini Yoga Meditation Techniques for Schizophrenia, the Personality

Disorders, and Autism” May 26, 2010, New Orleans.

161st Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, “Kundalini Yoga Meditation Techniques for Psychiatric Disorders” May 3, 2008, Washington, DC.

160th Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, “Kundalini Yoga Meditation Techniques for Mental Health” May 20, 2007, San Diego, California.

159th Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, “Kundalini Yoga Meditation Techniques for Mental Health” May 21, 2006, Toronto, Ontario, Canada.

158th Annual Meeting, **American Psychiatric Association**, Full Day 6 Hour Accredited CME Course, “Kundalini Yoga Meditation Techniques for Psychiatric Disorders” May 22, 2005, Atlanta, Georgia.

157th Annual Meeting, **American Psychiatric Association**, 90 min workshop, “Kundalini Yoga Meditation Techniques for Psychiatric Disorders” May 5, 2004, New York City, NY

156th Annual Meeting, **American Psychiatric Association**, OCD Symposium on “New Research and Current Strategies for the Treatment of Obsessive Compulsive Disorder,” “Kundalini Yoga Meditation for the Treatment of OCD,” May 21, 2003, San Francisco, CA.

Other Conferences:

18th Annual Santa Fe Symposia, New England Educational Institute, “Kundalini Yoga Meditation Techniques and Protocols Specific for Treating GAD, OCD, Addictions, Impulse Control and Eating Disorders, MDD, Bipolar Disorders, ADHD and Co-morbid Disorders, and PTSD” October 29 - 31, 2010. Santa Fe, NM.

International Conference on Total Health – Modern Medicine, Yoga and Ayurveda: Research Perspectives, “Kundalini Yoga Meditation Techniques Specific for the Treatment of Psychiatric Disorders,” September 24-26, 2010, Orlando, Florida.

6th International Conference on Hemodynamics, Time Series Analysis and Sleep-Related Ultradian Variations in Beat-to-Beat Measures of MAP vs SI and CNS-ANS States, Vechta, Germany, June 4-5, 2009.

The National Institute for Developmental Psychiatry, Inauguration Conference,

Psychiatry for Development of Infants and Adolescents, A New Paradigm for Psychiatry, "A Novel Non-invasive Approach for the Treatment of Children and Adolescents at Risk for the Development of Psychiatric Disorders," Department of Psychiatry, University of Sao Paulo, Brazil, March 19-20, 2009.

8th World Congress on Qigong, San Francisco, CA, Nov 19, 2005, lecture – "Physiological Studies in Mind-Body Medicine Based on Concepts and Techniques from Kundalini Yoga and a Randomized Controlled Trial Treating Obsessive Compulsive Disorder."

8th World Congress on Qigong, San Francisco, CA, Nov 19, 2005, "An Experiential Workshop with Kundalini Yoga Meditation Techniques Specific for Psychiatric Disorders."

Whole Person Health Summit 2005, Highlights of Novel Studies in Mind-Body Medicine Based on Concepts and Techniques from Kundalini Yoga, Bethesda, MD, April 14-17, 2005.

Cyber Physiology and Self Regulation in Pediatrics, April 27, 2002, Children's Hospital and Health Center, Children's Integrative Medicine, San Diego, CA

8th Annual Obsessive Compulsive Foundation Conference, July 20-22, 2001, Denver, CO

7th Annual Obsessive Compulsive Foundation Conference, August 11-13, 2000, Schaumburg, IL

6th International MusicMedicine Symposium on Music, Physiology, and Medicine, The University of Texas Health Science Center, October 10-12, 1996, San Antonio, Texas

Alternative Medicine Program Advisory Council, National Institutes of Health, Department of Health and Human Services, presentation: Clinical Case Report: Efficacy of Yogic Techniques in the Treatment of Obsessive Compulsive Disorders, September 18-19, 1995, Rockville, Maryland

5th International MusicMedicine Symposium on Music, Physiology and Medicine, University of Texas Health Science Center, March 17-19, 1994, San Antonio, Texas

6th International Congress of Psychophysiology, Symposium on Hemispheric Imbalance and the Modifiability of Maladaptive Processes, September 1-6, 1992, Berlin, Germany

Education For The 21st Century - Exploring the Brain's Potential, May 3-5, 1991, San

Diego, sponsored by the San Diego City & County Schools & USD

The Asian Conference on Chronobiology and Chronomedicine, March 24-29, 1991, Chengdu, China

5th International Congress of Psychophysiology, Symposium on Lateralization in Autonomic and Neuroendocrine Control, July 9-14, 1990, Budapest, Hungary

4th International Symposium for Music in Medicine, Annenberg Center for Health Sciences, Eisenhower Medical Center, Palm Springs, CA, October 24-29, 1989

California Association of Child Care Workers, June 6, 1988, San Diego, CA

International Child and Youth Care Conference, March 22-25, 1988, Wash. D.C.

The First International Conference on Energy Medicine, Feb 27 - March 1, 1987, Madras, India

The Third International Conference for Music and Medicine, Oct 11-12, 1986, Ludenscheid, Germany

The Third International Conference on Multiple Personality/Dissociative States, Sept 19-21, 1986, Chicago, Ill

Beyond the Relaxation Response: Self-Regulation & Healing for Clinicians, Oct 26-28, 1984, University of California, Los Angeles

How Might Positive Emotions Affect Physical Health, Stanford University, May 13-15, 1984, Stanford, CA

GRAND ROUNDS LECTURES AND OTHER RECENT PRESENTATIONS:

Science and Nonduality Conference 2013 - Presentations, Pre-Conference Workshop (3 hrs) "Kundalini Yoga Meditation Techniques for Enlightenment," Lecture (35 min) "Kundalini Yoga Meditation: Disorder-Specific Techniques for Treating Psychiatric Disorders," Experiential class (50 min) "A Kundalini Yoga Pranayam to Awaken the Dormant Regions of the Brain and a Mantra to Awaken, Balance, and Heal the Eight Chakras," San Jose, CA October 24-25, 2013.

"Kundalini Yoga Meditation Techniques as Taught by Yogi Bhajan" In: Dharma & Yoga Festival 2013 Celebrating the 150th Birth Anniversary of Swami Vivekananda, San Diego, CA, September 29, 2013.

“Kundalini Yoga Meditation: An Ancient Technology of the Mind” In Symposium - Innovative Methods and Devices for Personal Health, The Indus Entrepreneurs (South Coast), La Jolla, CA April 23, 2013.

“On Rhythms and Reality: Contributions Towards Perception and Healing from Kundalini Yoga,” Lecture, The V.S. Ramachandran Research Group, UCSD, April 4, 2013.

“Kundalini Yoga Meditation Techniques for Psychiatric Disorders” at the UCSD Center for Integrative Medicine – Executive Team Members, January 25, 2012.

“Kundalini Yoga Meditation Techniques for Psychiatric Disorders” at the UC San Diego Center for Integrative Medicine – Humanizing Health Care, Inaugural Conference, UCSD Moores Cancer Center, August 27, 2011.

Exploring the Science of Yoga Series: “Scientific Discoveries Based on Kundalini Yoga and an Array of Meditation Techniques for Psychiatric Disorders, Health, Longevity and as Anti-Aging Therapies,” California Institute for Telecommunications and Information Technology (Calit2), University of California, San Diego, March 24, 2011.

“Kundalini Yoga Meditation Techniques for Longevity and as Anti-Aging Therapies” Stein Institute for Research on Aging, University of California, San Diego January 10, 2011.

"Kundalini Yoga Meditation Techniques Specific for the Addictions, OCD, Impulse Control Disorders, and Compulsive Behavior," National Institute on Drug Abuse (NIDA), National Institutes of Health (NIH), Oct 15, 2010.

“Kundalini Yoga Meditation Techniques for Psychiatric Disorders,” Professor’s Rounds, Department of Psychiatry, Rady Children’s Hospital, San Diego, November 20, 2009.

“Kundalini Yoga Meditation Techniques for Psychiatric Disorders,” 2nd Year Psychiatric Residents, UCSD Department of Psychiatry, March 26, 2009 and earlier presentations on Jan 23, 2004, Jan 26, 2006, Jan 11, 2007, and March 27, 2008.

“Kundalini Yoga Meditation Techniques for Psychiatric Disorders,” PROTOC Group, Department of Psychiatry, University of Sao Paulo, Brazil, March 18, 2009.

“Kundalini Yoga Meditation Techniques for Psychiatric Disorders” A Full Day 7 hr CE Course, The Center for Integrative Psychology at Alliant International University, November 1, 2008.

"Kundalini Yoga Meditation Techniques for Psycho-Oncology Patients and Care Givers: An Interactive Participant Workshop" The Psycho-Oncology Seminar Series, Moores UCSD Cancer Center, September 17, 2008.

"A Multi-Part Kundalini Yoga Meditation Protocol for Psycho-Oncology Patients," The Psycho-Oncology Seminar Series Grand Rounds, Moores UCSD Cancer Center, August 20, 2008.

"Psychophysiological States: The Ultradian Dynamics of Mind-Body Interactions," The Department of Cognitive Science, UCSD, April 22, 2008.

"Psychophysiological States: The Ultradian Dynamics of Mind-Body Interactions," J.C. Gillan Sleep and Chronobiology Seminar Series, UCSD Department of Psychiatry, February 5, 2008.

"Kundalini Yoga Meditation Techniques for Psychiatric Disorders" October 5, 2007, Grand Rounds Lecture, Department of Psychiatry, Rady Children's Hospital San Diego.

"Kundalini Yoga Meditation Techniques for the Treatment of Fatigue, Depression, and Anxiety" and "Yogic Insights and Contributions Towards Understanding Brain Function, the Nervous System, and Physiology", at The War-Related Illness and Injury Study Center, VA Medical Hospital, East Orange, New Jersey, and University of Medicine and Dentistry of New Jersey, May 4, 2004.

A Randomized Controlled Trial Using Yogic Meditation Techniques to Treat Obsessive Compulsive Disorder: Clinical Results and Experiential Introduction to the Meditation Protocol - University of Virginia, Charlottesville, Department of Psychiatry, June 4, 2000.

Yogic Meditation Techniques are Effective in the Treatment of Obsessive Compulsive Disorders: Implications for Psychiatry - Children's Hospital, San Diego, Department of Psychiatry, December 6, 1996.

PUBLICATIONS:

Scientific Publications

In Preparation:

Shannahoff-Khalsa DS, Fernandes RY, Pereira CB, March JS, Leckman JS, Sergio M, Polanczyk GV, Miguel EC, Shavitt RG, Kundalini Yoga Meditation vs the Relaxation Response for Treating Obsessive-Compulsive Disorder: A Randomized Controlled Clinical Trial.

Shannahoff-Khalsa DS, Schult R, Sramek BB, Ultradian Hemodynamics and Autonomic-Central Nervous System States During Sleep: Insights for Diagnosing and Treating Hypertension.

In Submission:

Shannahoff-Khalsa DS, Golshan S, Nasal cycle dominance and hallucinations in an adult schizophrenic female, *Psychiatry Research*.

In Press:

Published:

Shannahoff-Khalsa DS, *Sacred Therapies: The Kundalini Yoga Meditation Handbook for Mental Health*. W. W. Norton & Co. Inc., New York, London, 2012.

Shannahoff-Khalsa D. (2012) Meditation: The Science and the Art. In: V.S. Ramachandran (ed.) *The Encyclopedia of Human Behavior*, vol. 2, pp. 576-584. Academic Press.

Shannahoff-Khalsa DS, *Kundalini Yoga Meditation for Complex Psychiatric Disorders: Techniques Specific for Treating the Psychoses, Personality, and Pervasive Developmental Disorders*, W. W. Norton & Co. Inc, New York, London, 2010 (professional book division).

Bucolo M, Di Grazia F, Sapuppo F, **Shannahoff-Khalsa D**, Identification of MEG-Related Brain Dynamics Induced by a Yogic Breathing Technique, Conference Proceedings, IEEE Workshop on Health Care Management, Venice, Italy — February 18-20, 2010

Di Grazia F, Sapuppo F, Pistagna C, **Shannahoff-Khalsa D**, Fortuna L, Bucolo M. (2009). Brain Functional Synchronization on Grid. Final Workshop on Grid Projects "Research" PON 2000-2006 - Advise 1575. Department of Physics and Astronomy, Catania, Italy. February 10 -12, 2009.

Di Grazia F, Sapuppo F, **Shannahoff-Khalsa D**, Bucolo M, Network Parameters for Studying Functional Connectivity in Brain MEG Data, *International Journal of Bioelectromagnetism*, Vol. 11, No. 4, pp.161-169, 2009

Bucolo M, Di Grazia F, Sapuppo F, **Shannahoff-Khalsa D**. Unsupervised Classification for Nonlinear Dynamical Analysis of Brain MEG Activity. 7th International Symposium

on Noninvasive Functional Source Imaging of the Brain and Heart & 7th International Conference on Bioelectromagnetism, Rome, Italy, March 29-34, 2009.

Bucolo M, Di Grazia F, Sapuppo F, **Shannahoff-Khalsa D**. Network Parameters for Studying Functional Connectivity in Brain MEG Data. 7th International Symposium on Noninvasive Functional Source Imaging of the Brain and Heart & 7th International Conference on Bioelectromagnetism, Rome, Italy, March 29-34, 2009.

Shannahoff-Khalsa, D.S., Comments on the Short Publication "Immediate Effects of Right and Left Nostril Breathing on Verbal and Spatial Scores" by Meesha Joshi and Shirley Telles in *IJPP* 2008; 52: 197-200. *Indian Journal of Physiology and Pharmacology* 2009; 53(1):102-104.

Bond K, Ospina MB, Hooton N, Bialy L, Dryden DM, Buscemi N, **Shannahoff-Khalsa D**, Dusek J, Carlson, LE. Defining a Complex Intervention: The Development of Demarcation Criteria for "Meditation." *Psychology of Religion and Spirituality*. Vol 1(2), 2009, 129-137.

Ospina MB, Bond K, Karkaneh M, Buscemi N, Dryden DM, Barnes V, Carlson LE, Dusek JA, **Shannahoff-Khalsa D**. Clinical trials of Meditation Practices in Healthcare: Characteristics and Quality, *The Journal of Alternative and Complementary Medicine*, December 2008, 14(10): 1199-1213..

Shannahoff-Khalsa DS, Kundalini Yoga meditation techniques in the treatment of obsessive compulsive and OC spectrum disorders. In: Editor, Albert R. Roberts, Ph.D., *Social Workers' Desk Reference*, second edition, New York, N.Y. Oxford University Press, Chapter 86 pp. 606-612, 2008.

Bucolo M, Di Grazia F, Frasca M, Sapuppo F, **Shannahoff-Khalsa D**. From Synchronization to Network Theory: A Strategy for MEG Data Analysis. *Proceedings of the 16th Mediterranean Conference on Control and Automation, MED'08*, Ajaccio, France, June 25-27, art. no. 4602069, pages 854-859, 2008.

Shannahoff-Khalsa, DS, Psychophysiological States: The Ultradian Dynamics of Mind-Body Interactions, In the series "International Review of Neurobiology," Academic Press (Elsevier Scientific Publications), vol 80, pps. 1-249, 2008 (written by invitation).

Shannahoff-Khalsa, DS, Selective Unilateral Autonomic Activation: Implications for Psychiatry (a review article), *CNS Spectrums: The International Journal of Neuropsychiatric Medicine*, 12(8), pp. 625-634, Aug 2007.

Bucolo M, Di Grazia F, Fortuna L, Frasca M, Sapuppo F, **Shannahoff-Khalsa D**, Complementary Methods for Interpreting Brain Signals: Linear versus Nonlinear

Techniques, Engineering in Medicine and Biology Society, 2007. EMBS 2007. 29th Annual International Conference of the IEEE, 22-26 Aug. 2007, art. no. 4352704, Page(s):1969-1972.

Arena P, Bucolo M, Fortuna L, Frasca M, La Rosa M, Sapuppo F, Umana E, **Shannahoff-Khalsa, D.** d-infinite criteria for MEG characterization, Proceedings - IEEE International Symposium on Circuits and Systems, art. no. 4252889, pp. 1317-1320.

Shannahoff-Khalsa DS, Kundalini Yoga Meditation: Techniques Specific for Psychiatric Disorders, Couples Therapy, and Personal Growth, W. W. Norton & Company, New York, London, 2006 (a professional book, written by invitation).

Shannahoff-Khalsa D, A perspective on the emergence of meditation techniques for medical disorders. The Journal of Alternative and Complementary Medicine, 12(8), 709-713, 2006.

Sapuppo, F., Umana, E., Frasca, M., La Rosa, M., **Shannahoff-Khalsa, D.**, Fortuna, L., Bucolo, M., Complex spatio-temporal features in MEG data. Mathematical Biosciences and Engineering, 3(4), 697-716, 2006.

Shannahoff-Khalsa DS. Patient perspectives: Kundalini yoga meditation techniques for psycho-oncology and as potential therapies for cancer. Integrative Cancer Therapies, 4(1):87-100, 2005.

Sapuppo F, La Rosa M, Frasca M, **Shannahoff-Khalsa D**, Bucolo M, Fortuna L, A New Approach for Exploring Complexity in MEG Signals, The 13th International IEEE Workshop on Nonlinear Dynamics of Electronic Systems (NDES 05), Potsdam, Germany, 13-22 September 2005.

La Rosa M, **Shannahoff-Khalsa D**, Frasca M, Bucolo M, Fortuna L, Indicators in brain regions: the energy spatial patterns, Proceedings - The 3rd European Medical and Biological Engineering Conference November 20 – 25, 2005, Prague, Czech Republic, IFMBE Proc. 2005 11(1) ISSN: 1727-1983.

Shannahoff-Khalsa D, Sramek BB, Kennel MB, Jamieson SW, Hemodynamic Observations on a Yogic Breathing Technique Claimed to Help Eliminate and Prevent Heart Attacks: A Pilot Study, The Journal of Alternative and Complementary Medicine, 10(5), 757-766, 2004.

Shannahoff-Khalsa D, An Introduction to Kundalini Yoga Meditation Techniques that are Specific for the Treatment of Psychiatric Disorders, The Journal of Alternative and Complementary Medicine, 10(1), 91-101, 2004.

Bucolo M, Fortuna L, Frasca M, La Rosa M, Virzì MC, **Shannahoff-Khalsa D**, A nonlinear circuit architecture for magnetoencephalographic signal analysis, *Methods of Information in Medicine*, 43(1), 89-93, 2004.

La Rosa M, Bucolo M, Bucolo G, Fortuna L, Frasca M, **Shannahoff-Khalsa D**, Sorbello M. Nonlinear techniques and neural activity: Emergent trends in MEG data. *Proceedings - IEEE International Symposium on Circuits and Systems 4*, pp. IV-65-IV-68, 2004.

Shannahoff-Khalsa DS, Kundalini Yoga meditation techniques in the treatment of obsessive compulsive and OC spectrum disorders, *Brief Treatment and Crisis Intervention*, 3:369-382 (2003) (by invitation).

Shannahoff-Khalsa D, Editorial, The complications of meditation trials and research: issues raised by the Robinson, Mathews, and Witek-Janusek paper - "Psycho-Endocrine-Immune Response to Mindfulness-Based Stress Reduction in HIV Infected Individuals: A Quasi-Experimental Study" *The Journal of Alternative and Complementary Medicine*, 9(5):603-605 (2003).

La Rosa M, Bucolo G, Bucolo M, Frasca M, **Shannahoff-Khalsa D**, Sorbello M, Nonlinear Spatio-Temporal Analysis for Neural Activity Characterization in MEG Data, *Proceedings on CD - EMBC 2003 - the 25th International Conference of the IEEE Engineering in Medicine and Biology Society Proceedings 3*, Cancun, 2003, 17 - 21 September, pp. 2374-2377

Bucolo G, Bucolo M, Frasca M, La Rosa M, **Shannahoff-Khalsa D**, Sorbello M, Spatial Modes in Magnetoencephalography Spatio-Temporal Patterns, *Proceedings on CD - EMBC 2003 - the 25th International Conference of the IEEE Engineering in Medicine and Biology Society Proceedings 3*, Cancun, 2003, 17 - 21 September, pp. 2706-2709

Baglio S, Bucolo M, Fortuna L, Frasca M, La Rosa M, **Shannahoff-Khalsa D**, MEG signals spatial power distribution and gamma band activity in yoga breathing exercises. In: *Conference Proceedings of the IEEE Engineering in Medicine and Biology Society 2002*, Houston, October 23-26, 2002. *Proceedings 1*, pp. 175-176.

Bucolo M, Fortuna L, Frasca M, La Rosa M, **Shannahoff-Khalsa D**, A CNN based system to blind sources separation of MEG signals. In *Proceedings of the 7th IEEE International Workshop on Cellular Neural Networks and their Application CNNA2002*, July 22-26, 2002, Frankfurt.

Bucolo M, Fortuna L, Frasca M, La Rosa M, **Shannahoff-Khalsa D**, Virzì MC. A Nonlinear Circuit Architecture For Magnetoencephalographic Signals Analysis", In *Proceedings BSI2002, The 4th International Workshop On Biosignal Interpretation June*

24-26th, 2002 Villa Olmo, Como, Italy.

Shannahoff-Khalsa D, Stress management for gastrointestinal disorders: The use of Kundalini Yoga meditation techniques, *Gastroenterology Nursing*, 25(3), 126-129, May/June 2002, (by invitation)

Shannahoff-Khalsa DS, Unilateral forced nostril breathing: Basic science, clinical trials, and selected advanced techniques, *Subtle Energies and Energy Medicine Journal*, Vol. 12, No. 2, pp. 79-106, 2001 (by invitation).

Shannahoff-Khalsa DS, Gillin JC, Yates EJ, Schlosser A, Zawadzki EM, Ultradian rhythms of alternating cerebral hemispheric EEG dominance are coupled to rapid eye movement and stage 4 non-rapid eye movement sleep stage in humans, *Sleep Medicine*, Vol. 2, no. 4, pp.333-346, 2001.

Fortuna L, Bucolo M, Frasca M, LaRosa M, **Shannahoff-Khalsa DS**, Schult RL, and Wright JA, Independent component analysis of magnetoencephalography data. Proceedings on CD - EMBC 2001 - the 23rd International Conference of the *IEEE Engineering in Medicine and Biology Society*, Istanbul, Turkey, 25-28, October 2001. Proceedings 2, pp. 1981-1984

Shannahoff-Khalsa DS, and Yates FE. Ultradian sleep rhythms of lateral EEG, autonomic, and cardiovascular activity are coupled in humans. *International Journal of Neuroscience*, 101(1-4), 21-43, 2000.

Shannahoff-Khalsa DS, Ray LE, Levine S, Gallen CC, Schwartz BJ, Sidorowich JJ. Randomized Controlled Trial of Yogic Meditation Techniques for Patients with Obsessive Compulsive Disorders, *CNS Spectrums: The International Journal of Neuropsychiatric Medicine*, vol 4, no. 12, pp 34-46, 1999.

Novikov E, Novikov A, **Shannahoff-Khalsa D**, Schwartz B, Wright J. Similarity regime in the brain activity, *Applied Nonlinear Dynamics and Stochastic Systems Near the Millennium*, edited by J.B. Kadiké and A. Bulsara, The American Institute of Physics Press, 1997, pp. 299-302.

Novikov E, Novikov A, **Shannahoff-Khalsa D**, Schwartz BJ, Wright JA, Scale - Similar Activity in the Brain, *Physical Review E*, 56(3)R2387-2389, 1997.

Shannahoff-Khalsa DS, Yogic Techniques are Effective in the Treatment of Obsessive Compulsive Disorders, In: Eric Hollander & Dan Stein, eds., *Obsessive-Compulsive Disorders: Diagnosis, Etiology, and Treatment*, Marcel Dekker Inc., New York, pp. 283-329, 1997.

Shannahoff-Khalsa DS, Kennedy B, Yates FE, Ziegler MG, Low Frequency Ultradian Insulin Rhythms are Coupled to Cardiovascular, Autonomic, and Neuroendocrine Rhythms, *American Journal of Physiology: (Regulatory, Integrative Comp. Physiol., 41)*, R962-R968, 1997.

Shannahoff-Khalsa DS, Kennedy B, Yates FE, Ziegler MG, The Ultradian Rhythms of Autonomic, Cardiovascular, and Neuroendocrine Systems are Related in Humans, *American Journal of Physiology 270, (Regulatory, Integrative Comp Physiol, 39)*, R873-887, 1996.

Shannahoff-Khalsa DS, Beckett LR, Clinical Case Report: Efficacy of Yogic Techniques in the Treatment of Obsessive Compulsive Disorders, *International Journal of Neuroscience*, 85:1-17, 1996.

Kennedy B, **Shannahoff-Khalsa DS**, Ziegler MG, Plasma Norepinephrine Variations Correlate with Peripheral Vascular Resistance in Resting Humans, *American Journal of Physiology, (Heart Circ. Physiol.)* 1994, 266:H435-439.

Shannahoff-Khalsa DS, Kennedy B., The Effects of Unilateral Forced Nostril Breathing On the Heart, *International Journal of Neuroscience*, 1993, 73:47-60.

Jella SA, **Shannahoff-Khalsa DS**, The effects of Unilateral Forced Nostril Breathing on Cognitive Performance, *International Journal of Neuroscience*, 1993, 73:61-68.

Shannahoff-Khalsa DS, The Ultradian Rhythm of Alternating Cerebral Hemispheric Activity, *International Journal of Neuroscience*, 1993, 70:285-298.

Shannahoff-Khalsa DS, Lateralized Rhythms of the Central and Autonomic Nervous Systems, *International Journal of Psychophysiology*, 1991, 11:225-251.

Shannahoff-Khalsa DS, Stress Technology Medicine: A New Paradigm for Stress and Considerations for Self-Regulation, In: *Stress: Neurobiology and Neuroendocrinology* (eds.) Brown M, Rivier C, Koob G, Marcel Dekker Inc., New York, 1991, pp. 647-686.

Shannahoff-Khalsa DS, Boyle MR, Buebel ME, The Effects of Unilateral Forced Nostril Breathing on Cognition, *International Journal of Neuroscience*, 1991, 57:239-249.

Shannahoff-Khalsa DS, A Contemporary View of Life Force Biology: the Merging of Kundalini Yoga and the Neurosciences. In: *Energy Medicine Around the World*, (ed.) TM Srinivasan, Gabriel Press, Phoenix, Arizona, 1988, pp. 89-110.

Werntz DA, Bickford RG, **Shannahoff-Khalsa DS**, Selective Hemispheric Stimulation by Unilateral Forced Nostril Breathing, *Human Neurobiology*, (1987), 6:165-171.

Kennedy B, Ziegler MG, **Shannahoff-Khalsa DS**, Alternating Lateralization of Plasma Catecholamines and Nasal Patency in Humans. *Life Sciences*, (1986), 38:1203-1214.

Klein R, Pilton D, Prosser S, **Shannahoff-Khalsa DS**, Hemispheric Performance Efficiency Varies with Nasal Airflow. *Biological Psychology*, (1986) 23:127-137.

Werntz DA, Bickford RG, Bloom FE, **Shannahoff-Khalsa DS**, Alternating Cerebral Hemispheric Activity and the Lateralization of Autonomic Nervous Function. *Human Neurobiology*, (1983) 2:39-43.

Helfman WB, Hendler SS, **Shannahoff D**, Smith DW, Escherichia coli DNA Polymerase II and III: Substrate Specificity. *Biochemistry*, vol. 17, no. 9, (1978), 1607-1611.

Brox LW, LePage GA, Hendler SS, **Shannahoff D**, Studies on the Growth Inhibition of Metabolism of 2'-deoxy-2'-fluorocytidine. *Cancer Research*, 34, Aug (1974), 1838-1842.

Shannahoff D, Sanchez RA, 2,2'-Anhydropyrimidine Nucleosides: Novel Synthesis and Reactions. *Journal of Organic Chemistry*, 38, (1973), 593-598.

Unpublished Commentaries and Reports:

Shannahoff-Khalsa DS, A Commentary on the Jasper Brener and Samuel R. Connolly Report: Meditation: Rationales, Experimental Effects, and Methodological Issues with Examples and Discussion of Meditative Techniques to Enhance Human Performance, commissioned report to the National Research Council, Committee on Techniques to Enhance Human Performance, March 29, 1990.

Shannahoff-Khalsa DS, Lateralized Rhythms of the Central and Autonomic Nervous Systems: Implications for Stress, Adaptation, and Psychopathology, Paper presented at The 5th International Congress of Psychophysiology, Symposia for Lateralization of Autonomic and Neuroendocrine Control, Budapest, Hungary, July 9-13, 1990.

Shannahoff-Khalsa DS, Advanced Neuropsychological Technology Programs for Defense, introductory report requested by Capt. Jake W. Stewart, Assistant Undersecretary of Defense (Plans and Development), Pentagon, Jan 1987.

Additional Papers

Shannahoff-Khalsa DS, Sounds for Transcendence: Yogic Techniques for Opening the Tenth Gate, *MusicMedicine II*, (eds.) R. R. Pratt & R. Spintge, Gilsum, New Hampshire: Barcelona Publishers, (1996), pp. 351-360.

Shannahoff-Khalsa DS, Bhajan Y, A Technique to Help Break the Cocaine Habit, *California Prevention Network Journal*, (1990) no. 4, pp. 10-11.

Shannahoff-Khalsa DS, Bhajan Y, Purging the Subconscious Mind: Therapeutic Techniques for Prevention and Rehabilitation, *California Prevention Network Journal*, (1990) no. 3, pp. 28-30.

Shannahoff-Khalsa DS, Bhajan Y, The Role of the Subconscious Mind in Substance Abuse: Therapeutic Techniques for Prevention and Rehabilitation, *California Prevention Network Journal*, (1989) no. 2, pp. 6-8.

Shannahoff-Khalsa DS, Bhajan Y, The Healing Power of Sound: Techniques from Yogic Medicine. In: *MusicMedicine*, (eds.) R. Droh & R. Spintge, Gilsum, New Hampshire: Barcelona Publishers, 1991, pp. 179-193.

Shannahoff-Khalsa DS, Bhajan Y, Sound Current Therapy and Self-healing: the Ancient Science of Nad and Mantra Yoga. In: *International Journal of Music, Dance and Art Therapy*, Vol. 1, No. 4, December, 1988, 183-192.

Shannahoff-Khalsa DS, Rhythms of the Mind and Breath, paper presented at "How Might Positive Emotions Affect Physical Health?" Stanford University, May 13- 15, 1984, In: *Advances*, 1989, vol. 6, no. 2, 51-55.

Shannahoff-Khalsa D, Breathing for the Brain. *American Health*, Nov, 1986, 16- 17.

Shannahoff-Khalsa D, Rhythms and Reality: The Dynamics of the Mind, *Psychology Today*, (1984) Sept 72-73.

Abstracts

Shannahoff-Khalsa D, Kundalini Yoga Meditation Techniques for Schizophrenia, the Personality Disorders, and Autism, Course 10, Proceedings of the 164th Annual Meeting, American Psychiatric Association, CME Course Brochure, May 15, 2011, Honolulu, Hawaii.

Shannahoff-Khalsa D, Kundalini Yoga Meditation for Anxiety Disorders Including OCD,

Depression, Attention Deficit Hyperactivity Disorder, and Posttraumatic Stress Disorder, Course 4, Proceedings of the 164th Annual Meeting, American Psychiatric Association, CME Course Brochure, May 14, 2011, Honolulu, Hawaii.

Shannahoff-Khalsa D, Kundalini Yoga Meditation Techniques for Schizophrenia, the Personality Disorders, and Autism, Course 70, Proceedings of the 163th Annual Meeting, American Psychiatric Association, CME Course Brochure, page 43-44, May 25, 2010, New Orleans.

Shannahoff-Khalsa D, Kundalini Yoga Meditation for Anxiety Disorders Including OCD, Depression, Attention Deficit Hyperactivity Disorder, and Posttraumatic Stress Disorder, Course 77, Proceedings of the 163th Annual Meeting, American Psychiatric Association, CME Course Brochure, page 46, May 26, 2010, New Orleans.

Shannahoff-Khalsa D, Wright J, Schult R, Sramek B. Time Series Analysis and Sleep-Related Ultradian Variations in Beat-to-Beat Measures of MAP vs SI and CNS-ANS States. 6th International Conference on Hemodynamics, Vechta, Germany, June 4-5.

Shannahoff-Khalsa, D, "Kundalini Yoga Meditation Techniques for Psychiatric Disorders," Course 10, Proceedings of the 161th Annual Meeting, American Psychiatric Association, CME Course Brochure, page 12, May 3, 2008, Washington, DC.

Shannahoff-Khalsa, D, "Kundalini Yoga Meditation Techniques for Mental Health," Course 22, Proceedings of the 160th Annual Meeting, American Psychiatric Association, CME Course Brochure, page 16-17, May 20, 2007, San Diego, California.

Shannahoff-Khalsa, D, "Kundalini Yoga Meditation Techniques for Mental Health," Course 24, Proceedings of the 159th Annual Meeting, American Psychiatric Association, CME Course Brochure, page 18, May 21, 2006, Toronto, Ontario, Canada.

Shannahoff-Khalsa, D, "Kundalini Yoga Meditation Techniques for Psychiatric Disorders," Course 21, Proceedings of the 158th Annual Meeting, American Psychiatric Association, CME Course Brochure, pp. 17-18, May 22, 2005, Atlanta, Georgia.

Shannahoff-Khalsa DS, A Highlight of Novel Studies in Mind-Body Medicine Based on Concepts and Techniques from Kundalini Yoga, Proceedings of the Whole Person Health Summit 2005, Bethesda, MD April 14-17, p. 65.

Shannahoff-Khalsa DS, An Experiential Workshop on Kundalini Yoga Meditation Techniques Specific for Treating Fatigue, Anxiety, and Depression, Proceedings of the Whole Person Health Summit 2005, Bethesda, MD April 14-17, p. 65.

Shannahoff-Khalsa DS, Kundalini Yoga Meditation Techniques for Psychiatric

Disorders, Issue Workshop, #83: Page 308. Syllabus and Proceedings Summary. 157th American Psychiatric Association Annual Conference, New York, NY, May 5, 2004.

Shannahoff-Khalsa DS, Kundalini Yoga Meditation for the Treatment of OCD, #65E: Page 130-131. Syllabus and Proceedings Summary. Symposium #65 - New research and novel therapeutic strategies for OCD. 156th American Psychiatric Association Annual Conference, San Francisco, CA, May 17-22, 2003.

Shannahoff-Khalsa DS, Five Sounds of Religion, in *Proceedings of the 6th International MusicMedicine Symposium*, October 10-12, 1996, San Antonio, Texas

Shannahoff-Khalsa DS, Sramek BB, Kennedy B, Ziegler MG, Respiration at one breath per minute for prolonged periods has dramatic effects on the cardiovascular system, in *Proceedings of the 2ND International Conference on Hemodynamics*, March 24-27, 1994, Vechta, Germany

Shannahoff-Khalsa DS, Sounds for Transcendence: Yogic Techniques for Opening the Tenth Gate, in *Proceedings of the 5th International MusicMedicine Symposium*, March 17-19, 1994, San Antonio, Texas

Shannahoff-Khalsa DS, Jella SA, Kennedy B, Ziegler MG, The Effects of Unilateral Forced Nostril Breathing on Cognition and Physiology, *International Journal of Psychophysiology*, 14:149, 1993, 6th International Congress on Psychophysiology, Sept. 2-6, 1992, Berlin Germany

Shannahoff-Khalsa DS, Kennedy B, Ziegler MG, A Study of the Hemodynamic Effects of Varying the Duration of Inhalation to Exhalation Periods, *International Journal of Psychophysiology*, 14:149, 1993, 6th International Congress on Psychophysiology, Sept. 2-6, 1992, Berlin Germany

Shannahoff-Khalsa DS, Lateralized Rhythms of the Nervous System. In: *Proceedings of the Asian Conference on Chronobiology and Chronomedicine*, West China University of Medical Sciences, March 24-29, 1991, Chengdu, China

Shannahoff-Khalsa DS, Lateralized Rhythms of the Central and Autonomic Nervous Systems: Implications for Stress, Adaptation, and Psychopathology. *International Journal of Psychophysiology*, 11:76, 1991, 5th International Congress of Psychophysiology, July 9-14, 1990, Budapest, Hungary

Shannahoff-Khalsa DS, Bhajan Y, The Healing Power of Sound: Techniques from Yogic Medicine. In: *IV. International Music Medicine Symposium*, October 25-29, 1989, Rancho Mirage, CA

Shannahoff-Khalsa DS, A Contemporary View of Lifeforce Biology: Kundalini Yoga and the Neurosciences. In: *Proceedings to the International Conference on Energy Medicine*. Feb 27-March 1, 1987, Madras, India

Shannahoff-Khalsa DS, Bhajan Y, Sound Current Therapy and Self-Healing: The Ancient Science of Nad and Mantra Yoga. In: *III. International MusicMedicine Symposium*, October 11-12, 1986, Ludenscheid, Germany

Shannahoff-Khalsa DS, Neurological mechanisms for "switching" mind states in normals: implications for the switch process in multiple personality disorder. In: *The Third International Conference on Multiple Personality/Dissociative States*, Sept 19-21, 1986, Chicago

Werntz DA, Bickford RG, Bloom FE, **Shannahoff-Khalsa DS**, Selective cortical activation by altering autonomic function. *Western EEG Society Meeting*, Reno, Nevada, Feb 21, 1981

Werntz DA, Bickford RG, Bloom FE, **Shannahoff-Khalsa DS**, Cerebral hemispheric activity and autonomic nervous function. *Society for Neurosciences*, Cincinnati, Ohio, May 7, 1980

Brox LW, LePage GA, Hendler SS, **Shannahoff D**, Inhibition of cell growth by 2'-deoxy-2'-fluorocytidine. *Sixty Fifth Annual Meeting of the American Association for Cancer Research*, Houston, Texas, March 27-30, (1973)

Hendler SS, Sanchez RA, **Shannahoff D**, 2'-Deoxy-2'-Fluorocytidine nucleosides and polynucleotides: chemistry and biochemistry. *162nd National Meeting, American Chemical Society*, Washington, D.C., Sept 12, 1971