**Annie Crain: Tips and Tricks to Optimal Thresholding: Amplitude, Duration, & Training Metrics**

This session is designed to give an overview of how to use the Neurofield 64 thresholding features, with particular focus on the thresholding techniques and theories designed to improve training outcome. This session will touch on the importance of the technician/clinician in the neurotherapy session, with both intention and encouragement, as well as techniques to improve attention capabilities during sessions. We will also open a dialogue on how best to explain the process of neurofeedback to the client to maximize their participation.

**Candia Smith, DMH: Neurofield in the Treatment of Trauma**

This session will acquaint the attendees with the serious impact childhood trauma has upon the health and welfare of the person as they grow up. We will discuss the role of imbalance of the Autonomic Nervous system upon those sequelae. Through case discussion and demonstration we will learn how to utilize the tools in the NeuroField Suite of tools to assist clients in reregulating to a safe environment.

**Cindy Reynolds, PhD: “Cross-Train Your Brain”: Using NeuroTechnology for Brain, Body, and Mind Fitness**

Defined as the fusion of brain, body, and mind fitness, Neurofitness training is critical to regain and maintain balance in this high-stress information technology world we live in. The Neurofield system is not only extremely effective as a stand-alone device for achieving these goals, but pEMF technology, when paired with traditional neurofeedback, HRV, HEG, EFT and mindfulness-based programs can effectively enhance the results of NeuroFitness training. A review of this method as well as several methods to track progress within multiple modalities will be part of this session.

**Brad Wiitala, BSEE: Signal Processing Challenges for DC Coupled Amplifiers**

Up until the last 10 to 15 years, EEG amplifiers were AC-coupled to remove the large DC potential associated with the EEG electrode. The input instrumentation has to be low noise, but also fairly low gain to prevent output saturation. The signal was AC-coupled and followed by a large amount of gain before being fed to the analog to digital converter. The advent of low noise, 24-bit analog to digital converters has made it possible to completely DC couple the EEG signal chain from instrumentation amplifiers to the analog and to digital converter input. To properly display the EEG signal to the user, as well as analyze the frequency characteristics of the EEG, the DC electrode potential must still be removed in the software.

**Jay Gunkelman, QEEGD: The Impact of Montage on EEG**

The effect of the electrode montage on the ability to see the clinical findings easily will be demonstrated using real EEG remontaging. The montages’ strengths and weaknesses will be discussed including the classical linked ear montage and the more modern calculated references using Laplacian mathematics with the global and local average references demonstrated. Some myths about remontaging will be demonstrated, such as “Laplacian montages remove medication effect.” As time allows, modern deartifacting with ICA will be demonstrated and discussed.
Merlyn Hurd, PhD, QEEGD: Tips and Tricks to Optimal Thresholding: Amplitude, Duration, & Training Metrics

QEEG analysis maps will be used to show the markers for autism, ADD, depression, anxiety and eye problems. Handouts will be provided to use as templates. Instructions on how to verify the initial interpretation will be provided with participants using their own cases to verify the markers.

Michael Villanueva, DMH: A Late & Unexpected Journey into Psychedelics: Right Path; Good Science

Michael's presentation is a personal story of why he studies the EEG and psychedelics and how psychedelics painfully illuminated neuroscience for him. In his searching, he adopted opensource advanced signal processing and neural information flow software from the Swartz Center for Computational Neuroscience. In illustrating his journey with 5Meo-DMT and Ayahuasca EEG data acquired with witches and shamans in Mexico and Australia, he will show how psychedelic EEG viewed through a different lens provides an untapped rich source to formulate hypotheses relevant to our humanity.

Nicholas Dogris, PhD, QEEGD: Neurofield 64 and the Future of Neurostimulation-Based Neurofeedback

This session will highlight the blended modality of neurostimulation and neurofeedback through the NeuroField 64 software system. The theoretical underpinnings of using electromagnetic stimulation, direct current stimulation, alternating current stimulation and random noise stimulation will be explored. Understanding the neurological dynamics underpinning resting state networks, glia, network hubs, and neurochemical changes when affected by neurostimulation will be woven into this presentation.

Peter DeShane, DC: The Nutritional and Neurophysiological Management of Post-Concussive Syndrome

In this session we will be covering Peter's clinic's approach to the management and treatment of post concussive syndrome. Particular emphasis will be put on the nutritional support that injured brains require, including the dreaded "blue brain" of chronic brain injury. By the end of this session you will have proven strategies you can implement on your next day in practice. We will also cover how to integrate these nutritional approaches into a broader scope including neurofield, neurofeedback and physical medicine. Adding to the difficulty is the fact that the DC electrode potential is not truly DC but a time-varying voltage.

Tiff Thompson, PhD, QEEGD: Induced Meditative States with pEMF and tACS

This presentation will cover the past 60 years of research on meditation and EEG, identifying EEG patterns in different types of meditation (such as transcendental meditation, zazen, vipassana, etc.), the neurophysiology of meditation (highlighting changes seen at major network hubs, such as the anterior cingulate cortex and the ventromedial prefrontal cortex), and methods of stimulating meditative states using neuromodulatory modalities, such as pEMF and tACS, and neurofeedback means of training meditative states using Neurofield technology. She will show videos of her clients entering trance states, offering testimony of their deepened state.
Michael Beasley: Motor & Movement Disorders: Effective Techniques for Tough Cases

This presentation will focus on observations that led to the development of unique therapy plans for cases related to adverse motor control issues. Interest in C3-C4 cross hemisphere interventions began after observing abnormalities in the raw EEG spectra of a client with severe motor issues during an active LENS therapy session. The consideration to use Low frequencies pEMF was tied to observations of raw EEG instabilities that appeared only on the affected side of a stroke patient in the 0.3 to 0.5 Hz region and early results using pEMF stimulation of C3, C4, Fz, and Pz on certain tremors. Literature consistent with these approaches will be reviewed along with the case results.

Rob Reiner, PhD: Biofeedback, Virtual Reality and other techniques used to facilitate the suppression of Anxiety

Rob will provide a history and scientific rationale for the use of cutting-edge technologies which are now considered a gold standard for anxiety management. I will also be showing how NeuroField devices like pEMF and tDCS/ACS can be implemented. Following the presentation, attendees will have a broad understanding of available technologies and how and why they have been so successful.


Data driven neurofeedback is an approach to neurofeedback that values hypothesis that can be backed up with verifiable data. The success of the data driven approach is dependent upon the quality of the data gathered and the effectiveness of its analysis and interpretation. This workshop highlights the use of the LORETA Progress report as software tool that aids facilitate this data driven approach to modern neurofeedback.

Rick Abbey, PhD & Rachael Little, MS: Combining LORETA Z-Score Neurofeedback, Neurofield, and Cognitive Skills Training to Optimize Outcomes

There have been many recent advancements in Loretta z-score neurofeedback, Neurofield, and cognitive skills training. We will discuss the benefits of combining these techniques for optimal outcomes. Participants will learn about cognitive skills training, and why it is important is an important adjunct to Neurofield and neurofeedback in improving brain functioning. Cognitive skills training includes one-on-one and computerized techniques to train the brain to improve working memory, attention, executive functioning, and academic skills, for example. Protocol selection and the timing of these therapies will also be discussed, in addition to determining whether to do them sequentially or in combination. Case studies will be reviewed to illustrate these techniques and their outcomes.