

## Workshops 14 and 16 -

### **The Clearest and Simplest Neurofeedback for Concentration: FrontalWide-Band Suppression**

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I have developed a protocol for training one-pointed focus that is much more sensitive and selective than any previous concentration protocol. My clinical experience indicates that, within the first 3-4 minutes, almost every naive trainee can understand that visually focusing on a small screen object makes it move reliably in a particular direction. Soon afterwards, usually within the first 6 minutes, they learn to reliably produce these changes, and can then do so for longer and longer time periods.

Within the first session, most trainees can also learn to focus their attention on specific parts of their body or subtle details of conversation. This is in contrast to other neurofeedback protocols, which take longer to learn because they are far less clearly related to concentration.

This new neurofeedback protocol rewards the trainee for suppressing a wide frequency band of EEG at the frontal location (Afz) that overlies the anterior cingulate formation, which has been suggested to be the central portion of the Executive Attention Network (by Posner and Raichle in Images of Mind). It was developed by adapting the studies of Dr. Barry Serman on B2 bomber pilots and other subjects doing continuous performance tests. He uncovered a cycle between a low-voltage, non-specific pattern during intense focus, followed by a theta burst soon afterwards. This may be related to the frontal midline theta rhythm found by several Japanese researchers during problem solving, but it is clearly the suppression of theta that corresponds to intense, one-pointed focus.

Workshop participants will have the opportunity to experience this new neurofeedback using the Peak Achievement Trainer, which simplifies and speeds up hookups by using the saline-based SensorPhone and SensorBand electrode systems.

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## Workshop 15 -

### **Advanced topics in QEEG**

**Jay Gunkelman, QEEGT**

Physiological generators and pathways  
Phase/Coherence definitions and displays

Fourier assumptions

Windowing: Hanning/Hamming/triangular

Bands or single Hz frequency displays

Database issues: activation/task/eyes open

Evoked potentials: VEP/P300/SEP/BAER

Epilepsy: episodic vs background

Certification/ societies positions on QEEG

Discriminates: use or misuse

Patterns seen in clinical practice

Artifacts in QEEG: EOG/EMG/Pulse/Glosokinetic/Comet effect

Leakage-Gibbs/smearing/harmonics

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