

# Understanding Autism Spectrum Disorder: A brain-based perspective

Connectivity, network analyses,  
and QEEG methods for assessment

Coherence training and other  
neurofeedback and neuromodulation  
approaches to treatment

Presented by  
**Robert Coben, Ph.D.**

Clinical Neuropsychologist  
Director, Integrated Neuroscience Services

A full-day, 8 credit APA approved  
CE workshop sponsored by the  
**Biofeedback Society of Florida**  
and held in conjunction with the  
**Association for Applied  
Psychophysiology & Biofeedback**  
49th Annual Scientific Meeting

**April 12, 2018**

Caribe Royale Hotel & Conference Center  
Orlando, Florida

This workshop is intended for psychologists and other mental health professionals, biofeedback/neurofeedback practitioners, and clinicians and researchers in the health related professions interested in a brain-based approach to the assessment and treatment of Autism Spectrum Disorder. This program will offer introductory and intermediate level content.

# Program Schedule

Thursday, April 12, 2018

Understanding Autism Spectrum Disorder:  
A brain-based perspective

7:00 - 8:00 am	Continental breakfast - breakout area Sign-in and distribution of workshop materials
8:00 - 8:15	Welcome, introductions, and announcements Aubrey Ewing, PhD - BSF Managing Director
8:15 - 9:00	<b>Robert Coben, PhD</b> Understanding of Autism Spectrum Disorder including characteristics and epidemiology
9:00 - 9:45	The Neuroscience of ASD: The search for the critical brain region
9:45 - 10:00	Break
10:00 - 11:00	<b>Robert Coben, PhD</b> The Neuroscience of ASD: Important brain networks
11:00 - 12:00	QEEG research findings
12:00 - 1:00	Lunch - on your own at hotel restaurants or other alternatives at nearby properties
1:00 - 2:00	<b>Robert Coben, PhD</b> Case presentations: ASD QEEG and connectivity findings
2:00 - 3:00	Neurofeedback research findings of efficacy in ASD treatment
3:00 - 3:15	Break
3:15 - 4:00	<b>Robert Coben, PhD</b> Multivariate coherence training for ASD
4:00 - 5:00	Case demonstrations
5:00 - 5:30	Q&A, review of exam questions Distribution of certificates Adjourn
5:30 - 7:00	BSF Board of Directors meeting

**ADA accommodations** will be made in accordance with the law. If you require ADA accommodations, please indicate what your needs are at the time of registration. The availability of appropriate accommodations cannot be assured without prior notification.

# Course Description

This workshop will focus on an understanding of Autism Spectrum Disorder (ASD) from a brain-based perspective. Participants will learn about ASD characteristics, epidemiology, and brain networks responsible for its many manifestations. We will discuss forms of assessment including QEEG, with particular emphasis on connectivity and network analyses. This will include a focus on research but also case examples showing the application of advanced connectivity analyses. Available treatment options will be reviewed including an exploration of neuromodulation and neurofeedback approaches. The workshop will highlight the utility of coherence training and its applications as an advanced neurofeedback method for ASD.

## Learning Objectives

This workshop is intended to introduce practitioners to clinically relevant information and methods regarding the assessment and treatment of ASD from a brain-based perspective. At the conclusion of this course, participants will be able to:

1. Define and understand the prevalence and forms of Autism Spectrum Disorder (ASD)
2. Identify brain regions critical to the understanding of ASD
3. Describe brain networks involved in ASD symptoms and patterns
4. Explain complex techniques involved in the assessment of coherence and connectivity
5. Discuss neurofeedback approaches for ASD

## Supplemental Reading

To enhance the learning experience of this workshop, Dr. Coben has provided the articles listed below as supplemental reading. In order to receive full **CE credit** attendees are asked to complete this reading in advance. Visit [www.floridabiofeedback.org](http://www.floridabiofeedback.org) to download these articles:

Coben, R. (2013). "Neurofeedback for autistic disorders: emerging empirical evidence," in *Imaging the Brain in Autism*, eds M. F. Casanova, A. S. El-Baz, and J. S. Suri (New York, NY: Springer), 107–134. doi: 10.1007/978-1-4614-6843-1\_6

Chabot, R.J., Coben, R., Hirshberg, L. and Cantor, D.S. QEEG and VARETA based Neurophysiological Indices of Brain Dysfunction in Attention Deficit and Autistic Spectrum Disorder. *Austin J Autism & Related Disabilities*. 2015;1(2): 1007

Coben, Robert; Mohammad-Rezazadeh, Iman; Cannon, Rex. Using quantitative and analytic EEG methods in the understanding of connectivity in autism spectrum disorders: a theory of mixed over- and under-connectivity. *Frontiers in Human Neuroscience*. 2014;8: 45

## Workshop Faculty



**Robert Coben, Ph.D.**, received his doctoral degree in 1991 and has been a licensed psychologist in the state of New York since 1994 and Arkansas since 2015. He is the Director of Integrated Neuroscience Services and practicing Neuropsychologist at Integrated Neuropsychological Services. His post-doctoral training in clinical and rehabilitation neuropsychology was done at the UCLA Medical Center and Cedars-Sinai Medical Center in California. He is the former director of inpatient and outpatient brain rehabilitation at Staten Island University Hospital. He is an affiliate of Winthrop University Hospital and an affiliated researcher of NYU Medical Center.

Dr. Coben is a member in good standing of the American Psychological Association, International Neuropsychological Society, and International Society for Neurofeedback and Research. He is an associate editor for *Frontiers in Child Health and Human Development*, *Frontiers in Public Health* and *Frontiers in Pediatrics*. He is also an editorial reviewer for the *Journal of Autism and Developmental Disorders*, *Frontiers in Child Health and Human Development*, *Clinical Neurophysiology*, *Neuroimage*, and the *Journal of Psychophysiology*. He has also edited a book entitled *Neurofeedback and Neuromodulation Techniques and Applications*. His research interests include the study of neuropsychology and neurophysiology in the understanding of childhood neurodevelopmental disorders, especially autism, and treatment applications for the same. Dr Coben is a past President of the International Society for Neurofeedback and Research and current Chair of the International Board of Quantitative Electrophysiology.

## Registration and AAPB Annual Scientific Meeting Information

The Biofeedback Society of Florida (BSF) is a chapter of the national Association for Applied Psychophysiology and Biofeedback (AAPB). BSF will co-host this workshop with AAPB at its 49th Annual Scientific Meeting, to be held in Orlando at the Caribe Royal Hotel and Conference Center. BSF encourages those who register for its workshop to take advantage of the opportunity to also attend the AAPB Meeting, but you are not obligated to do so. You may register online for just the BSF workshop with the option to add the AAPB meeting if you desire.

For those who are interested, AAPB will extend its member registration discount to all who are registered for the BSF workshop. Notify AAPB at **(800) 477-8892** if you are interested in their meeting discount. BSF workshop attendees are also eligible for the AAPB hotel discount (\$159/night). Reservations should be made directly with the hotel at [www.cariberoyale.com](http://www.cariberoyale.com).

# Registration Form

## Understanding Autism Spectrum Disorder: A brain-based perspective

April 12, 2018 - The Caribe Royale Hotel, Orlando, Florida

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

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

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

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

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

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

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

### CONFERENCE TUITION - 8 CE Credits

BSF Members:	\$250.
BSF Members with membership renewal	\$280.
Non-members:	\$280.
Student BSF members:	\$120.
Students - non-members (degree-seeking, ID required):	\$140.

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

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

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

(I authorize AAPB/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., Boynton Beach, FL 33435 • (561) 742-7122

### WORKSHOP LOCATION AND LODGING

The workshop will be held at **The Caribe Royale Hotel & Conference Center, 8101 World Center Drive, Orlando FL 32821**. The Caribe Royale is offering AAPB and BSF meeting attendees discounted room rates of \$159./night plus tax and other fees for reservations made by March 16, 2018 (refer to Group: **AAPB**). For reservations, call 1-888-258-7501 or click the "online" link under "Hotel Information" at [www.aapb.org](http://www.aapb.org). The hotel is located east of I-4 on World Center Drive. Take exit #68 off I-4 east and travel east on S.R. 535 (Apopka/Vineland Road). Go to the 3rd light and turn left onto World Center Drive. Buena Vista Suites is the first hotel on the left. The Caribe Royale is the second hotel on the left. More information and additional directions to the hotel can be found at [www.cariberoyale.com](http://www.cariberoyale.com).

### CONTINUING EDUCATION CREDIT

This program, when attended in its entirety, is available for 8 continuing education credits. The program is co-sponsored by the Association for Applied Psychophysiology and Biofeedback (AAPB), which is approved by the American Psychological Association to sponsor continuing education for psychologists. AAPB maintains responsibility for this program and its content. Note: All licensed health care professionals should verify that their respective licensing boards accept credits from APA approved continuing education programs toward fulfillment of their licensing requirements.

**Accessibility and non-discrimination policy:** As a State Chapter of AAPB, BSF is committed to accessibility and non-discrimination in its continuing education activities and to conducting them in conformity with the American Psychological Association's Ethical Principles for Psychologists. Participants are asked to be sensitive to privacy and confidentiality needs throughout the program and are encouraged to express any feelings of discomfort related to program content during discussion periods. BSF will attempt to accommodate participants' special needs and asks that such needs, questions, or concerns be addressed to the onsite program coordinator.

**Commercial and financial interest declaration:** The presenter has declared no commercial or financial interests related to the content of this program.

The Biofeedback Society of Florida, Inc.  
1230 S. Federal Hwy.  
Boynton Beach, FL 33435

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Coherence  
training and