Midwest Society for Behavioral Medicine and Biofeedback
Mindfulness: Science, Technologies and Practical Application
Grand Rapids, MI
November 11-13, 2016

Conference Objectives:

1. The attendee will be able to identify core concepts in the definitions of Mindfulness from perspectives of psychological and neuro-physical states of conciousness and the involvement of Mindfulness practices in the areas of chronic disorders of self-regulation (including depression, anxiety, ADHD, insomnia, fatigue and chronic pain).

2. The attendee will be able to summarize the history and functions of biofeedback and neurofeedback as it pertains to Mindfulness

3. The attendee will be able to indentify new developments in the use of real-time QEEG in the measurement and monitoring of emotional and cognitive states.

4. The attendee will learn the practical applciation of stimulation technologies, including pulsed electromagnetic frequencies, micro-current tACS/tDCS, & audio-visual stimulation on states of Mindfulness/cognitive functioning, as well as the treatment of psychological conditions/behavioral health.

5. The attendee will gain insight into the integration of multiple treatment modalities, including hypnosis, biofeedback, neurofeedback and neuro-stimulation techniques into the treatment of chronic pain.

6. The attendees will be able to identify specific technologies which are available within the fields of biofeedback, neurofeedback and neuro-stimulation for the treatment of common disorders, including pain, depression, anxiety, insomnia, myofascial dysfunction and disorders of self-regulation.

The Midwest Society for Behavioral Medicine and Biofeedback is committed to accessibility and non-discrimination in its continuing education activities. MSBMB is also committed to conducting all activities in conformity with the American Psychological Association's Ethical Principles for Psychologists. Participants are asked to be aware of the need for privacy and confidentiality throughout the program. If program content becomes stressful, participants are encouraged to process these feelings during discussion periods. Facilities are accessible to persons with disabilities and reasonable accommodations will be made for persons who request them. Please address questions, concerns and any complaints Brian Milstead, 586-756-5070, brian@bio-medical.com

The MSBMB 2016 conference is sponsored in part by Bio-medical Instruments.

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November 11, 2016 Pre-Conference Workshop

8:30 AM- 9 AM   Registration

9:00 AM-12:00 PM *General Introduction to Biofeedback Peripherals Workshop,* Jon Bale, B.Sc. in Biology from McGill University; BCN-T, Application Specialist Thought Technology. **Introductory Level | 3 CE credits**

This 1-day workshop is for researchers and health professionals who want to learn how to use the latest "cutting edge" biofeedback technology. This workshop provides an overview of biofeedback modalities and stress profiles showcasing physiology, and HRV (skin conductance, temperature, SEMG, respiration heart rate).

Learning Objectives:

1. Explain two psychological conditions which can be modified with Peripheral Biofeedback.
2. Demonstrate how to use different sensors including Surface Electromyography (SEMG), Respiration, Temperature, Skin Conductance, and Heart Rate (Blood-Volume Pulse (BV) and Electrocardiogram (EKG) with multimedia biofeedback screens.
3. Exhibit the skills required to set up and run a Stress Profile session.
4. Know how to generate reports and review data.
5. Explain two psychological conditions that can be modified with HRV.
6. Demonstrate how to run the HRV session and generate reports via Cardio Pro analysis.
7. Be able to utilize Report Analysis: open session and scripted/training generated reports.

12:00 PM-1:00 PM Lunch on your own.

1:00 PM-5:00 PM *General Introduction to Biofeedback Peripherals Workshop continued,* Jon Bale, B.Sc. in Biology from McGill University; BCN-T, Application Specialist Thought Technology. **Introductory Level | 4 CE credits**

In the afternoon, attendees can have the opportunity to have a "hands-on" guided experience with biofeedback training.

November 12, 2016 Conference

8:00 AM-8:30 AM   **Registration/Setup**

8:30 AM-8:45 AM   **President Speech/Keynote Introduction**

8:45 AM-10:15 AM   *There is hope: Optimizing health with biofeedback from an evolutionary perspective*, Keynote – Erik Peper, Ph.D. Professor at San Francisco State University. **Intermediate Level | 1.5 CE credits**

Biofeedback training embedded within an evolutionary perspective offers hope to reverse numerous disorders and avoid iatrogenic effects. The limits of healing are often the limits of our beliefs as illustrated from our research with yogis and Sufis when they demonstrated rapid healing after significant self-inflicted injury. The concepts can be adapted to promote improving clients' health and incorporates the concepts that healing occurs when the client/student feels safe, inhibits illness promoting behaviors, and implements health promoting behaviors and skills. The perspective is illustrated through the use of wearable biofeedback to retrain posture and enhance "power," breathing retraining to improve math performance, and case examples which illustrate successful resolving of epilepsy, vulvodynia, and headache.

Learning Objectives:

1. Understand the importance of our evolutionary background shaping health and illness.
2. Learn and experience how two different breathing patterns affect cognitive function.
3. Understand and be able to explain how wearable posture monitor biofeedback can decrease depression and increase energy

10:15 AM-10:30 AM   **Intermission**

10:30 AM-11:45 AM   *Intro to Breathing, HRV and Blood Pressure,* Jon Bale, B.Sc. in Biology from McGill University; BCN-T, Application Specialist at Thought Technology, **Introductory Level | 1.25 CE credit**

This presentation showcases Thought Technology's HRV Software Suite for assessment and training the dynamics of respiration, heart rate variability and blood pressure. Whether you are a newcomer to the field of biofeedback, or an experienced health professional looking for a refined HRV measurement solution, this session will provide an excellent synopsis to all aspects of the software and automated report analysis.

Learning Objectives:

1. Demonstrate how to use Respiration and Heart Rate (Blood-Volume Pulse sensor with multimedia biofeedback screens.
2. List two aspects of the HRV Biofeedback report that would be useful to treatment.
3. Demonstrate how to run the HRV session and analyze reports.

11:45 AM-1:00 PM   **Lunch – The Grand Room *lunch included**

1:00 PM-2:30 PM   *NeuroField pEMF, tDCS/tACS/tRNS & QEEG Neurofeedback Techniques* Nicholas Dogris, Ph.D., Psychologist, CEO and Founder of Neurofield Inc. **Intermediate Level | 1.5 CE Credits**

This presentation is designed to review the effect of pEMF (pulsed electromagnetic field) therapy on people with ADHD, Autism, Depression and Anxiety. Recent innovations involving pEMF cross frequency coupling (CFC) strategies have been developed for the NeuroField system. These new CFC innovations are extremely effective in regulating network hubs and have the ability to quickly shift de-regulated systems for the purpose of making EEG neurotherapy more effective. A review of this method will be part of this webinar.

Learning Objectives:

1. Explain two of the effect of tDCS on EEG.
2. Explain two of the effects of tACS on EEG.
3. Discuss the effects of tRNS on two symptoms.
4. Explain two of the effects of pEMF on EEG

2:30 PM-2:45 PM   Intermission

2:45 PM-4:00 PM   *Integrating Hypnosis and Biofeedback for Pain Management*
Eric K. Willmarth, Ph.D., Director of Integrative Mental Health, College of Integrative Medicine and Health Sciences, Saybrook University
Intermediate/Advanced Level | 1.25 CE Credits

Biofeedback and Hypnosis have distinctly different histories yet together they form the core pillars of self-regulation and complimentary medicine. This workshop will provide an overview of how these modalities can be used to address the urgent need for improved pain management for those suffering from chronic pain. This is especially timely as regulators are placing more limits on the use of narcotic medications by individuals with chronic pain. After providing a brief summary of the literature supporting both hypnosis and biofeedback, participants with watch and engage in demonstrations designed to provide skills that can be immediately put into use. This workshop will include lectures, demonstrations, video and PowerPoint presentations.

Learning Objectives:

1. Participants will be able to describe at least 5 pathways of chronic pain
2. Participants will be able to describe at least three non-medication approaches for pain management
3. Participants will be demonstrate effective word selection in pain patient communication.
4. Participants will be able to pair at least 3 pain type and treatment modality combinations.

4:00 PM-5:00 PM   *Getting the most out of Stress Assessment,* Linda Walker, MHR, Licensed Counselor at Inland Seas Neurotherapy and Counseling
Introductory/Intermediate Level | 1 CE Credits

The psychophysiological stress assessment provides a window into how a client may respond to low-grade to moderate stressors, which makes it a powerful tool for guiding biofeedback, as well as other behavioral therapies. By making visible the normally hidden physiological response patterns, a client may gain insight, for example, into how postural and muscle responses impact

chronic pain problems, such as tension headaches or neck and shoulder pain. Skin conductance and temperature measurements may hint at an individual's stress management and recovery skills. Finally, respiration and heart patterns help the client appreciate the impact of stress on overall health and mood management.

This workshop covers appropriate use of sensors and equipment, tips for tailoring the assessment to match the client and interpretation approaches. The workshop will make use of case studies and corresponding psychophysiological profiles.

Learning Objectives:

1. Participants will be able to recognize and describe at least one stress response pattern when examining sEMG, temperature, skin conductance, respiration and heart function.
2. Participants will be able to state at least one strategy for tailoring a stress assessment to the needs and treatment goals of the client.
3. Participants will review appropriate application of physiological sensors needed for assessment and be able to describe how at least one artifact can be prevented for each modality measured.
4. Participants will be able to identify at least one treatment strategy when viewing an example of a psychophysiological profile.

6:00 PM-7:00 PM   Cocktail Reception

November 13ᵗʰ, 2016   Conference

8:30 AM-10:00 AM   *Biofeedback and Virtual Reality and other technologies used to facilitate the suppression of anxiety,* Robert Reiner, Ph.D. Executive Director, BCIA – BCB, BCN. **Intermediate Level | 1.5 CE Credits**

I will provide a history and scientific rationale for the use of cutting-edge technologies which are now considered a call enter for anxiety management. Following the presentation, attendees will have a broad understanding of available technologies and how and why they have been so successful.

Learning Objectives:

1. Explain the history of virtual reality.
2. Discussion the underlying theory that supports the use of virtual reality as an exposure to all.
3. Discuss how to combine biofeedback with virtual reality.
4. List two reasons why using biofeedback is more effective than simple extinction.

10:300 AM-10:15 AM   Intermission

10:15 AM-11:45 AM   *Stimulation Technologies (AVE, CES and tDCS): Essential Tools for Neuropsychology,* Dave Siever, CET, Owner of Mind Alive Inc. **Intermediate/Advanced Level | 1.5 CE Credits**

Psychological ailments and disorders are prevalent within society. Regardless of the origins of the ensuing psychological issues; be it genetic, life events, pain, nutrition, etc., undesired neur-plasticity results. This in turn exacerbates those very issues and may produce secondary concerns as well. In many cases, the inflicted have succumbed to the point where cognitive therapeutic approaches such as counselling, cognitive therapy, biofeedback and neurofeedback cannot be used, as the person is not able to engage cognitively in the therapy.

 Stimulation Technologies have been proven to affect neuroplastic changes in powerful and positive ways without the need for volition as part of the healing and treatment paradigm. They are low cost, effective and easy to use. Clients need not put in any effort at all into the therapy and as a result adherence to Stim Tech as a treatment option is high and drop-outs are low. As the patient improves, cognitive approaches may be entered into as determined by the therapist.

This workshop will present the history, physiological mechanisms, studies and the similarities and differences between these various treatment modalities.

Learning Objectives:

1. Attendees will be able to explain the mechanisms of AVE, CES and tDCS.
2. Attendees will be able to summarize three of the primary studies relating to AVE, CES and tDCS.
3. Attendees will be able to differentiate when to apply AVE, CES or tDCS to three different diagnostic categories.
4. Attendees will be able to explain three typical experiences patients have when AVE, CES, or tDCS is applied.

11:45 AM -12:45PM   Lunch *lunch included

12:45 PM-2:15 PM   *Stimulation Technologies (AVE, CES and tDCS): Essential Tools for Neuropsychology continued,* Dave Siever, CET, Owner of Mind Alive Inc. **Intermediate/Advanced Level | 1.5 CE Credits**

2:15 PM-3:45 PM   *Real-time 4-D Brain Electrical Activation imaging and neurofeedback using sLORETA and live Z-Scores,* Tom Collura, Ph.D. MSMHC, Clinical Director at Brain Ecrichment Center. **Intermediate Level | 1.5 CE Credits**

This talk will describe new developments in the use of real-time surface and sLORETA brain activation imaging an neurofeedback. Using 19 channels of surface sensors, it is possible to create live surface maps of brain activity with our without using a reference database, and to convert surface data into low-resolution (5 mm) brain voxel images comprising over 6,000 full-color voxels. This provides.   Feedback can be based upon any of a number of real-time values including absolute and relative power, connectivity, and region-of-interest (ROI) activity. Z-scores can be based upon any of several documented normative databases, or on user-constructed references using the "Z-builder" capability. This latter function provides a form of "digital subtraction" brain activation imaging that does not depend on an external database. Regions of interest an include Brodmann areas, hubs and networks, and user-defined sets of sLORETA voxels to provide customized ROI's, networks, and hubs. These can be client-specific, providing an indi-

vidualized approach to QEEG-based imaging and neurofeedback. Examples will include individuals in unusually stressful situations such as high-speed driving, and experiencing physical injury. Brain activation responses to repetitive stimulation (photic, auditory, and pulsed EMF) will also be shown and interpreted.

Learning Objectives:

1. Describe the technology behind the use of live EEG recording to produce 3-D animations of brain activity.
2. Explain specifically how the different lobes of the brain serve different basic functions.
3. Detail the steps needed to produce a reference database for z-scores and how to use it for live and retrospective QEEG mapping and imaging.
4. Explain how the changes in brain activation have been shown to reflect individual responses to stressful situations.

3:45 PM-4:00 PM   Closing Speech

Speaker Biographies

Jon Bale, Ph.D. is a McGill University Graduate in Biology and is BCIA certified for neurofeedback as a technician. For nearly nine years he was the Research Manager for the Biofeedback Federation of Europe (BFE), before joining the Thought Technology family as an Application Specialist. His experiences includes instructing and working with various clinical leaders in the field of biofeedback and neurofeedback, such as Dr. Paul G. Swingle, Dr. Inna Khazan, Dr. Vietta Sue Wilson, and Dr. Barry Sterman. Jon's extensive knowledge of applications in biofeedback and neurofeedback, along with his work adapting clinical methods into easy-to-use techniques, makes him an ideal individual to demonstrate the effective use of Thought Technology software and hardware.

Erik Peper, PhD., is an internationally known expert on holistic health, stress management, and biofeedback. He is a professor at San Francisco State University. He is president of the Biofeedback Federation of Europe (BFE) and former president of the Association for Applied Psychophysiology. He has received numerous awards such as the State of California Governor's Employee Safety Award in 2004 for his contributions to improving workplace health for computer users, the 2005 Sheila Adler Award from AAPB for his efforts to support and encourage student participation, and the 2011 Recipient of the Biofeedback Foundation of Europe Educator Award. He is an author of numerous scientific articles and books: *Biofeedback Mastery, Muscle Biofeedback at the Computer, Make Health Happen Training: Yourself to Create Wellness,* and *Fighting Cancer-A Nontoxic Approach to Treatment.* He has a biofeedback practice at BiofeedbackHealth in Berkeley, California (www.biofeedbackhealth.org) and publishes a blog *The peperperspective: Ideas on illness, health and well-being* (www.peperperspective.com). He has been an invited speaker at international conference in the United States, Europe and Asia and is recognized expert on holistic health, stress management and workplace health.

Dr. Nicholas Dogris, Ph.D. is a health psychologist who practices in the Eastern Mountains of California. He has over 25 years of experience in the EEG field and has developed innovations for multiple software platforms. In 2007 he founded NeuroField, Inc. and developed method for using low intensity pEMF for the treatment of multiple psychiatric problems. Dr. Dogris currently runs a clinic treating patients in the Inyo and Mono county regions. He also is the CEO of NeuroField, Inc which continues to innovate and develop pEMF technology.

Eric K. Willmarth, Ph.D. is a three-time past president of the Michigan Society of Behavioral Medicine and Biofeedback and is a BCIA Senior Fellow. For the past 28 years he has worked clinically with the chronic pain population, the last 18 years president of Michigan Behavioral Consultants, PC with 13 offices throughout West Michigan. He currently serves as the Director of Integrative Mental Health for the College of Integrative Medicine and Health Sciences, Saybrook University. He teaches the Advanced Biofeedback Practicum at Saybrook as well as courses in Psychophysiology, Ethics, Hypnosis and Foundations of Integrative Mental Health. Eric has been a past president of the APA's Division 30 and has served for two years on the APA Council of Representatives. He teaches extensively on the topic if integrating biofeedback and hypnosis in pain management settings.

Linda Walker, MHR has been an instructor, practitioner and mentor in the area of psychophysiology for more than 15 years and has worked with diverse populations using both neurofeedback and biofeedback modalities. She is currently in private practice in Traverse City, MI. Linda has taught both neurofeedback and biofeedback courses for Western Michigan University, Biofeedback Federation of Europe and Thought Technology. Linda is completing her PhD in psychophysiology from Saybrook Univeristy. She is past president of Midwest Society for Behavioral Medicine and Biofeedback and has served on the practice standards committee for AAPB.

Robert Reiner. Ph.D. is the Executive Director and founder of Behavioral Associates (BA), has been practicing psychology since 1981. After receiving his undergraduate degree at the University of Pennsylvania, he went on to get his Ph. D. in clinical psychology at the University of Alabama and serve his clinical internship at Bellevue Hospital. He is well known for his work in treating anxiety and phobias through biofeedback and virtual reality therapy. He has been credited for this work in articles in the Wall Street Journal, New York Times, New York Daily News, USA Today, Newsweek and Time Out magazine. He has specifically had great success in treating patients for fear of flying which was documented on an episode of The National Geographic Show featuring Dr. Reiner's work with a phobic patient.

Dave Siever, CET, graduated in 1978 as an engineering technologist. He later worked in the Faculty of Dentistry at the University of Alberta designing TMJ Dysfunction related diagnostic equipment and research facilities. He organized research projects, taught basic physiology and the advanced TMJ diagnostics course. Dave had noted anxiety issues in many patients suffering with TMJ dysfunction, prompting him to study biofeedback, which he applied to the patients and then later, Dave design biofeedback devices. In 1984, Dave designed his first audio-visual en-trainment (AVE) device – the "Digital Audio-visual Integration Device," or DAVID1. Since this time, through his company, Mind Alive Inc., Dave has been researching and refining AVE tech-nology since, specifically for use in relaxation, boosting academic performance and treating anx-iety, depression, PMS, ADD, FMS, SAD, pain, cognitive decline and insomnia, which he presents primarily at various conferences and for special interest

Tom Collura, Ph.D. MSMHC, has over 40 years of experience in the fields of EEG, computer systems engineering, clinical neurophysiology, biofeedback, and mental health counseling. His professional positions have included staff and teaching positions with Bell Laboratories, the Cleveland Clinic Department of Neurology, Siemens Medical Imaging, and BrainMaster Technologies, which he founded in 1995, as well as the Brain Enrichment Center, Bedford, Ohio, where he is Clinical Director. His past organizational positions include President of the International Society for Neurofeedback and Research (ISNR), and President of the EEG Division of the Association for Applied Psychophysiology and Biofeedback (AAPB). He is currently President-Elect of the AAPB, and leads the taskforce on innovation. He received the Hans Berger Award of Merit from the AAPB in 2007, was named a Fellow of the ISNR in 2011, and received the ISNR Career Achievement Award in 2014. In 2010, he chaired the IEEE working group on Recommended Practice Standards for Neurofeedback, and is currently on the advisory board of the QEEG Certification Board. He has published peer-reviewed journal articles and book chapters. His textbook, "Technical Foundations of Neurofeedback," is published by Routledge and is required for the BCIA certification in Neurofeedback, and by the QEEG Certification Board. His clinical work is with adults and children with emotional and cognitive challenges, as well as federally mandated offenders.