



BOSTON
NEURODYNAMICS
APPLIED NEUROSCIENCE CENTER

Introduction to Neurofeedback Online Training

36 hour BCIA Approved Training

with optional 36 hours approved CE credits

**9 Weeks on Tuesdays (March 5th, 12th, 19th, 26th,
April 2nd, 9th, 16th, 30th, May 7)**

Contact Information:

Dr. Ainat Rogel and Dr. Diana Martinez

Boston NeuroDynamics

Boston Neurodynamics

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Neurofeedback Basic Training

This document outlines a neurofeedback training course designed for clinicians seeking to acquire neurofeedback skills. The introductory level training provides the participants with the knowledge and practical skills necessary to successfully integrate neurofeedback into their clinical practice. The training is also a necessary part of preparing the participants for Board Certification in Neurofeedback.

This 36-hour neurofeedback training is accredited by Biofeedback Certification International Alliance (BCIA) and fulfills all the criteria of didactic training necessary for BCIA board certification in Neurofeedback.

The training prepares its participants to immediately begin the practice of neurofeedback on the way to board certification. Neurofeedback is a powerful clinical tool that enables clinicians to successfully work with otherwise difficult to treat patients suffering from a variety of psychophysiological disorders. Neurofeedback has been empirically demonstrated to be an efficacious treatment of ADHD, epilepsy, depression, anxiety, post-traumatic stress disorder, autism, and many others.

This training provides sufficient material so clinicians will gain:

- Knowledge the psychophysiological and electrical bases to understand the theory underlying neurofeedback
- Understanding of the conditions appropriate for neurofeedback treatment
- Familiarity with common assessments
- Understanding of different neurofeedback modalities
- Knowledge of the neurofeedback recording devices
- Practical experience to perform an effective neurofeedback session and assessments.

Learning objectives: To provide in-depth knowledge of the psychophysiology, electrical and neurofeedback training techniques required to perform neurofeedback training. This knowledge is crucial to effectively integrate and apply neurofeedback into the clinician's practice. In particular:

1. Summarize the psychophysiological and electrical background as a basis to understand neurofeedback treatment
2. List the conditions appropriate for neurofeedback treatment.
3. Explain the theoretical knowledge of the different modalities and protocols and assess their appropriate use.
4. Demonstrate the ability to use neurofeedback equipment to successfully perform neurofeedback sessions and assessments.
5. Apply theoretical knowledge to implement both assessments and sessions.



For a complete list of learning objectives, please see Addendum 1.

BCIA-approved health care fields include: psychology, nursing, (including 2-year registered nurses with license; not LVNs or LPNs), physical therapy, occupational therapy, social work, counseling, rehabilitation, chiropractic, recreational therapy, physician's assistant (with certification or license), exercise physiology, speech pathology, and sports medicine. The following fields require a master's degree: music therapy and counseling education (M.Ed. in counseling). Appropriately credentialed doctors of medicine are also accepted. Degrees in health care fields other than those listed above must be submitted to the Certification Review Committee.

Boston NeuroDynamics and BCIA will consider requests for special review for the demonstration of equivalency for most of our requirements, including prerequisite education. However, degree review requests must be compared to a BCIA-approved clinical health care field.

The training consists:

- 36-hours of didactic teaching, through a live, interactive online format
- Live demonstrations of practical skills
- All workshop materials provided in a PDF format
- Discussion group and exam review
- Official certificate of course completion
- Help with completing BCIA application

Credit hours: This workshop provides participants with the 36 didactic hours necessary for BCIA certification. These hours correspond to the BCIA blueprint requirements for each area of knowledge.

CE Credits: up to 36 CE credit hours are available through R. Cassidy. Evaluations and Certificates are available by email and online following course completion at www.ceuregistration.com

For more information about CE credits, see Addendum 2

Neurofeedback blueprint and hours:

Unit	Topic	Hours
I	Introduction	4
II	Anatomy and Physiology	4
III	Electricity	4
IV	Research and Protocols	2
V	Psychopharmacology	2
VI	Assessments	4
VII	Protocol Development	6
VIII	Treatment Implementation	6
IX	Trends	2
X	Ethics	2
		Total: 36

Schedule and format: March 5th, 12th, 19th, 26th, April 2nd, 9th, 16th, 30th, May 7th.

Virtually over ZOOM. The schedule will be as follows:

- 10:00 - 10:15 Review/Q&A (optional)
- 10:15 - 12:00 Lecture
- 12:15 - 12:30 Break
- 12:30 - 2:30 Lecture

All times are in Eastern Daylight Time. This schedule may change slightly. For a more detailed agenda, see Addendum 3.

While this is a virtual training, we are making it as interactive as possible. The majority of the presentations will be live, with options to ask questions, have conversations, and see each other. It will also include demonstrations and an optional review each week. This 36-hour training is sufficient to get BCIA accreditation.

A hands-on intermediate practicum, called "From Protocol Development to Conducting a Neurofeedback Session: Theory and Hands-on Practicum", will be offered to supplement this training. The training is an intermediate neurofeedback course that will focus on the intricacies of performing neurofeedback sessions and theoretical knowledge of protocol development. It will be held in-person on 20th-22th, 2024 in Boston, MA (COVID permitting).

Location: Virtual over ZOOM. The link will be provided prior to the start date. All presentations will be emailed in a PDF file format.

Language: The sessions will be taught live in English, with real-time translation into Spanish.



All presentation PDFs will be provided in English, Spanish and Italian.

Tuition and fees: Tuition for the training in March-May training is \$1390, with a \$150 discount for the early bird rate.. Separate costs are available for Europe and Latin America. An additional discount to students and groups will be given. In-house training may be arranged to train staff within an organization, with tuition negotiated separately, based on the number of attendees (minimum number applies).

Cancellation policy: All payments will be fully refunded if the cancellation is made 4 weeks prior to the training, with a \$50 processing fee. Cancellations made less than 4 weeks, but more than 5 days before the training can be refunded at 50% or fully credited towards the next workshop. Cancellations made 5 days or fewer before class cannot be refunded or credited.

Disclosure Statement: There is no conflict of interest or commercial support for this program

Questions/Concerns: For questions or concerns, you can call us at (617) 855-9295 or email us at info@bostonneurodynamics.com

Faculty: The training is designed and will be taught by Ainat Rogel, PhD, MSW and Diana Martinez, MD, PhD in collaboration with Leon Morales-Quezada, MD, PhD and Mirret M. El-Hagrassy, MD

Ainat Rogel, PhD, MSW, BCN, LICSW

Ainat is the co-founder and co-director of Boston Neurodynamics where she practices neurofeedback, performs and analyzes brain mapping (qEEG). She trains and supervises neurofeedback practitioners and students and gives international presentations. She specialized in developmental trauma and PTSD. Ainat is a past-president and serves as an advisory board member of ISNR (International Society of Neuroregulation and Research). She believes in incorporating neurofeedback as part of therapy, and focuses on developmental trauma. She also believes in fundamental and large-scale research studies.

Ainat received her Ph.D. in Computer-Science and Neurobiology from The Hebrew University in Jerusalem, Israel, and her MSW from Simmons College in 2014 and LICSW in 2017. She has worked in brain research at various places such as MIT, the Marinos Center for Biomedical Imaging and Hebrew University in Jerusalem, Israel. Since 2010, she has focused on neurofeedback research and clinical work at the Mental Health Center in Beer-Sheva, Israel and at Ben-Gurion University. Ainat worked as a clinician, educator, and group intake coordinator at Arbour Outpatient Clinic in Jamaica Plain, Boston. She has been on the staff at the Trauma Center at JRI since 2012 as a chief scientist of neurofeedback and a senior affiliate at the neurofeedback clinic. She also trains and supervises NFB clinicians. She coordinated the child Neurofeedback Study and was part of the adult NFB study.

Ainat is fluent in Hebrew and English



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Diana Martinez, MD, PHD, LMHC, BCN

Diana is a medical doctor with a specialty in Neurorehabilitation. She received her medical degree from University of Aguascalientes, Mexico in 2002, Fellowship in Neurological Rehabilitation from IAHP, Philadelphia, USA in 2006; M.Sc in Neurological Rehabilitation in 2009, Fellowship Neurophysiology from University Hospital, Cleveland, USA in 2012 and PhD from De Montfort University from Leicester, UK in 2018. She has 15 years of experience treating severe brain injured patients in United States, Mexico, Spain, Italy, China, Brazil, Colombia and Honduras. She developed, along with other professionals, an integrative intervention to rehabilitated neurological conditions including neurofeedback and other non-invasive brain stimulation techniques. She is the CEO (since 2012) of Neocemod (Neuromodulation Center), Mexico City and Aguascalientes, Mexico, with experience treating patients with epilepsy, learning disorders, behavioral disorders, mood disorders, sleep disorders, TBI and CP. She has extensive experience in neurophysiology, EEG/qEEG/ERP interpretation. Also, she is an international consultant for Neurofeedback professionals and currently she combines clinical work, and research; which lead to study the effects of Neurofeedback in epilepsy for her PhD thesis. She continues received invitations to give lectures and workshops for ISNR, BFE, NRBS and SMNB (Mexican Neurofeedback society) and other international neurological and neurophysiology societies.

In 2017 she became the Director of Neurofeedback Clinic at Trauma Center at JRI in Boston and currently she is cofounder of Boston Neurodynamics offering high quality training and consulting for neurophysiological evaluations, neurofeedback, biofeedback and noninvasive brain stimulation interventions.

Diana is fluent in Spanish and English

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Leon Morales-Quezada, MD, PHD, MPH, BCN

Dr. Leon Morales-Quezada is a physician-scientist with experience in neurocognitive rehabilitation, noninvasive neuromodulation, applied psychophysiology, and technology development for neurological rehabilitation. Dr. Morales-Quezada received his MD degree from Universidad Autonoma de Aguascalientes and completed clinical training in emergency medicine and intensive care. He also completed a fellowship and Masters in Neuropsychology Rehabilitation at Touro College, a PhD in Cognitive Neurosciences from De Montfort University in Leicester UK, and a Master's in Public Health from Harvard School of Public Health. Dr. Morales-Quezada completed a fellowship in Integrative Medicine from the Harvard-NIH program, at the Division of General Medicine and Primary Care at Beth Israel Deaconess Medical Center (BIDMC) and Spaulding Rehabilitation Hospital (SRH), Harvard Medical



School. Dr. Morales-Quezada research interests focus on noninvasive neuromodulation, the placebo effect, and technology development applied in rehabilitation and behavioral medicine.

Mirret M. El-Hagrassy, MD

Mirret M. El-Hagrassy, MD, is a licensed neurologist, board-certified in Neurology and Epilepsy. She is a neurologist at UMass Memorial and Assistant Professor of Neurology at University of Massachusetts Medical School. Prior to that she was a post-doctoral research fellow at the Spaulding Neuromodulation Center, Harvard Medical School. Dr. El-Hagrassy was conducting research in neuromodulation with an emphasis on neurologic disorders, and her research projects involved the effects of non-invasive brain stimulation on Parkinson's disease, chronic pain as well as EEG changes in healthy volunteers. She has authored peer-reviewed articles, as well as book chapters on topics including digital EEG signal analysis, non-invasive brain stimulation, epilepsy and clinical research. Dr. El-Hagrassy has a special interest in non-invasive brain stimulation, EEG, epilepsy, and neurofeedback. She enjoys living and working in multicultural environments and multi-specialty groups. Dr. El-Hagrassy completed her medical training at the Faculty of Medicine, Cairo University (Cairo, Egypt) over a decade ago, and has moved to the US since. She completed her neurology residency at SUNY Upstate University Hospital (Syracuse, NY), clinical neurophysiology (EEG and Epilepsy track) fellowship at Cleveland Clinic (Cleveland, Ohio).

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Addendum 1
Complete list of Learning Objectives

<u>Presentation Title</u>	<u>Learning Objectives</u>
1A Introduction to Neurofeedback	<ol style="list-style-type: none">1. List the different neuroimaging techniques2. Define neurofeedback, its mechanism and uses3. Name 4 assumptions related to neurofeedback
1B History and Development of Neurofeedback	<ol style="list-style-type: none">1. Review the pioneers of neurofeedback2. Describe the early clinical applications of neurofeedback
1C Learning Theories and Clinical Applications	<ol style="list-style-type: none">1. Analyze and summarize classical conditioning and operant conditioning2. Define important terms related to learning theories (secondary reinforcement, extinction, generalization, habituation, and shaping)
1D Arousal, Attention, EEG and Neurofeedback	<ol style="list-style-type: none">1. Define and identify arousal2. Differentiate between the different types of arousal3. Describe and analyze the relationship between arousal, attention, EEG and neurofeedback
1D Homeostasis, Allostasis, Feedback and Control Systems	<ol style="list-style-type: none">1. Name two different feedback mechanism2. Identify homeostasis and allostasis3. Describe the physiological mechanisms of the stress response4. Summarize the different types of stress mechanisms
2 Neuroanatomy and Neurophysiology	<ol style="list-style-type: none">1. Summarize the different parts of a neuron and their communication2. List the three levels of the brain and their functioning3. List the four lobes and their function4. Describe how EEG is being generated5. Define neuroplasticity and its role in NFB
3 International 10-20 System of Electrode Placement	<ol style="list-style-type: none">1. Explain, use and apply the 10-20 electrode placement system2. Demonstrate the ability to place electrodes according to the 10-20 system
3A Electricity and EEG	<ol style="list-style-type: none">1. Explain the history and relevance of an EEG2. Define and use the basic terms of electricity relevant to EEG3. Describe the processing of electrical signals
3B Posterior Dominant Rhythm (PDR)	<ol style="list-style-type: none">1. Describe the role of PDR2. Identify PDR3. Differentiate between normal and abnormal PDR4. Measure PDR by using Minimaps as an assessment tool



3BC Montages	<ol style="list-style-type: none">1. Summarize the different montages2. Describe the advantages and disadvantages of the different montages3. Compare and analyze the different montages and when to use them
3BC Artifacts	<ol style="list-style-type: none">1. Identify a variety of artifacts in an EEG recording2. Explain how to prevent and minimize artifacts
3C Band Widths and Wave Forms	<ol style="list-style-type: none">1. Identify the different brain bandwidths and their functioning2. Describe the connection between brain bandwidths and arousal3. Summarize the different conditions of EEG
4 Research in Neurofeedback	<ol style="list-style-type: none">1. Identify evidence-based research in neurofeedback2. List the efficacy levels of NFB research3. Demonstrate the ability to review a NFB research4. List key research papers in neurofeedback5. Describe clinical and research challenges in NFB
5 Psychopharmacology	<ol style="list-style-type: none">1. Describe the effects of medications, drugs, alcohol and other substances on the brain and EEG2. Explain the reward mechanism3. Explain the physiological mechanism of substances
6 Client Assessment	<ol style="list-style-type: none">1. Describe the importance of assessments2. Summarize the different assessments for intake and ongoing sessions3. Detect and address adverse reactions
Practicum: Arousal Assessment	<ol style="list-style-type: none">1. Explain and demonstrate intake and assess the client's arousal level2. Create a NFB protocol based on different arousal assessments3. Demonstrate the ability to perform a NFB session based on the arousal assessment protocol
Practicum: Minimap PDR	<ol style="list-style-type: none">1. Explain the purpose of a minimap PDR2. Demonstrate the ability to perform a minimap PDR3. Interpret PDR data
7 Protocol Development	<ol style="list-style-type: none">1. List four factors to take into account when defining a protocol2. Describe how to accommodate client needs and practitioner's experience when defining a protocol3. List three factors needed to gather information4. Select an appropriate treatment modality based on a variety of factors5. Analyze a client case presentation
8 Treatment Implementation	<ol style="list-style-type: none">1. Describe and demonstrate the role of a neurotherapist2. Summarize alpha theta training3. Explain the process of remote training and assess its pros and cons
Practicum: qEEG	<ol style="list-style-type: none">1. Inspect the brain activity from a qEEG acquisition demonstration2. Describe the steps to analyze the data



	<ol style="list-style-type: none">3. Create a NFB protocol based on a qEEG
Practicum: Running a Session	<ol style="list-style-type: none">1. Explain and demonstrate the intake and assess the client's arousal level2. Demonstrate client's preparation for a NFB session3. Create a NFB protocol based on different arousal assessments4. Conduct the first NFB session
Practicum: Protocol Adjustment	<ol style="list-style-type: none">1. Evaluate the effectiveness of a previous NFB session2. Adjust the reward band or the protocol based on (a) client's feedback, (b) Symptom Checklist questionnaire, (c) modification in the arousal assessment3. Discuss the role of threshold in performing a NFB session
9 Trends in Neurofeedback	<ol style="list-style-type: none">1. List five different treatment modalities2. Design trainings which combine neurofeedback with other modalities
10 Ethical & Professional Conduct	<ol style="list-style-type: none">1. Review the different biofeedback organizations2. Summarize the NFB code of ethics3. Discuss the supervision/mentoring process

Addendum 2

CE Credits

Satisfactory Completion

Participants must have paid tuition fee, signed in, attended the entire seminar, completed an evaluation, and signed out in order to receive a certificate. Failure to sign in or out will result in forfeiture of credit for the entire course. No exceptions will be made. Partial credit is not available. Certificates available after satisfactory course completion at www.ceuregistration.com

Psychologists

NY: R. Cassidy Seminars is recognized by the New York State Education Department's State Board for Psychology as an approved provider of continuing education for licensed psychologists #PSY-0018. 36 contact hour. Live online.

Social Workers

IL-SWs: Illinois Dept of Professional Regulation, Approved Continuing Education Sponsor, #159.000785. 36 CE hour.

MN: R. Cassidy Seminars is recognized by the Minnesota Board of Social Work, CEP #2281 approval 12/27/22 - 12/27/23. 36 CE hour.

NY: R. Cassidy Seminars is recognized by the New York State Education Department's State Board for Social Work as an approved provider (#0006) of continuing education for licensed social workers. This program is approved for 36 contact hour Live online.

OH: Provider approved by the Ohio Counselor, Social Worker and Marriage and Family Therapist Board for 36 clock hour, #RCST110701

Counselors/Marriage and Family Therapists

IL-MFTs: Illinois Dept of Professional Regulation, Approved Continuing Education Sponsor, #168-000141. 36 hour.

NY-LMHCs: R. Cassidy Seminars is recognized by the New York State Education Department's State Board of Mental Health Practitioners as an approved provider of continuing education for licensed mental health counselors. #MHC-0015. 36 contact hour. Live online.

NY-LMFTs: R. Cassidy Seminars is recognized by the New York State Education Department's State Board of Mental Health Practitioners as an approved provider of continuing education for licensed marriage and family therapists. #MFT-0011. 36 contact hour. Live online.

OH: Provider approved by the Ohio Counselor, Social Worker and Marriage and Family Therapist Board for 36 clock hour, #RCST110701

TX: Approved CE Sponsor through the Texas State Board of Examiners of Marriage & Family Therapists. Provider #151 36 CE hour.

Creative Arts Therapists

NY: R. Cassidy Seminars is recognized by the New York State Education Department's State Board of Mental Health Practitioners as an approved provider of continuing education for licensed creative arts therapists, #CAT-0005. 36 contact hour. Live online.

Chemical Dependency Counselors

CA: Provider approved by CCAPP, Provider #4N-00-434-0555 for 1vCEH. CCAPP is an ICRC member which has reciprocity with most ICRC member states

TX: Provider approved by the TCBAAP Standards Committee, Provider No. 1749-06, 36 hour general. Expires 1/31/24. Complaints about provider or workshop content may be directed to



the TCBAP Standards Committee, 1005 Congress Avenue, Ste. 460, Austin, Texas 78701, Fax Number (515) 476-7597.

Educators

TX: R. Cassidy Seminars is an approved provider with the Texas Education Agency CPE# 501456. This course is 36 CE hour.

Nurses

CA: Provider approved by the CA Board of Registered Nursing, Provider #CeP15554, for 36 contact hour

Dentists

CA: R. Cassidy Seminars is a provider approved by the Dental Board of California as a registered provider of continuing education. RP# 4874 36 CE hour.

Disability Access - If you require ADA accommodations please contact our office 30 days Or more before the event. We cannot ensure accommodations without adequate prior notification.

Please Note: Licensing Boards change regulations often And while we attempt to stay abreast of their most recent changes, if you have questions Or concerns about this course meeting your specific board's approval, we recommend you contact your board directly to obtain a ruling.