

The Biofeedback Society of Florida  
in cooperation with the Association for  
Applied Psychophysiology and Biofeedback  
presents

# **EEG/qEEG: Understanding how neurofeedback works through EEG modeling**

**with EEG expert,  
Jay Gunkelman, QEEG-D**

**Founder, Chief Science Officer,  
Brain Science International**

**January 28 - 29, 2012**

**Wyndham Lake Buena Vista Resort  
Lake Buena Vista (Orlando), Florida**

A 12 contact-hour APA approved CE program for biofeedback/neurofeedback practitioners and other health care professionals and academicians interested in learning from an expert about the current science and practice of neurofeedback (EEG biofeedback) and quantitative EEG (qEEG). The workshop will include demonstrations of EEG artifacting and other clinical methods. More information about the workshop curriculum follows inside.

In the past, similar programs have been approved for 12 continuing professional education (CE) credits for licensed psychologists, mental health counselors, clinical social workers, marriage and family therapists, and other health care providers. Note: nurses, physicians, and other professions should verify that APA approval is sufficient to receive credit for this program.

# Conference Schedule

**Saturday, January 28, 2012**

**EEG/qEEG: Understanding how neurofeedback works through EEG modeling**

- |               |   |
|---------------|---|
| 8:00 – 8:30   | Sign-in – coffee – continental breakfast  |
| 8:30 - 8:45   | <b>Welcome, introductions, and announcements</b><br>Kent Peterson, M.S., BSF President  |
| 8:45 - 10:30  | <b>Jay Gunkelman, QEEG-D</b><br>EEG generators and brain systems that make the qEEG patterns<br><br>IFCN position paper on generators of EEG rhythms (position paper will be distributed) - DC, Delta, Theta, Alpha, Beta and Gamma |
| 10:30 - 10:45 | Break   |
| 10:45 - 12:00 | <b>Jay Gunkelman, QEEG-D</b><br>Raw EEG review and quantitative processing; case reviews (processing software and EEG files will be distributed)  |
| 12:00 - 1:30  | Lunch on your own<br><br>Hotel restaurants or at one of the many alternatives in the Downtown Disney/Lake Buena Vista area  |
| 1:30 - 3:00   | <b>Jay Gunkelman, QEEG-D</b><br>Phenotype, Arousal and Vigilance models (published paper distributed)   |
| 3:00 - 3:15   | Break/refreshments  |
| 3:15 - 5:00   | <b>Jay Gunkelman, QEEG-D</b><br>Inter-rater reliability and predictive validity<br><br>Review of day's lecture  |
| 5:00 - 5:15   | Q&A - Adjourn<br><br>Organization of dinner groups - network with colleagues and friends at one of the many restaurants nearby  |
| 5:15 - 7:00   | BSF Board of Directors Meeting<br><br><b>Note:</b> All Powerpoints, other handouts, processing software, and the raw EEG files will be distributed on complimentary 4Gig memory sticks.   |

EEG/qEEG: Understanding how neurofeedback works through EEG modeling

# Conference Schedule

**Sunday, January 29, 2012**

**EEG/qEEG: Understanding how neurofeedback works through EEG modeling**

- 8:00 – 8:30 Sign-in – coffee – continental breakfast
- 8:30 - 10:15 **Welcome and announcements**
- Jay Gunkelman, QEEG-D**  
Phenotype outcomes: Addiction (published paper distributed)
- Pathophysiology of addiction: insights gained from phenotype modeling (alpha-theta protocols explained)
- 10:15 - 10:30 Break
- 10:30 - 12:00 **Jay Gunkelman, QEEG-D**  
Neurocognitive measures pre and post phenotype driven training
- Phenotype outcomes: ADHD stimulant response (published paper distributed)
- 12:00 - 1:15 Lunch on your own
- Hotel restaurants or at one of the many alternatives in the Downtown Disney/Lake Buena Vista area
- 1:15 - 3:30 **Jay Gunkelman, QEEG-D**  
Emerging applications and qEEG in NF: PDD Autism, Dementia, Z-score training
- Short break
- Controversies in the field (as time permits): Database review, amplifier characteristics, features and “N”: multiple comparisons and predictive validity, processing approach and reliability, montage and outcome, ICA deartifacting (live demonstration), LORETA, discriminants
- Q&A
- 3:30 - 3:45 Completion of CE exams and evaluations  
Distribution of certificates
- Adjourn**

*Workshop schedule is subject to change*

# Conference Faculty

**Jay Gunkelman, QEEG-D**, is highly experienced in EEG and qEEG processing. His name is synonymous with state of the science qEEG research and neurofeedback practice, and he is respected as one of the seminal thinkers in the field. He is a popular lecturer and is recognized as having made significant contributions in support of biofeedback/neurofeedback education, research, and practice.



The first-ever qEEG Technologist, Mr. Gunkelman has nearly 40 years of experience in his field. He received his B.S. in psychology from North Dakota State University and then became a certified registered electroneurodiagnostic technologist. After

becoming the first certified qEEG technologist, he was granted Diplomate status in 2002. He has served on the boards of both the AAPB and the ISNR, where he also served as President of the Board from 2001-2002. Mr. Gunkelman co-founded The Biofeedback Laboratory of the North Dakota State Hospital (1972); Q-Pro Worldwide (Russia, Switzerland, USA); and now Brain Science International ([www.brainsinternational.com](http://www.brainsinternational.com)).

Mr. Gunkelman served as a staff lecturer for 12 years at The Biofeedback Institute of San Francisco in the 1970's and 80's. He also served as a technical editor of the Journal of Neuropathy. His publications are varied and include book chapters, a book, and many papers published in peer reviewed journals and scientific conference abstracts. Mr. Gunkelman lectures at neuroscience meetings throughout the world. He is a co-founder and Chief Science Officer of Brain Science International.

## Course Description

Day one starts with a tour of the brain's EEG generators and the technical details of EEG/qEEG processing, with real EEGs processed live with handouts including free EEG software and EEG files so the participant can either watch or follow the processing steps with their own processing software. The afternoon will provide some perspective on interpretive approaches, including the phenotype model, for which the published paper will be included in the handouts.

Day two starts with prospective clinical outcomes using the phenotype model to guide neurofeedback in addiction. The differences in approach from clinical work to peak performance work will be bridged with this published study. The published paper will be in the handout. The afternoon will review the papers using phenotypes in the prediction of medication response in ADHD and depression cases. These peer reviewed published papers will be in the handout. The difference between vigilance and arousal systems will be reviewed along with the paper on the topic.

# Registration Form

## EEG/qEEG: Understanding how neurofeedback works through EEG modeling

January 28 - 29, 2012 - Lake Buena Vista (Orlando), Florida

To register online, go to [www.FloridaBiofeedback.ky](http://www.FloridaBiofeedback.ky)

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

CONTACT TELEPHONE: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

LICENSE NO: \_\_\_\_\_ BSF MEMBER: \_\_\_\_\_ AAPB MEMBER: \_\_\_\_\_

| <b>CONFERENCE TUITION - 12 CE Credits</b> | By 1/13 | After 1/13 |
|---|---------|------------|
| BSF Members:                              | \$189.  | \$219.     |
| With new BSF membership or renewal:       | \$219.  | \$249.     |
| Non-members:                              | \$229.  | \$259.     |
| Students (degree-seeking, ID required):   | \$ 99.  | \$115.     |

\* Tuition includes all Powerpoints, processing software, raw EEG files on 4Gig flash drive

**Credit Card Number (VISA or MC):** \_\_\_\_\_

**Expiration Date:** \_\_\_\_\_ **Amount authorized: \$** \_\_\_\_\_

**Cardholder signature:** \_\_\_\_\_

(I authorize BSF to charge the amount specified above to my credit card account)

**Credit card billing address:** \_\_\_\_\_  
(if different from above)

**CVV2 number** (3 digit security number on back of card): \_\_\_\_\_

**Or Mail check payable to:** The Biofeedback Society of Florida, Inc.,  
1230 S. Federal Hwy, Suite 101 , Boynton Beach, FL 33435

### CONFERENCE LOCATION AND LODGING

The workshop will be held at the **Wyndham Lake Buena Vista Resort** (formerly the Regal Sun), 1850 Hotel Plaza Blvd., Lake Buena Vista, Florida, 32830. The hotel is offering BSF conference attendees discounted room rates of \$70 and \$89./night plus tax and other fees for reservations made by December 28, 2011 (refer to Group: Biofeedback Society, **Group Code: 01276780BI**). For reservations, call toll-free 800-624-4109 or 407-827-6541. More information about the hotel can be found at [www.wyndhamlakebuenavista.com](http://www.wyndhamlakebuenavista.com). The Resort is located directly across the street from **Downtown Disney®**, steps from unique shops and lively restaurants, and is just a free shuttle ride from the excitement of **Walt Disney World®**.

**Directions to hotel:** **From the east**, Take I-4 West towards Tampa. **From the west**, take I-4 East towards Orlando. Go to exit 68, Lake Buena Vista. At bottom of the ramp, turn left at the stop light. Proceed to the next stop light and turn left onto Hotel Plaza Blvd. The Wyndham Lake Buena Vista Resort is the last hotel on the right before the Downtown Disney® Resort area. **From the airport**, exit onto SR 436. Get onto 528 (the BeeLine Expressway) heading toward Orlando (West). Go to the end of the BeeLine Expressway and get on I-4 towards Tampa. Go to exit 68 as above.

### CONTINUING EDUCATION CREDIT

This workshop is co-sponsored by AAPB and BSF. AAPB is an approved continuing education provider by the American Psychological Association. The approved provider maintains responsibility for this program. In the past, similar programs have been approved for 12 continuing professional education credits for licensed psychologists, mental health counselors, clinical social workers, marriage and family therapists, and other health care providers. For additional information about the conference, call (561) 742-7122, email at [info@FloridaBiofeedback.ky](mailto:info@FloridaBiofeedback.ky), or see [www.FloridaBiofeedback.ky](http://www.FloridaBiofeedback.ky).

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c/o 1230 S. Federal Hwy., Suite 101  
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