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ISNR President’s Letter

Kirk Little, PsyD

My dear friends and colleagues,

I’m grateful for having the opportunity to begin serving as your ISNR president. ISNR is the one organization I belong to that really energizes and excites me. Every year I come home from the conference buzzing. There are so many new ideas to integrate and implement, borne just as much out of late-into-the-night conversations with friends as by the great content of the conference. Every year I get to meet more new friends and colleagues who now seem to get it. What we’re doing just makes sense, and it feels good to be part of an organization of such sensible, good-hearted people.

Because of all the innovations that are constantly coming our way, in technology and its implementations, so many new doors seem to be constantly opening. The number of ways we can help people expands every year. We really are on the forward edge of health care treatment, and more and more people are realizing that what we are doing is the right way to go.

For me, it’s always been an easy decision to be a part of ISNR. There are so many demands for our time and money in today’s world; we get to be picky about what we’re involved in. At the end of the day, I like to feel more energy than I started with, and I get that from helping people with neurofeedback every day. I suppose that makes me sound like a neurofeedback geek, and it’s true. I love this stuff, and it makes me feel lucky to be a part of a group full of people who feel the same way.

I hope you’ll keep up with your participation in our organization by renewing your membership and by recruiting other NFB geeks like us into the fray. If only because the more the merrier. And we’ve got a lot of fun stuff going on, with great opportunities for personal and professional growth.

Continued on page 9
Communication from the ISNR Board of Directors

Cindy A. Yablonski, MBA, Executive Director

Over the past several months the ISNR Board of Directors has been engaged in a number of activities to serve our members.

Newly seated Board members

The Board welcomed three new members voted into office by the ISNR membership during the 2015 conference in Denver: Joy Lunt as president elect, Sarah Wyckoff as secretary, and Tanju Surmeli as international member-at-large. I hope you had a chance to visit with them during the conference. Welcome to the ISNR Board of Directors.

Membership

Renew your dues for 2016 today. Don’t lose your connection with the ISNR community. Dues are on a calendar basis and 2015 dues expired on December 31, 2015.

I am pleased to report that the ISNR board has held the dues rates for 2016 steady. There has been no individual membership dues increase for the past three years. The board will explore the possibility for a slight membership dues increase for 2017.

ISNR strongly supports its students and recognizes that students are the future of our organization. We encourage new students to join our neurofeedback community worldwide and take advantage of a special student promotion in 2016. Two-for-one student dues promotion: the first student pays the regular student rate, while the second student receives a complimentary membership. The second student must be a new member of ISNR.

Key reasons for students to join ISNR:

• Meet and connect with other students and professionals who are interested in neuroscience and neuromodulation and begin to network and learn about

Continued on page 9
The mission of ISNRU from the very beginning has been to promote excellence in education and training and to provide this without any commercial bias or influence. Within this, we attempt to present information at the highest level of scientific credibility possible and extend the reach of these educational efforts all over the world. Please visit the site and check out what we have to offer.

Our initial push over the past year or more has been to provide online webinars and in-person workshops at the ISNR annual conference. Some of these have now become online courses that one can purchase and view online from anywhere. The initial course offerings include the following:

- **Depression: Neuroanatomy, Neurophysiology and Neurofeedback**
- **Research Evidence Base for Neurofeedback: BCIA Blueprint Area IV—Advanced Level—Roger deBeus, Ph.D.**
- **Current Trends in Neurofeedback—John N. Demos, MA, BCIA-N—Intermediate Level**
- **Psychopharmacological Considerations For Neurofeedback—David A. Mitnick, M.D.—Intermediate Level**
- **Panel Methodologies to Neurofeedback—Sherlin; Wyckoff; Smith; Collura; Cannon; Coben**
- **Panel—Session Experiences and Opportunities of Brain Training for Athletes—Leslie Sherlin PhD**
Altered Cerebral Connectivity and the Corpus Callosum: Adaptation or Dysfunction—Elliott Sherr MD, PhD

Moran Cerf—Online, Voluntary Control of Individual Neurons in the Human Brain—Keynote

An Introduction to Misophonia: Case Reports and Physiological Findings—Miren Edelstein

Professional Ethics and Standards for Neurofeedback: An Overview—Donald Moss, PhD—Novice Level

At this year’s ISNR conference ISNRU promoted and recorded the following workshops and presentations:

- Neurofeedback Treatment Implementation—Cohen, Weiner
- Learning Disabilities: Neuroanatomy, Neurophysiology and Neurofeedback—Coben
- Slow Cortical Potentials—Wyckoff
- Neurofeedback and QEEG 101—Cohen, Weiner
- Sports Concussion: Assessment, Management and Neurofeedback—Stevens
- Substance Abuse:—New Presenters—The Davises
- Anxiety Disorders: Neuroanatomy, Neurophysiology and Neurofeedback—Little
- Understanding and Treating Developmental Trauma—van der Kolk, Fisher
- Managing Migraines in Women Who Want to Become Pregnant or are Already Pregnant—Carmen

We are in an active phase of working on converting these to online courses that can be taken online on the website. Please visit ISNRU.com often for updates. As always, if anyone wishes to volunteer their time for the education committee or has suggestions of any kind please let us know.

Acknowledgements:
The managing editor gratefully acknowledges the tremendous contribution to this issue’s visual appeal by Cindy Yablonski and the following photographers: Joseph Barr, Dan Williams, and Tina Watkins. Without your assistance, we would have been bereft. Thank you for the images you have graciously provided.
The ISNR Education Committee, under the leadership of Robert Coben, PhD as Chair of the committee, is pleased to launch its online educational program under ISNR “U” (University) in order to support ISNR’s mission to promote excellence in clinical practice, educational applications, and research in applied neuroscience in order to better understand and enhance brain function.

ISNRU offers high-quality training with CE’s that is easily accessible online and without commercial bias for the busy neurofeedback professional practicing at any level. Our courses help members meet yearly training and educational requirements. Take advantage of special member pricing today by visiting www.isnru.com.

LEARN MORE ABOUT SPECIAL PRICING FOR ISNRU TRAINING

ISNRU’s Core Objectives

- Augment educational offerings to ISNR members to set a standard for the quality of education that is provided for ISNR members and the field of neurofeedback.
- Provide alternatives for didactic training, neuroanatomy/physiology course work and continuing education opportunities.
- Provide approved education and training in geographical areas where opportunities are less available, and support opportunities for distance/online learning.
- Support qualified educators to provide approved training.
- Provide education and training required for BCIA or other board certification.

Current Course Offerings

- Professional Ethics and Standards for Neurofeedback: An Overview, Donald Moss, PhD
- Psychopharmacological Considerations for Neurofeedback: David A. Mitnick, MD
- Current Trends in Neurofeedback: John Demos, MA, BCIA-N
- Research Evidence Base for Neurofeedback: BCIA Blueprint Area IV, Roger deBeus, PhD
- 2014 ISNR Annual Conference Lectures Highlights (and more available):
  1. Altered Cerebral Connectivity and the Corpus Callosum: Adaptation or Dysfunction, Elliott Sherr, MD, PhD.
  2. An Introduction to Misophonia: Case Reports And Physiological Findings, Miren Edelstein, UCSD psychology PhD candidate and violinist.
  3. Methodologies to Neurofeedback Panel Discussion: Leslie Sherlin, PhD, Sarah Wyckoff, PhD, Mark Smith, PhD, Tom Collura, PhD, Rex Cannon, PhD and Rob Coben, PhD.
  4. Voluntary Control of Individual Neurons in the Human Brain: Moran Cerf, PhD.
  5. Experience and Opportunities of Brain Training for Athletes: Leslie Sherlin, PhD.

Not Yet an ISNR Member
Join now by visiting www.isnr.net to find out about the benefits of membership.

Share with Others
Know someone else who’d like to participate in an upcoming ISNR U educational program?

Questions?
We look forward to your participation in ISNRU soon!
If you have any questions, please feel free to contact Cindy A. Yablonski, MBA, ISNR Executive Director at cyablonski@isnr.org.
I was so impressed by the students at this year’s conference and by the quality of their work. The research just keeps getting better and better, and is coming at us with increased frequency. I hope they will write up their studies for our new journal. I saw quite a few presentations this year that would make good reading in our open access journal, meaning a lot more people can now have access to what’s going on in our field. And we won’t be just talking amongst ourselves.

Did you see our new website? If not, please give it a look at ISNR.org. We’re hoping that with the flood of new neurofeedback and neuroregulation content coming out every day, we’ll be able to keep you abreast of the best of it through our new and improved presence on-line. And we’ll continue to be the authorities on what is credible, ethical use of our tools and knowledge.

So thank you again for allowing me to serve as your president. I invite you to participate openly in our organization by being a part of a committee, by presenting your work at our conference, by writing an article in the journal, by keeping the conversation going on the list serve and in your communities. Please feel free to contact me or any of the other board members directly so that we can keep the ball rolling. By working together we can have the greatest impact.

Website
We are very excited about the recent launch of ISNR’s totally redesigned, vastly improved website. This undertaking was spearheaded by technical wizard, Kate Novian and ISNR website committee chair, Joe Barr. The website is located at www.isnr.org. The primary aim of this redesign has been to:

- Expand the breadth of resources available to members.
- Make it more visually appealing and inviting to new visitors.
- Add more content—including videos and links—about neurofeedback in the news.
- Make the site more user-friendly, especially mobile devices.
- Improve security and stability.

We now consider our website to be a living, evolving place to get the latest information about the rapidly growing world of neurofeedback. We have the capability to update and modify the website on an ongoing basis as our needs evolve. Therefore, we invite and welcome your observations and suggestions to keep the website relevant and fresh.
Please send any and all comments to our website manager, Kate Novian, at ISNR. Website@gmail.com, and enjoy!

**ISNRU**

Take advantage of online learning on your own time by attending a class at ISNRU. The ISNR education committee, under the leadership of Robert Coben, PhD as chair, developed its online educational program named ISNRU (ISNR University) in order to support ISNR’s mission to promote excellence in clinical practice, educational applications, and research in applied neuroscience in order to better understand and enhance brain function.

ISNRU offers high-quality training with CEs that is easily accessible online and without commercial bias for the busy neurofeedback professional practicing at any level. Our courses help members meet yearly training and educational requirements. Take advantage of special member pricing today by going to the ISNRU website and review the wonderful course selections.

**NeuroRegulation Journal**

We would like to take this opportunity to invite you to submit your latest manuscript to NeuroRegulation, our peer-reviewed journal. NeuroRegulation provides an integrated, multidisciplinary perspective on clinically relevant research, treatment, and public policy for neuroregulation and neurotherapy. Review back issues of NeuroRegulation here. The editors of NeuroRegulation, Rex Cannon, PhD (editor-in-chief) and Nancy Wigton, PhD (executive editor) welcome original articles, case studies, critical reviews, commentaries, and essays. Submissions are accepted on an on-going basis. Submit your paper and/or review criteria here.

**Neurofeedback Brochures**

If you have not already placed an order, be sure you get copies of our brochure “What is Neurofeedback?” Presented in easy-to-understand language, yet with scientific accuracy, this brochure will answer the questions clients may have, but are reluctant to ask. We also have a version available now in Spanish http://isnr.mybigcommerce.com/educational-materials/.

The ISNR Board values your input, your ideas, and your suggestions. This is your organization and your involvement is essential. So please feel free to contact me to discuss any issues and I will be sure that the board addresses your concerns. My email is cyablonski@isnr.org.
ISNR 23rd Annual Conference
a Rewarding Experience
Dan Williams, PT, ISNR Conference Coordinator

The 23rd annual ISNR Conference in beautiful Denver, Colorado was a success and, quite frankly, an amazing week. Our attendance reached 507, which was one of—if not the—highest yet!

The Denver Marriott Tech Center had a fantastic layout for the conference with a warm and inviting Colorado lodge atmosphere. The weather averaged around 75 degrees with sunshine nearly every single day. The maple and oak trees changed colors in front of our eyes as the week progressed from a vibrant green to the spectacular reds and oranges that nicely gave us all the feeling that autumn was in the air.

There was high attendance for the pre-conference workshops that began on Monday and continued through Wednesday. The most popular pre-conference workshop was the 3-day QEEG Board Certification course which garnered the largest attendance.

Wednesday was also the sixth annual ISNR golf tournament at Arrowhead Golf Course. The course had absolutely stunning scenery so even if your golf game was not up to par, you could not help but have a very enjoyable day. The winners of this year’s tournament were Heidi Horner, Joe Barr and our organization’s golf pro, Gary Ames. Congratulations to their team for shooting four under par! They generously donated their winnings towards the casino night student fundraiser. The golf tournament is always a great day to spend time catching up with colleagues, having some fun and chasing a little white ball around on grass. It is my hope that more attendees decide to join us next year as the resort’s on-site course in Orlando is magnificent.

Wednesday evening was our welcome reception held in the event center amongst the sponsors and exhibitors. The reception was well attended and it was nice to see attendees taking the opportunity to mingle and socialize, enjoy some appetizers and a libation or two, and ease into the conference.

The conference program, including oral presentations, small group discussions and workshops, kicked off on Thursday morning with ISNR’s president, Dr. Rob Coben, welcoming everyone and setting the mood for what would turn out to be an outstanding conference. Thursday’s invited speaker was the Honorable Sam Blakeslee, PhD, Former California state senator and founder of the Institute for Advanced
Technology and Public Policy at Cal Poly, presenting on PTSD and the work his institute is accomplishing with war veterans. The keynote speaker on Thursday was Mark Gordon, MD, owner and medical director of Millennium-TBI, discussing the neuropsychopathology of traumatic brain injury. Thursday evening was the poster reception and cocktail party in the event center with the sponsors and exhibitors. There were seventeen posters showcased this year—a number that eclipsed previous years due to the number of high-quality submissions received during the review process. It was another well-attended event and always a pleasure to see everyone enjoying themselves.

Friday was another stimulating day of presentations, small group discussions and workshops. Our keynote speakers were Sayyed Mohsen Fatemi, PhD, associate, Department of Psychology, Harvard University, presenting on the topic of mindful creativity; in addition, Bessel van der Kolk, MD, medical director of The Trauma Center in Boston, MA, professor of psychiatry at Boston University Medical School, and co-director of the National Center for Child Traumatic Stress Complex Trauma Network, speaking on developmental trauma. Friday evening also hosted a special event with Dr. van der Kolk, with all proceeds going towards his research. The sold-out event was a unique opportunity to listen to him speak again, and to ask questions and initiate a conversation with him. The attendees also had the opportunity to pre-purchase a signed copy of Dr. van der Kolk’s book, *The Body Keeps the Score: Brain, Mind, and*
Body in the Healing of Trauma. Friday evening was also host to the much-anticipated BrainMaster reception. You can always expect to see many attendees dancing, laughing and thoroughly enjoying themselves and this year’s reception did not disappoint.

Saturday concluded the lineup of exciting and informative presentations, small group discussions and workshops. Dirk DeRidder, MD, PhD, founder and director of the BRAIN2N: Brain Research consortium for Advanced, Innovative & Interdisciplinary Neuromodulation, was our final keynote speaker, who presented for an extended amount of time on the topic of neuromodulation. Dr. DeRidder is always a crowd-pleaser.

If you missed his presentation or any of the other presentations, they may be available to view online at www.ISNRU.com or order on DVD at the ISNR store.

The awards banquet was held on Saturday evening to honor many exceptional individuals in the field for their hard work and dedication. Neurofeedback simply would not be the same without these vital contributions. Back by popular demand, the casino night student fundraiser event immediately followed the banquet dinner and awards ceremony. For a second consecutive year, casino night was a huge success in raising funds for ISNRU and for students towards education, scholarships, awards, and travel. Please plan on joining us next year in Orlando as we will most definitely be bringing this fun-filled event back for a third consecutive year!

Sunday morning in the sponsor and exhibit hall, ISNR was host to the closing breakfast and raffle prize winner announcements for the exhibitor passport program and casino night student fundraiser. Many people won exciting prizes, includ-
ing complimentary registration to next year’s ISNR conference and one of the first copies available of the new edition of *The Neurofeedback Book* by Michael Thompson, MD and Lynda Thompson, PhD. The conference program concluded with a two-hour panel discussing new and innovative approaches to neurofeedback including: Connectivity by Rob Coben, PhD; LORETA Neurofeedback by Joel Lubar, PhD; NeuroField by Richard Abbey, PhD and Rachael Little, BSc; Remote/Home Training by Leslie Sherlin, PhD; and tDCS by Dirk DeRidder, MD, PhD.

I would like to extend a very special thank you to all of the 23rd Annual ISNR Conference sponsors and exhibitors! One of the highlights at each conference is exploring the sponsor and exhibit hall and seeing the newest technology and services avail-
able in our great field. This year’s sponsors included BrainMaster Technologies, Inc.; Deymed Diagnostic; Integrated Neuroscience Services; Applied Neuroscience, Inc.; Bio-Medical; NeuroField, Inc.; Stens Corporation; and Thought Technology Ltd. This conference would not have been possible without every one of our sponsors and exhibitors and we will count on each of them for continued support for 2016 in Orlando.

Overall, the conference in Denver was truly special and the energy throughout the week was contagious. I would like to thank everybody who helped and/or participated in this year’s conference. It was my honor to watch all of the planning unfold and to see everyone enjoying and benefiting from the experience.

Abstract submissions are one of the major factors that drive the content and quality of conferences each year, so I urge you to please submit your content for presenting at next year’s conference. Look for the Call for Abstracts to open early spring in 2016!

The 24th Annual ISNR Conference will be held September 19-25, 2016 at the Hyatt Regency Grand Cypress in sunny Orlando, Florida. This resort has an ideal layout for a conference of our size and is located one mile from Walt Disney World resort and four miles from SeaWorld. Please save the date—it is my sincere wish to see everyone who attended this year join us next year in Orlando and, if you missed Denver, I hope you will strongly consider attending the conference in Orlando! 🌴
Karl Pribram, 1919–2015

By Deborah Stokes, PhD

Karl Pribram, MD died at age 95 on January 19, 2015. He was an eminent brain scientist, neurosurgeon, psychologist and philosopher and has been referred to as the “Magellan of the Brain” for being an early pioneer in researching and discovering the functions of the limbic system, temporal lobes and frontal lobes.

Dr. Pribram was born in Vienna Austria in 1919. He graduated medical school in 1941 and was one of the first 300 board certified neurosurgeons in the world at the time. He collaborated with Karl Lashley at the Yerkes Primate Center and went on to direct it; was on the faculty at Yale University from 1948–58; was at Stanford University for 31 years, from 1958 to 1989; and held Distinguished Professorships at Radford University, George Mason University and Georgetown University from 1989 up until his death. He was the author of 700 books and scientific publications which are available on his website www.KarlPribram.com. His most recent book, The Form Within (2013) is Karl’s account of the past 200 years of brain science, the final 75 years in which he participated. He was the recipient of more than 60 major international awards and honors. Among them were a lifetime grant from the U.S. Office of Naval Research, a Lifetime Research Career Award from the NIH and Lifetime Achievement Awards from the Society of Experimental Psychology and the Washington Academy of Sciences. He was the first laureate to receive the Dagmar and Vaclav Havel award for uniting the sciences and the humanities.

Dr. Pribram was deeply interested in the field of neurofeedback and a friend to many of us in ISNR. I met Karl one year many years ago when he showed up at a local biofeedback society meeting in the DC area. I remember how surprised some of us were that someone of Karl’s caliber would be interested in our small meeting but Karl was undeniably interested in the topic of neurofeedback and was very kind and engaging to us all. Karl liked to refer to neurofeedback as “neurofeedforward” since he believed that the brain continued to evolve and change based on the shaping effects of the feedback projected. Karl had two homes in our area and over the years my husband and I were fortunate to have had many visits with him and his longtime partner, acclaimed author Katherine Neville. Both homes held veritable libraries of his extensive body of work. The walls displayed a vast array of awards and tributes to Karl but he always pointed out to me that the one award that was the most heartwarming to him was his Lifetime Achievement Award from the ISNR in 2006. I asked him why and he
said he felt very much at home with our group and that we all spoke and understood the same language. During several of our visits we were joined by another luminary and Distinguished Georgetown Professor, the late Candace Pert, PhD, whose discovery of the opiate receptor and her work on the interconnectedness of mind and body via the emotions was very compatible with Karl’s holographic brain theory. Candace’s work has also influenced our field in her views of the mind and body being the same. She coined the term “psychoneuroimmunology” but often said that this is a limiting term but rather should be called “psychoneurogastroendocrinimmunology” to better reflect the interconnectedness of our entire bodyminds. She often stated that she did not know where the brain left off and the body began which reinforced Karl’s holographic point of view.

I enjoyed being present during conversations Karl had with Candace. One of my favorite discussions was when Candace asked Karl what the difference was in pain perception between a dreaded spanking and a welcome spanking of a masochist. Karl replied that the masochist perceives this type of pain as a mostly pleasant sensation, similar to a scratched itch, and then a conversation ensued on the complex brain mechanisms and endorphins involved. These mechanisms are described in his latest book, The Form Within in the chapters that discuss what he called the Four F’s: Fighting, Fleeing, Feeding and Sex. Another discussion between them was about the mystery of the brainwaves: how and why they are generated and what they represent. They both agreed that they probably reflect a type of energy field that changes constantly. Karl gave a presentation at one ISNR meeting demonstrating these ever changing energy fields. He shared a colorful quantitative representation of his own brainwaves, which morphed into different colors over time.

On every occasion I had to attend the ISNR conference, I would ask Karl if he’d like to travel there with me and he always enthusiastically said yes. He was a great travel companion and I remember how he enjoyed holding forth among his dinner companions with interesting stories about his contemporaries and friends such as Margaret Mead, Alexander Luria, Karl Lashley, David Bohm, Carl Rogers, BF Skinner, Francis Crick, Wilder Penfield, Sir John Eccles, Dennis Gabor, Rudolfo Llinas, Abraham Maslow, Walter Freeman and Rupert Sheldrake.
He captivated us one night as he told how he’d lost the middle finger of his right hand. Karl had helped one of his Stanford graduate students, Penny Patterson, acquire a gorilla named Koko from the San Diego zoo after she’d asked Karl if teaching sign language to apes was possible. Karl advised her to start slowly and Koko became the first ape to acquire sign language. Washoe was a chimpanzee who had later learned to sign and Karl was visiting her one day after she had given birth. Karl was feeding Washoe’s newborn who was cradled in his left arm while he held onto the sharp metal bar of the metal cage with his right hand. Washoe was playing and quickly moving around the cage and accidentally hit Karl’s finger and Karl screamed in pain as blood gushed forth. He said he was in agony but that he could not forget the regret on Washoe’s face as she signed, “I’m sorry, I’m sorry” over and over.

It seemed to me that Karl’s work evolved and expanded from exploring brain to mind, then consciousness, and then our universe and how it is perceived. To me, his most fascinating contributions involve his findings on the non-local aspects of brain function, perception, and consciousness and that our responses are determined via quantum interference patterns in the spectral domain rather than just brain hardware. He did discover the localized tasks assigned to specific brain regions yet he went on to explore that processing, encoding, storage and retrieval can be done via wave interference or the holographic aspects of analyzing frequencies. After his early brain mapping discoveries, he went on to postulate that interfering wave fronts enable the brain to localize some of our experiences beyond the physical boundaries of the body. An example of this would be his explanation of phantom limb pain—the memory of that limb is a holographic memory encoded in the interference patterns in the brain.

Pribram’s holographic brain theory challenges medical orthodoxy which ignores the brain’s complexity and continues to cling to the reductionist view that brain functions are located in specific regions inside the organ itself like cities on a map. His ideas about the holographic brain were established through his research findings in the 1970s and he then began to explore the question, “If what we see isn’t really a picture of reality but a hologram, then what is a hologram?” This gave rise to his questioning the very nature of what we think reality consists of and led him to work with David Bohm, the quantum physicist who postulated that the entire universe is a hologram and who argued that science and society’s current ways of fragmenting the world into parts is not only counterproductive, but that it may lead to our ultimate extinction. Together, Bohm and Pribram’s theories provide a dramatically different way of viewing our world: that our brains mathematically construct or convert objective reality by interpreting frequencies that are ultimately projected from other dimensions; a deeper form of existence that is beyond time and space and that the brain is a hologram enfolded in a holographic universe of which we are a part.
Karl’s research papers and materials will be donated to the Akron Archive for the History of Psychology. Also included will be the first EEG machine and the first 120 electrode net, as well as Sherrington’s operating table upon which many scientists and Nobel Laureates did primate surgery.

In closing, I will relate what Jay Gunkleman had to say about Karl:

I miss him, though the recollections are solid reminders of his impacts on our field that are largely unknown to the field, like his dinner discussions being overheard by Frank Ofner, then an engineering grad student... who invented the first solid state EEGs to deal with the DC stability... the Ofner “T-type” (transistorized) which was bought out by Beckman Instruments, and eventually to the basis of all modern EEG amp designs.

He spun off entire areas of study, like Lucid Dreaming,... Anna Wise’s work on content/state... and the more obvious introduction of quantum physics to neurophysiology with work spun off in this area also by Walter Freeman III here in Berkeley (I saw him last week speaking persuasively on consciousness).

I thought of Karl while doing the brain dissection lab last week. I wished for his smaller (and more experienced) hands... we shared the loss of fingers together, but the rest of mine are messed up and his were steady and strong to the end. He almost beat me arm-wrestling for the dinner bill

I learned much from Karl over the years... a gentle instructor and deeply wise man who I miss dearly as a friend.

Karl will be greatly missed by all.

About the Author:
Deborah Stokes is a licensed psychologist, licensed professional counselor and is board certified in neurofeedback by the BCIA. She has been practicing neurotherapy fulltime since 2000 at her clinic The Better Brain Center in Alexandria, VA. She can be reached at Brainew@gmail.com.
Isn’t it time you were Certified?

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- Neurofeedback
- Pelvic Muscle Dysfunction Biofeedback

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Mission: BCIA certifies individuals who meet education and training standards in biofeedback and progressively recertifies those who advance their knowledge through continuing education.
Every practitioner in this field had to start somewhere and it was probably the same place: the beginning. Think back and remember who reached out to you and provided the hands-on training when you felt so lost.

“Tell me and I forget. Teach me and I remember. Involve me and I learn.”
—Benjamin Franklin

Involvement—isn’t that what hands-on training really is? New clinicians tell us their biggest hurdle is finding a mentor. BCIA always recommends that certain factors should be considered to find the right match: similar professional background and client-base and even the type of equipment being used. Students can’t afford to be that picky. Someone to say “yes” becomes their only search criterion.

How can the field flourish if we don’t have a better way to train those new to the field? The same excuses are given. Let’s take these excuses one by one and see if there aren’t better answers.

Busy is a common complaint these days—for everyone. Is it that we are too busy or that we may need to take a look at what we are doing and maybe re-prioritize? What if years ago everybody you asked was too busy to teach you? Maybe you don’t have 25 hours, but what about one or two? Allowing a new clinician to shadow you for a few hours may be just what they need to get them started. Could you find just one hour to review a few case sessions?

If you have specific expertise, would you have 90 minutes to present a mentoring webinar for BCIA? In that way you could reach many new clinicians and many more could access the recording. Each mentoring webinar provides one contact hour and two case presentations!

You don’t know where to start…BCIA understands that it can feel intimidating. BCIA certification and two years of experience are the basic requirements. The first step is to consider what you may have to offer. Think about the clients you enjoy working with or the little tips you’ve picked up along the way. Once you can identify and appreciate your gifts, you may realize you can offer a few hours to teach specific things or you may realize you would be a good person to take someone through the whole training process. Visit our website and read the appropriate mentoring guide-
lines so that you are clear about is required.

BCIA encourages everyone to work with more than one mentor. That gives you the ability to provide all or only a portion of the hands-on training. See? This isn’t as big as you thought!

I can’t do this for free—and you shouldn’t! It took a long time and a lot of money for you to build your own skill-set, so you don’t need to give it away, unless you want to…

There is no standard hourly rate, and as with everything else, fees are determined by many factors, including the skill level and prestige of the mentor and even geography.

Many practitioners do distance mentoring and they use their own schedule to their advantage. They find a spot that is hard to fill and that is the timeslot they use for mentoring. This allows them to provide training at a reduced fee since they really didn’t miss a paid patient hour.

Group mentoring is another way to reach more students in a small amount of time; however, we caution you to be careful in what can be accomplished. Only case conferences can be well done in a group setting, either live or distance.

If you have been certified a long time, then the requirements may have changed. Contact hours refer to the minimum amount of time each person must spend with their mentor(s): 20 for biofeedback and 25 for neurofeedback. Three categories of work will be reviewed: personal training demonstrating self-regulation; patient/client sessions where the student runs the session; and case conference presentations. Each is a full case from intake to discharge and may be presented by the student if it has not been discussed with the mentor. More commonly, the mentor selects cases that teach something valuable.

Start small. With the next person who contacts you, why not tell the student you’ll try an initial session to see if you will be a good match. Clearly outline what you’d like to do—personal neurofeedback session or a case conference. You might be surprised how much you enjoy it.

According to Mikey, why not try it? You’ll like it!
Current treatments for epilepsy are insufficient to optimize the life of a person suffering this condition. Comorbidities in epilepsy patients are continually ignored by treating clinicians. The effectiveness of treatment should not only be based on reducing seizures; rather, an overall approach of cognitive, psychological, social and neurological functions should be considered.

Neurofeedback is an intervention that has shown effectiveness in epilepsy. In various research studies using both modalities of neurofeedback (SMR and SCP) have positive results on reduction of seizures and positive changes in cognitive evaluations.

My goal was to study more extensively the effects of neurofeedback in epilepsy. The study compared the effectiveness of SCP vs. SMR, where the frequency/severity of seizures, attention processes, QEEG measurements, and quality of life were evaluated (in progress to publish).

The results are promising in all these areas. Although [the study] didn’t show statistically significant results on frequency/severity of seizures; there was an improvement in the groups that underwent intervention when compared with the control group. Significant changes were observed at a cognitive level and measures of connectivity in the QEEG in the two neurofeedback groups. However, the most important finding in this study were significant benefits in the quality of life of patients at family, academic, labor, emotional and self-esteem level. So far there is no [other] treatment for epilepsy that offers these benefits.

Neurofeedback is an intervention that must be considered as an adjunct technique in the treatment of patients with epilepsy and improves the areas that affect their lives overall.

About the Author
Diana Martinez, MD, specializes in neurological rehabilitation, with ten years of experience treating patients who have severe brain damage in the United States, Mexico, Spain, Brazil, China, Italy, Colombia and Honduras. She has developed comprehensive therapeutic interventions including nutrition and neurofeedback to rehabilitate neurological conditions. She is the medical director of Neocemod, Neuro-modulation Center in Mexico. Dr. Martinez supervises the work of professionals in neurofeedback clinics internationally. She currently combines her clinical and research work, studying the effects of epilepsy and neurofeedback as part of her doctoral thesis. She has lectured in BFE, ISNR, and SABA.
Epilepsia y Neurofeedback: Tratando más allá de las Crisis Convulsivas

Diana Martinez, MD

Los tratamientos actuales de epilepsia son insuficientes para optimizar la vida de una persona que la padece. La cantidad tan abundante de comorbilidades que presentan pacientes con epilepsia son continuamente ignoradas por los clínicos tratantes. La efectividad de su tratamiento no debe solo basarse en la reducción de las crisis convulsivas; donde más bien, el abordaje global de las funciones cognitivas, psicológicas, sociales y neurológicas deberá de considerarse.

Neurofeedback es una intervención que ha mostrado efectividad en epilepsia. En diversos estudios de investigación las dos modalidades conocidas de Neurofeedback (SMR y Slow Cortical Potentials) han revelado reducción de crisis convulsivas y cambios positivos en evaluaciones cognitivas.

Es por eso que me he dado a la tarea de investigar más extensamente los efectos de Neurofeedback en epilepsia. Recientemente termine un
estudio para comparar la efectividad de SMR Vs. SCP, donde se evaluó la frecuencia/severidad de las crisis convulsivas, procesos de atención, mediciones de QEEG y calidad de vida (estudio en fase de preparación).

Los resultados son prometedores en todas estas áreas. A pesar de no presentar cambios estadísticamente significativos en lo concerniente a frecuencia/severidad de crisis convulsivas, fue evidente la mejoría en los grupos que fueron sometidos a intervención cuando se compararon con el grupo control. Modificaciones importantes se observaron a nivel cognitivo y en medidas de conectividad en el QEEG en los dos grupos de Neurofeedback. Sin embargo, el hallazgo más importante en este estudio fue el beneficio significativo en la calidad de vida de los pacientes; tanto en el ámbito familiar, académico, laboral, emocional y autoestima. Hasta el momento no existe ningún tratamiento para epilepsia que ofrezca estos beneficios.

Neurofeedback es una intervención que debe de ser considerada como técnica coadyuvante en el tratamiento de pacientes que padecen epilepsia y así mejorar globalmente las áreas que afectan su vida.

Sobre el Autor
Diana Martínez, médico, especialidad en Rehabilitación Neurológica. Diez años de experiencia tratando pacientes con daño cerebral severo en Estados Unidos, México, España, Brasil, China, Italia, Colombia y Honduras. Ha desarrollado intervenciones terapéuticas integrales incluyendo Nutrición y Neurofeedback para rehabilitar condiciones neurológicas. Director médico de Neocemod, Centro de Neuromodulacion en México. Supervisa el trabajo de profesionales en clínicas de Neurofeedback internacionalmente. Actualmente combina su trabajo clínico y de investigación, estudiando los efectos de Neurofeedback en epilepsia como parte de su tesis doctoral. Ha sido conferencista en BFE, ISNR y SABA.
Women in Neurofeedback
Anne Ward Stevens

Since its humble beginnings, women have always had a strong presence in the field of neurofeedback. As teachers, mentors, clinicians, ISNR leaders, and manufacturers, women have been a part of the pioneering that has shaped our field. While many leaders, such as Margaret Ayers and Sue Othmer worked tirelessly in establishing this therapeutic technique, there is no doubt that others, such as Judith Lubar, Sebern Fisher, Nancy White, Ann Ayers, Else Beher, Terri Collura and Genie Bodenheimer-Davis helped drive the field to where it is today. Since the inception of ISNR, approximately one third of the total members have been women, with more women joining the organization over time. However, of the 24 ISNR presidents, only two women have served in this leadership capacity. This is likely to have influenced the fact that of the annual awards given, only 20% have been awarded to women. It is the recent Board’s opinion that we have to do a better job at recognizing the work that our female members are doing. At the present time, many of our front-line clinicians are women. These are the counselors, nurses, psychologists and physicians who have developed neurofeedback to be a vital part of their practices and it is these women who are in the trenches daily, caring for members of our larger society that may not otherwise have opportunities to benefit from such a profound treatment option.

To help improve awareness and opportunities, the ISNR board of directors, along with the editors of NeuroConnections offered a corner in this news magazine to highlight women’s current efforts in the field of neurofeedback and brain regulation. Therefore, going forward, this particular space in NeuroConnections will be devoted to this. I am already excited for the next edition to highlight Dr. Sarah Prinsloo and her exciting work.

In addition to this, it was my pleasure to host the first discussion on the topic of women in the field of neurofeedback at our most recent ISNR conference. This dialogue initially came about because women have expressed, over the years, a desire to take part of a more grassroots effort in furthering the expansion of our field.

Therefore, to harness interested parties, we scheduled the afore-mentioned small group discussion during the October, 2015 ISNR conference. This assembly of women came together and articulated ideas along with potential plans on how to forward our collective interests.

During our small group discussion, there was much time spent on how to assist women in becoming active members and leaders in our field. One theme that was discussed
was utilizing mentors to assist novices in their own inculcations. Interestingly, while the discussion initially centered on how to increase access to information regarding equipment and how improve training opportunities, a more lengthy discussion ensued about how to assist clinicians in setting up practices so that they can collect and share data for research purposes. Several minutes were spent on brainstorming about integrating research paradigms into practice settings and utilizing other clinical settings to set up multicenter studies, if not working through ISNR itself, to establish large data bases. From this, encouraging ISNR to consider setting up an IRB was also suggested.

Other time was spent discussing women as the consumer of QEEG and NFB equipment and their experiences with this, as well as mapping out possible, unique educational opportunities.

While, as in most newly formed groups, there were more ideas than specific solutions, it was most certainly decided that this group of women had a vested interest in continuing these discussion. Dr. Sarah Prinsloo, Judy Cowan, Noel Ford and Joy Lunt are particularly interested in moving these ideas forward. We will be forming a new listserve forum for all those that are interested, so that progress with these ideas or others, whatever they may be, will not lose traction before the next conference. If you are interested in joining this forum, please contact me directly. Look for an invitation to join this list serve to come out soon. Any and all are welcome to participate.
Peak Performance and Neurofeedback
Noel C.L. Ford and Leslie H. Sherlin

Growing Popularity of Neurofeedback for Peak Performance Training

Recent years have brought great interest in methods for enhancing performance across all aspects of life. Neurofeedback is one application that has gained popularity in the pursuit of greater achievement. The process, measuring EEG in real time and applying learning theory principles to condition an individual to produce a more desired brain state (Sherlin et al., 2011), is implemented under the assumption that the new brain state will translate to measurable gains in performance. Given the association of peak performance with sport and performing arts like music and dance, the majority of research in the efficacy of neurofeedback for peak performance training has focused on these areas (for reviews see Gruzelier, 2014; Hammond, 2007; Vernon, 2005). Yet there is interest in broadening the use of peak performance neurofeedback training into other areas such as corporate and academic settings, as well as military applications (e.g., Cochran, 2011; Matte, & van Otterdijk, 2012; Oded, 2011; Riley, 2011; Ros et al., 2009; Srinivasan, 2011; Todd, 2011; Wahab, & Sinandurai, 2012).

The desire to understand that which differentiates an elite performer from a novice has led to the discovery of some consistent differences in the physiological functioning of highly skilled individuals (e.g., Baumeister et al., 2008; Deeny, 2009; Kim et al., 2008). It has been consistently reported that skilled individuals exhibit a more economical brain state just prior to and during task completion (Deeny, 2009), that is less power in the fast frequency ranges and greater power in theta and alpha frequency along the frontal midline (Sherlin & Larson Ford, in press). This difference in electrical patterns of the brain, ascertained primarily via electroencephalography (EEG), provides evidence for the aforementioned assumption that implementing neurofeedback will be beneficial for less skilled individuals (Hammond, 2007; Vernon, 2005).

Recently, neurofeedback was rated a level 3 out of 5 in efficacy of improving performance (Sherlin & Larson Ford, in press). Yet the biggest challenge to the global adoption of neurofeedback as a mainstream training application remains measurable performance outcomes. This is an even greater obstacle in domains with less defined performance metrics, such as academic or occupational settings (Sherlin & Ford, In Press; Walsh, 2014). There are numerous factors in this body of literature that detract from the standardized research designs often required by organizations before fully accepting positive findings and investing in a neurofeedback training so-
Some of these factors include the predominance of self-reported subjective data, lack of a control group, mixed experimental groups making it hard to generalize, small sample sizes, and reporting of physiological changes rather than specific performance statistics (Sherlin & Ford, In Press). Walsh (2014) described an additional critique to the generalization of individual case reports of successful neurofeedback among elite performers in that “[the] Olympic champion is an outlier and even trying to make population statements about a population of outliers is difficult” (page 2).

Despite the challenges, it stands to reason that if neurofeedback can improve many of the underlying cognitive abilities involved in skilled performance, such as concentration, attention regulation, and skill acquisition, then neurofeedback would also be effective at improving overall performance (Harung et al., 2011; Thompson, Steffert, Ros, Leach, & Gruzelier, 2008). Furthermore, there has been longstanding evidence, from as early as 1984, that particular EEG states are associated with better performance and elite performers (e.g. Blumenstein, Bar-Eli, & Tenenbaum, 2002; Deeny, Hillman, Janelle, & Hatfield, 2003; Hatfield, Landers, & Ray, 1984; Kirschbaum, 1987; Milton, Solodkin, Hlustik, & Small, 2007; Shaw, Wilson, & Nihon, 2012; Treymayne, & Barry, 2001; Zaichkowsky, & Fuchs, 1988). This evidence influenced the methodology of one of the first neurofeedback studies documenting improvement in sport performance (Landers et al., 1991). Since then, various positive findings have bolstered the notion that neurofeedback has a role in enhancing performance in a multitude of domains.

**Performance Training Protocols**

Standardized protocols for peak performance neurofeedback training are yet to be established (Sherlin, Larson, & Sherlin, 2012), but there are multiple positive findings for neurofeedback enhancing performance (Gruzelier, 2014; Shelin & Larson Ford, In Press). As referenced earlier, an early example is the seminal work conducted by Landers and colleagues (1991) among archers. The neurofeedback protocol under investigation was enhancing alpha power at T3, proposed to be the effective protocol, compared against augmenting alpha power at T4, anticipated to be the ineffective protocol. Results demonstrated most importantly that neurofeedback training, specifically increasing alpha power at T3, was correlated with better performance on a post-training archery exercise. Other studies have indicated that reinforcing a particular EEG state in the frontal lobe, tailored for the individual and based on successful putting trials, was effective in a group of golfers (Arns et al., 2008). There were also positive results for a neurofeedback protocol using a sequential montage (C3-C4) to augment sensory motor rhythm (SMR: 13-15 Hz) and inhibit beta (20-30Hz) conducted among a group of skilled marksmen (Rostami et al., 2012). Finally, among a group of top NCAA Division 1 golfers, individualized neurofeedback protocols based on quantitative electroencephalogram (QEEG) and continuous performance task...
(CPT) assessments were demonstrated to have a positive impact on performance golf metrics (greens in regulation, fairways in regulation, total putts and 3-putts); yet the authors did not disclose specific parameters of the protocols employed (Sherlin, Ford, Baker, & Troesch, 2015). Most recently, a study among recreational golfers demonstrated that neurofeedback was not effective in improving putting performance when compared to a control group, despite the fact that the neurofeedback group did effectively learn to produce the desired EEG state (Ring, Cooke, Kavussanu, McIntyre, & Masters, 2015). This was true even when task pressure was high.

Beyond the world of competitive sports, neurofeedback has been linked to positive outcomes in performing arts (Gruzelier, 2009; Gruzelier, 2014; Gruzelier, 2013) and cognitive performance (Egner, & Gruzelier, 2004; Rasey, Lubar, McIntyre, Zoffuto, & Abbott, 1995; Vernon et al., 2003; Zoeful, Huster, Herrmann, 2011). In 2005, Raymond and colleagues compared alpha/theta neurofeedback against heart rate variability biofeedback training and included a control group for improving dance performance (Raymond, Sajid, Parkinson, & Gruzelier, 2005). Both neurofeedback and biofeedback training groups showed positive improvements in dance, while the control group did not. In 2014, these methods were replicated among a larger sample, and unfortunately, dance performance showed no significant improvement (Gruzelier, Thompson, Redding, Brandt, & Steffert, 2014). In other areas, Ros et al. (2011) demonstrated that augmenting SMR while inhibiting theta (4–7 Hz) and high beta (22–30 Hz) band activity at CZ in a group of trainee surgeons was associated with improvements in surgical technique score during a simulated cataract surgery.

“Mobile technology would allow individuals to train in environments that are much closer to the actual competitive state, built in with natural distractions, uncontrolled lighting and noise, all which serve as expected challenges to the individual creating that brain state when it matters most.”

Others have combined biofeedback and neurofeedback to enhance performance through a more robust training paradigm. This is thought to be potentially more effective due to individual responses to training (Gould, & Udry, 1994). As one example, combining neurofeedback with sport psychology, nutritional evaluation and counseling has been shown to promote athletic excellence of an elite boxer (Sherlin, Gervais, Talley, & Walshe, 2011; Sherlin et al., 2012). In 2008, Silvan, Nada, and Dejan (2008) investigated the effects of combined EEG and EMG biofeedback among a sample of musicians. They employed alpha enhancement training (F3-O1 and F4-O2) and EMG reduction in the frontalis muscles concurrently with music practice. Results indicated that all music performance criteria, as rated by expert scores, significant-
ly improved for the training group but not the control group (Silvan, Nada, Dejan, 2008). Perry, Shaw, & Zaichkowsky (2011) implemented HR and HRV training in addition to neurofeedback, augmenting SMR, inhibiting theta at CZ among a group of ice hockey athletes and gymnasts. Results indicated that training helped with shooting performance and breath management in the ice hockey athletes and improved beam performance balance during competition among the gymnasts. Yet, this was a small sample with no control group. Though most of the evidence is positive, as can be seen from this brief review there are still mixed findings with regard to improving performance, and it is not yet possible to determine a proper standardized performance enhancement training protocol.

**Technology and Efficacy**

EEG is often considered one of the best brain imaging technologies for use among healthy, non-clinical populations due to high temporal resolution, relative low cost, ease of use, and non-invasive nature (Park, Fairweather, & Donaldson, 2015). However, traditional EEG systems continue to require significant expertise and time to utilize and thus are limiting in the applications beyond the clinical setting. These limits equate to less instances of integration of neurofeedback training into high performance training programs. In a recent review of the role of mobile EEG in sport performance enhancement, Park and colleagues (2015) discuss the evidence to support the use of mobile neurofeedback technology, methodological limitations of the research to date, and overview of the development and role of mobile EEG solutions. The use of mobile EEG technology addresses many of the burdens of utilizing neurofeedback with healthy and busy populations, like elite performers. In time, these devices may be able to address one of the main critiques often made of any laboratory or clinical neurofeedback program, which is the lack of measurement and training done “on the field” and thus limiting the generalization of training effects and improvements in performance when it really counts (Walsh, 2014).

Emerging technological advancements are aimed at increasing the accessibility of neurofeedback for the masses. To this end, various companies have already introduced different form factors of mobile EEG devices into the consumer market (e.g., Muse, Melon, NeuroSky, Versus, Emotiv, Quasar). However, mobile technology for EEG certainly brings with it another set of challenges, such as data processing techniques, artifact handling, and signal quality (Park et al., 2015). Thus, new EEG technology has a significant burden to demonstrate benchmark testing to address those challenges. Few studies have published data to support the quality of the EEG signal measured with their device (Badcock et al., 2013; Matthews et al., 2007; Thie, Klistorner, & Graham, 2012; Wyckoff, Sherlin, Ford, & Dalke, 2015). Importantly, not all wireless EEG systems are designed for consumers and some are aimed primarily for research or military applications (Badcock et al., 2013; Matthews et al., 2007; Thie et
Furthermore, each headset varies with regard to number and placement of sensors, which alters the type of assessment data and training protocols that can be implemented. This fact is of particular relevance to performance enhancement training, considering the data supporting specific EEG states and training protocols require central midline.

Most mobile EEG devices continue to be limited to more sedentary tasks to ensure data quality. Therefore, a compromise to these limitations/challenges may be the use of mobile technology under more stable circumstances yet still outside of the clinical or laboratory setting. It could be argued that part of the difficulty in transferring the skill of creating a particular brain state from the controlled environment of a clinician’s office to the competitive field is the lack of similarity. Mobile technology would allow individuals to train in environments that are much closer to the actual competitive state, built in with natural distractions, uncontrolled lighting and noise, all which serve as expected challenges to the individual creating that brain state when it matters most.

**Conclusion**

As the interest continues in this application of neurofeedback, greater efforts must be undertaken to identify standardized methods for training. This will promote the replication of successful implementation, which will allow for optimization of training methods and aid in meeting the often-stated challenge among clinicians of “individual differences” between different athletes and sports. In addition, the use of developing technological advances offers an even greater reach for peak performance training among broader populations, allowing for more consistent training programs.

**References**


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BrainAvatar

Integrated Live Z-Score imaging & biofeedback emerges as a new Modality.

Z-Score imaging is a new method, in which each and every one of the thousands of volume elements (“voxels”) is instantly converted into a color that reflects its level of activation. The units that are being quantified relate to the amount of electrical current estimated to be occurring in that voxel. The units are expressed as “current source density,” which is the amount of current per unit of volume. They are in units of “nanoamperes per cubic millimeter.” The voxels thus become image components, and the activity of the brain can be built up by combining the voxels on a real-time display. This representation provides a 3-dimensional representation that can be rotated, zoomed, or modified to show only specific regions of interest (ROI’s), Brodmann areas, or even Networks and hubs.

Other imaging techniques such as CT, MRI, fMRI, and PET are based on anatomic, metabolic, or related physical processes. Only the EEG is based solely on the electrical activity of the brain. EEG reflects the activity of the working cells in the cerebral cortex that are engaged in the information processing and emotional control of the brain. It is these signals that are used in EEG-based neurobiofeedback imaging. Therefore, these images truly reflect the activity of the brain, and ways that other methods cannot.

This example of extreme functional capability is an individual who is able to demonstrate the ability to control, or to tolerate, pain through mental (and spiritual) discipline. (Collura, Hall, Peper, & Booman, 2014)

The following example is from an elderly individual, who had moderate speech difficulties. Slow speech and word grasping were evident. When recorded an imaged in beta, his EEG shows a deficit of beta that is focused on Broca’s area. This area resides in front of the facial motor control regions, and manages verbal speech. This deficit correlates directly with the functional deficit in this individual.

Collaborative Approach towards EEG neurofeedback training and Quantitative EEG assessment (qEEG) with certification (BCIA, qEEG, HRV), workshops, in-services, webinar’s, mentoring, EEG screening and more. Become part of changing the face of neurofeedback and mental health by offering EEG based Alternatives for the 21st Century to your clients. Find your Freedom and more.... visit brainavatar.com and stresstherapysolutions.com.

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We had another fantastic meeting in October this past year. It was full of information, connections and incredible energy. We wish that every one of you could have been there. Every year, people who are not directly connected with our field are showing more and more interest in what we do. This year, our keynote speakers were very open in their interest in our work and it was obvious by their talks that they will be spreading the word. Dr. Bessel van der Kolk spoke about the research he is doing and the research that needs to be done. He is taking the message about neurofeedback out to a much larger community. Dr. Mark Gordon gave a fabulous address about the effects of hormones and the role they play in brain function. Sam Blakeslee, a former California state senator who founded the Institute for Advance Technology, came and shared with us ways to get the message out about the great work that is being done in the neurofeedback/neuromodulation community. How exciting to have these people get involved in what we do and then take it to other audiences and promote it!

Many of us have been spreading the good news for years, and it seems as though the word is finally getting out to the wider world. How grateful we are to have so many members coming together for the cause we feel so passionate about. Without each other, we'd be just a bunch of lonely wolves howling in the night. But together, we're starting to change the way the world views healing, and health care.

It’s only a matter of time until we reach the tipping point where neurofeedback is established among the treatments of choice for a wide swath of the population. The more we come together toward this cause, the more power we wield for the betterment of us all. Let's maintain the momentum—let's keep the forward movement going! We can do this by sticking together as one voice that is ISNR.

Please consider this as you decide to renew your membership, and if you know anyone who might share our passion you can bring into the fold. ISNR is a member-
ship society; and as such, the more members we have, the stronger we are. Further, it is a big help to the organization to receive your renewal dues before the end of December. We are a forward-looking group and the sooner we know what funds we have, the further ahead we can plan for the coming year.

Our accomplishments get more exciting every year, all thanks to our growing membership. The more members who join our ranks, the more outreach we are capable of. And when we get the attention of important people, outside of our field, our message finds its way into many other conversations and gets much more attention.

NeuroRegulation, our peer-reviewed scientific journal, and NeuroConnections, our newsletter, are now open access so you can refer to the articles and have others find them. This is really important for improving accessibility to our message, and for exposing newcomers to the solid neuroscience that backs our work. Additionally, we now also have ISNRU, a place where knowledge can be shared and professional education is supported. We feel this is just the beginning, and are very excited by our current and future prospects.

Please keep our mission alive by renewing your membership. Also, please consider someone that might like to share in our passions by becoming a new member of ISNR, and support them and encourage them to join. If they do, they will also receive these benefits:

- **Member Discounts:** One of the greatest benefits is a return on investment in the form of reduced fees to access superb education at ISNRU and attend our annual conference and conference workshops.
- **Voting Rights:** All membership categories (with the exception of student members) have equal privileges of voice and vote. Only active members can vote.
- **Inclusion in the Member Directory:** Members have access to the most prominent professionals in the field. Our members opt-in to this directory, thus providing their contact information to other members of ISNR and the public.
- **Keep up to date:** Members can opt-in to an email list serve that provides access to other members and experts for asking questions, debate of current issues in the field, keeping informed on developments related to the practice of neurofeedback, and to communicate their support for the mission and goals of ISNR.
• **Direct notifications:** Members are provided convenient direct links when new issues of our member newsletter, *NeuroConnections*, and our peer-reviewed scientific journal, *NeuroRegulation* are published.

Our mission is, “To promote excellence in clinical practice, educational applications, and research in applied neuroscience in order to better understand and enhance brain function.”

Every day, more information about neuromodulatory interventions becomes available. Become a member and help us share this information with the world. There is no doubt that with enough members, we can create the connections that allow this message to become part of everyday conversation, not just within our field but everywhere. 🧠
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