

Brain-Computer-Interface Society

Note from the president



Dear friends,

Here it is: The first newsletter of the BCI Society! After the cancellation of the physical BCI meeting, we have worked hard to develop initiatives to serve and engage our membership.

In this newsletter you will find information about upcoming virtual events, updates of the different committees, interviews with senior and junior members and...the announcement of the winner of the 2020 Early Career Award!

I'm honored to write this first editorial as President of the BCI Society, but I'm standing on the shoulders of giants that have made possible this newsletter and all the work that is reported: Jon Wolpaw and Nick Ramsey as our first two Presidents, the current and previous Boards, those of you who serve on the committees, and all of you practicing BCI every day.

We hope you will enjoy the newsletter. Don't hesitate to contact us with feedback and suggestions on its content.

We wish you and your families a happy holiday season and all the best for the new year.

José del R. Millán, President

Interview with the first president of the BCI Society

In each of the BCI Society newsletters, we aim to put a senior BCI researcher in the spotlight. For this first newsletter, we asked the very first president of the BCI Society, professor Jon Wolpaw, to answer a list of interview questions about his career path, his research and his opinion on the latest developments in the field. We would like to thank professor Wolpaw for his insightful and inspirational answers.



Could you tell us a bit about your background, education and career path until now? When and where did you join the BCI field? What is your current position and what is the composition of your research team?

I am a scientist by nature and a physician by nurture. On paper, I am a board-certified neurologist who has spent nearly 50 years exploring and modulating nervous system plasticity and its functional correlates in animals and more recently in humans. In contrast to essentially everybody else studying nervous system plasticity in the 1970s, I focused on the

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Interview with Professor Jon Wolpaw continued

spinal cord, the ostensibly least-reasonable place to study plasticity. As a result, I spent nearly 20 years working in pristine isolation. There were perhaps 10 people in the world who cared at all about what I was doing, and probably none who understood why I was doing it. It was lonely, but peaceful – and productive. Thus, it was a considerable transition when Dennis McFarland and I were drawn into BCI research in 1985 by an inquiry from IBM about how computers might access brain activity to restore communication to people with severe neuromuscular disabilities. Quite suddenly I was in the midst of a rapidly growing field with new colleagues continually arising from throughout the world. Actually, it was a lot of fun, though I did worry for a long time about getting distracted from my original, and still primary, purpose. And it introduced me to many engineers, who proved to be both congenial, and remarkably useful, colleagues. Beginning about 2000, my fundamental interest in nervous system plasticity, and newer engagement in BCI research and development began to merge. Now they are fully merged; it is apparent that BCI R&D is a distinctive aspect of the overall topic of nervous system plasticity, an aspect with unique scientific and practical significance. At present, I am Director of the National Center for Adaptive Neurotechnologies (NCAN), an NIH-funded multi-institutional center that includes about 40 scientists, engineers, clinicians, postdocs, and students. NCAN creates neurotechnologies that guide nervous system plasticity to answer basic scientific questions and create new rehabilitation therapies, defines the mechanisms of this plasticity and translates this knowledge to clinical use, and provides training and dissemination to enable other scientists, engineers, and clinicians to develop and use neurotechnologies scientifically and clinically.

What attracts you to BCI research?

As devices that provide the CNS with new non-muscular channels through which to act on the world, BCIs and related technology extend the possibilities for interacting with the CNS for both scientific and clinical purposes, that is, to understand its properties and to develop new therapies that can induce and guide CNS plasticity so as to restore functions lost to injury or disease.

What, in your opinion, has/have been your most significant contribution(s) to the BCI field?

I think our research group, now NCAN, has contributed significantly in four ways. First, we have helped to define the terminology and goals of BCI R&D based on the principle that BCIs are devices that provide the nervous system with novel, non-muscular paths for interacting with the world; this also situated BCI R&D both theoretically and clinically within the overall field of neuroscience. Second, by demonstrating the surprisingly impressive capabilities of non-invasive EEG-based BCIs, we – here I mean principally Dennis McFarland – broadened the research field and, most importantly, helped to dispel the notion that the most

detailed level of interaction (e.g., single-neuron recording) is necessarily superior and will inevitably provide the best BCI performance. Doing this helped to turn BCI R&D attention to the fundamental scientific problems that impede all BCIs of whatever kind. Third, we – here I mean principally Gerwin Schalk and Dennis – designed, developed, and made freely available to other researchers the general-purpose software platform BCI2000, which can support essentially any real-time BCI study, as well as other studies involving real-time high-speed complex interactions between a person (or animal) and technology. BCI2000 has been acquired by thousands of groups around the world; it has supported many hundreds of peer-reviewed studies. Fourth, we – here I mean principally Theresa Vaughan – have helped to establish a highly interactive and congenial world-wide community of BCI scientists, engineers, and clinicians, most notably through our development and management of the first International BCI Meetings which, as you know, were the initial rationale for the BCI Society and are now a major part of its mission. Most simply stated, Theresa is largely responsible for the fact that the widely disparate, highly opinionated, and often prickly scientists, engineers, and clinicians engaged in BCI R&D now play well together, and are thereby much more effective in their necessarily joint endeavors.

What do you enjoy most in your current position or in BCI research in general?

In general, I enjoy the opportunity to participate in increasing our understanding of how ongoing CNS plasticity enables the acquisition and maintenance of behaviors throughout life, and in developing ways to engage that plasticity so as to restore function impaired by injury or disease. On a daily basis, I enjoy the opportunities to interact with the extremely broad and enthusiastic range of academic, governmental, and industrial scientists, engineers, clinicians also engaged in various aspects of these endeavors, particularly the young people who are most open to new ideas and are shocked when they suddenly realize that I am just a kid in disguise.

What do you consider new important and positive developments in the BCI field?

The increasing focus on using BCIs to enhance recovery of function for people with stroke or other severe neuromuscular disorders is a very positive and important new development, first because it is doable even in the current primitive state of BCI research and development, and second because it could help many millions of people.

What aspect or development worries you?

Overall, I am encouraged by the progress of BCI research and development since the 1980's. The multi-disciplinary nature of the endeavor is now widely recognized; and the multiple scientific, engineering, and clinical constituencies needed to address the problem now recognize each others' existence and importance – which they definitely did not at the beginning. In short, BCI R&D is now a recognizable, reasonably coherent field of endeavor. Furthermore, the naïve idea that BCIs

Interview with Professor Jon Wolpaw continued

are mind-reading devices is gradually (though too gradually) losing its grip on researchers; it is being replaced by recognition that BCIs offer the nervous system new non-muscular outputs, and thus offer the opportunity to learn a new kind of behavior. The recognition of this reality is serving to focus attention on the most important aspects of the problem, that is, how do we provide systems that best enable and encourage the nervous system to acquire and maintain these new non-muscular skills? These are all promising developments. At the same time, I am concerned about the potential long-term impact of increasingly capable BCIs and related technologies. These are systems that bypass the normal, evolutionarily developed pathways through which the CNS interacts with the external world and the body; they establish novel, much more intimate, and fundamentally unnatural interactions. As we now understand, the CNS remains plastic throughout life; it changes continually, in large part in response to and guided by its interactions with the world. Thus, the novel interactions established by BCIs and related technologies are likely to change the CNS in ways that cannot be predicted in advance. I believe that this poses a potential challenge to scientific, clinical, societal, and even legal concepts of what constitutes a person that is comparable to the challenge posed by recent advances in manipulating the genome. On the somewhat reassuring side, the primitive state and limited capacities of current BCIs, the major scientific problems that must be overcome to improve them, and the resulting slow pace of development will ensure that this challenge develops gradually and there will be considerable time over which to figure out how to address it.

In an interview in 2011, you mentioned that you expected less-disabled users to start benefiting from BCIs, including for rehabilitation. How do you see that now, given the developments in the last decade?

I am very happy to see the rapidly growing interest and engagement in developing BCI-based therapies that can enhance recovery of function for people with strokes and other devastating neuromuscular disorders. In the present primitive state of BCI research, with key scientific questions not yet answered, applications to rehabilitation are much more realistic and potentially successful than are the applications to communication and control that draw so much attention from the press and the public, and often from scientists and engineers as well.

In 2011, you described the importance of developing systems that actually help people and to develop standards to evaluate that. Do you think that topic is addressed sufficiently in BCI research these days?

Unfortunately, no, this topic still does not receive sufficient attention or effort. BCI research and development is an inherently very multi-disciplinary endeavor, as indicated in my answer to the next question. People still tend to focus only on the part of the problem that most interests them or that they are best equipped to address. On the other hand, the



Group photo of the 5th International BCI Meeting, where the attendees voted to establish a BCI society.

increasing emphasis on developing BCI applications for neurorehabilitation is a very positive development. This endeavor is in key aspects simpler and less difficult than developing and disseminating significant BCIs for communication and control; it can also help a very large and needy population. For this application, as well as for BCI communication and control applications, performance standards are important. Ultimately, for those applications that attain the possibility of large-scale dissemination, such standards will effectively be imposed by comparison to the other existing BCI-based or conventional (e.g., muscle-based) alternatives. No matter how appealing BCIs are as innovative technologies, they must ultimately survive competition with less exciting but perhaps more practical and effective conventional devices.

What advice would you give to junior researchers entering the BCI field now?

I would advise them to become familiar with the full sequence of steps, and disciplines needed to take a specific BCI application from initial conception and design, through lab implementation, testing, and optimization, clinical translation and validation, regulatory approval, and finally to wide dissemination to the target population (probably, though not necessarily, through commercialization). They can then focus most effectively on whatever aspect of this process they are most interested in and most qualified to address, whether it be basic neuroscience, signal processing, clinical studies, or commercialization; at the same time, they will appreciate the requirements, challenges, and importance of the other areas. They will be able to establish effective ongoing interactions with those engaged in other parts of the process, and can thereby contribute to the successful development and dissemination of BCI systems that serve important purposes.

The Winner of the Early Career Research Award



And the winner is....

The BCI Society is very proud to announce that the winner of the 2020 Early Career Award is:

Sebastian Halder, School of Computer Science and Electronic Engineering, University of Essex

Congratulations, Sebastian on this achievement!

If you want to know more about the winner, see the interview below!



The Awards Committee and the Board of the BCI Society would like to take this opportunity to express their gratitude and appreciation to the jurors for their valuable contribution in selecting the winners. Thank you to: **Gopala Anumanchipalli, Deniz Erdogmus, Jing Jin, Andrea Kübler, Dawn Taylor and Xiaopeng Zhao.**

Tell us about your early career journey and your area of research.

My career journey started at the Institute of Medical Psychology in Tübingen, Germany in 2002. I saw an offer for a student assistant job on something called a brain-computer interface which sounded incredibly exciting. After an interview with Thilo Hinterberger and Michael Bensch I was hired and worked at the institute while finishing my Diploma in Bioinformatics.

After that I worked on my PhD in the groups of Niels Birbaumer and Wolfgang Rosenstiel in a project supervised by Andrea Kübler also at the Institute of Medical Psychology in Tübingen. In Niels' group every PhD student was treated as a researcher from the very first day and I think that helped me learn more about science and working with BCIs in a clinical setting than anything else and I am very grateful for the vibrant research environment that Niels fostered in his institute. I would also like to thank Andrea for always giving me the freedom and support to pursue my own research ideas, showing me the importance of always putting the patient first and, when I worked as a postdoctoral researcher in her lab in Würzburg, trusting me with the responsibility of supervising my first PhD student Ivo. Without the great group of fellow PhD students (Femke, Tamara, Adi, Ander, Caro, Daniele, Linda, Balint and Mike) at the Institute of Medical Psychology I am certain I would not have been asked to answer the questions in this list.

After completing my PhD I went on to do postdoctoral research in Andrea Kübler's group in Würzburg, Germany, Kenji Kansaku's group in Tokorozawa, Japan and Professor Johan Storm's group in Oslo. In Johan's group I worked on research related to consciousness and I learned a lot from Johan on how to communicate scientific plans and results. Currently I am a Lecturer/Assistant Professor in the BCI-NE group at the University of Essex.

Who has had the biggest influence on your current research and why?

During my years as working as a student assistant I was supervised by Jürgen Mellinger. Later Jürgen also supervised my Master Thesis together with Michael Bensch and Martin Bogdan. I consider Jürgen as the biggest influence on my research because he introduced me to some of the tools I would use for a large part of my work (EEG, BCI2000 and MATLAB) and was always a great example of how to think rationally about research and the world in general. Thank you Jürgen!

What is the best part of your work?

The best part of my work is that it gives me the opportunity to solve various challenging problems every day and to live in many different interesting places around the world.

How do you perceive this award to help you professionally / further develop your career?

Sometimes I have doubts about my research and the direction I should be going and this award will motivate me to move in new directions more confidently.

What do you think are the main challenges facing early career researchers in the BCI field?

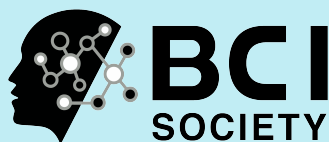
I think every researcher needs the right environment for their personal approach to research and the support and cooperation that they require to progress in their work. The challenge is finding and promoting that environment.

Looking back, what advice do you have for someone just commencing their PhD/Post-doctoral studies within the BCI field?

Find fellow researchers that complement you to collaborate with and don't get lost in trying every method you encounter on your first data set.

Tell us something about your future plans.

I will continue my work on BCIs for communication but I am also working on applying BCI technology to other fields such as research on consciousness and the neural signature of pain.



Membership renewals are due for new and current BCI Society members

It's that time again!

Membership in the BCI Society is open to all scientists, principal investigators, postdocs, and students from around the world involved in the many research and practical aspects of BCI research. We welcome all involved in BCIs, including engineers, doctors, therapists and business people.

What are some of the benefits for members?

- Discounted registration to the BCI Society Workshop Series
- Complimentary registration to the Next Generations events
- Complimentary registration to the Master Classes
- Access to member-only initiatives and activities

Our one or two-year membership cycle starts in January 2021!

For one year:

Student: \$65 USD
PostDoc: \$95 USD
Regular: \$135 USD

For two years:

Student: \$95 USD
PostDoc: \$145 USD
Regular: \$195 USD

For more information, please visit the BCI Society webpage <http://bcisociety.org>

Society News and Views

The 8th International vBCI Meeting

The 8th International BCI Meeting will go virtual! The 2021 Virtual BCI Meeting will adhere to the traditional format and will present research contributed by our members. The program will feature keynote lectures from distinguished international guest speakers, member-submitted individual oral presentations grouped by themes, innovative workshops and posters and networking events. Most presentations will be asynchronous and prerecorded to support on-demand viewing prior to the virtual meeting. The virtual meeting itself will focus on creating an environment for fruitful, constructive and open exchanges. As such we believe that this vBCI2021 meeting will, like its predecessors, contribute greatly to BCI research and development.



Have you heard about novel BCI Thursdays?

The BCI Society is pleased to announce the novel BCI Thursdays, a series of online events starting in January 2021. BCI Thursdays are a mix between Workshops and Next Generation events.

Workshops



The BCI Society Workshop Series consists of 6 workshops on a wide range of topics. Workshops have been a defining feature of the BCI Society Meetings because of their distinctive emphasis on interaction and contribution from all members.

We trust that also the online workshops will continue to shape the field of BCI research, producing consensus and collaborations, and fostering exchange of our latest scientific knowledge.

We are committed to making the Workshop Series accessible to everyone.

Registration fees are modest. Take the opportunity to invite colleagues and all the members of your research team.

Next Generations



The BCI Society Next Generations series is intended for students to provide technical background on some cutting-edge topics in BCI research, and most importantly, to answer questions that trainees might have on these topics.

Each event in this series will consist of a live 30-minute presentation followed by a live 30-minute Q&A period.

Visit: <https://bcisociety.org/bci-thursdays-online-events/>



Next Generations

Featured Member Profile Pages

Did you recently join or start a new lab? Or did you finish your PhD? The Featured Member Profile pages are there for you to share your story with the BCI Society. If you are interested in being featured in one of the upcoming newsletters, please contact us via communications@bcisociety.org.

Jun Wang, PhD, University of Texas at Austin



Could you tell us about your new lab? Where is it? Who are part of it? How is it embedded in your institute?

My lab is called Speech Disorders & Technology Lab, which is housed in the Department of Speech, Language, and Hearing Sciences, Moody College of Communication and in the Department of Neurology, Dell Medical School, at the University of Texas at Austin. Two locations of the lab (on two corners of the campus) provide flexibility and convenience of data collection from patients, who can choose a location to participate.

Besides myself, the current lab members including one postdoc (Dr. Alan Wisler), PhD in Electrical Engineering, three PhD students including Dabadatta Dash (PhD student in Electrical and Computer Engineering), Beiming Cao (PhD student in Electrical and Computer Engineering), and Kristin Teplansky (PhD student in Speech, Language, and Hearing Sciences).

My lab also has two visiting scholars including Dr. Anusha Thomas (PhD in Communication Sciences and Disorders), and Wendy Liang (MS, CCC-SLP), a licensed speech-language pathologist. A number

of undergraduate students who are in a variety of majors including neuroscience and speech-language pathology are assisting our research in the lab including Riya Ghosal, Elizabeth (Mackenzie) Finch, Evelyn Trejo, Regina Trevino, Megan Welsh, Avi Patel, Hailey Shuman, Hakim Johnson, and Zoe Lalji.

What are the main research projects in your new lab?

We are currently conducting three main projects (1) neural speech decoding for brain-computer interfaces with a focus on the use of MEG signals, (2) silent speech interface, which aims to convert tongue and lip motion into speech in real-time, and (3) speech motor control impaired by amyotrophic lateral sclerosis (ALS).



Can you please tell us about your other new responsibilities, such as teaching?

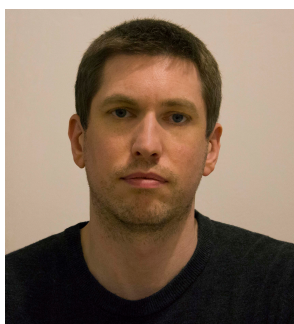
I'm currently teaching an undergraduate course Speech Science in the Department of Speech, Language, and Hearing Sciences, and will start to teach a graduate course on applied machine learning and data analytics.

Do you have any funding sources that you would like to thank?

My lab has been continuously funded externally. I would like to thank the National Institutes of Health (NIH), the University of Texas System Brain Initiative, and the American Speech-Language-Hearing Foundation for their support.

Andrej Savic, PhD, University of Belgrade

Could you tell us about your new lab? Where is it? Who are part of it? How is it embedded in your institute?



My research activities have been for the past twelve years conducted within the School of Electrical Engineering (ETF), University of Belgrade, Serbia, but I have also been involved in external collaborations in numerous public and private funded research projects. My main research interests are in the fields of neuroscience, neurotechnology and neurorehabilitation. Currently I am a principle investigator of a research project selected for funding under the Program for excellent projects of young researchers (PROMIS) of the Science Fund of Republic of Serbia. The project title is "Hybrid Brain Computer Interface for Control of Sensory-Motor Coupling in Post-Stroke Rehabilitation – HYBIS".

The HYBIS project team involves five researchers (Andrej Savić ; PhD, asst. prof. Olivera Djordjević, MD/PhD; Vera Miler Jerković, PhD; Marija Novičić, MSc; prof. Ljubica Konstantinović, MD/PhD), three Science and Research Organizations - SROs (ETF - lead SRO; Innovation Centre of ETF; Faculty of Medicine, University of Belgrade) and one clinical partner institution (Clinic for Rehabilitation "Dr Miroslav Zotovic", Belgrade) where the clinical trial of HYBIS project will be conducted.

HYBIS involves a multidisciplinary team to meet the needs of both technical and medical expertise. Regarding technical demands, HYBIS requires expertise in hardware integration, software design, signal processing, machine learning and statistics. Regarding

Featured Member Profile Pages continued

medical demands HYBIS requires expertise in neurophysiology, electrophysiology, neurorehabilitation and management of clinical research.

What are they main research projects in your new lab?

HYBIS project concept evolved as a continuation of my PhD and post-doctoral research. This concept explores novel EEG based BCI control paradigms, more specifically, BCI control signal combination to design hybrid system aiming to increase BCI usability and/or effectiveness in rehabilitation scenarios. My previous research activities involved collaborations in series of studies within the domains of cognitive psychology and electrophysiological assessment of cognitive, motor and somatosensory functions. Those resulted in development of tools and expertise applicable for improvement of classical and envisionment of novel methods of BCI control. Previously explored BCI control paradigms involved movement related EEG phenomena (event-related desynchronization/synchronization, movement-related cortical potentials), steady-state visual evoked potentials, somatosensory evoked potentials and event-related potentials. The research at ETF also involves extensive use of functional electrical stimulation (FES), specifically related to novel multisite FES technology for restoration of impaired movements after stroke. Those methods were introduced into the BCI systems developed at ETF for BCI based closed-loop control of FES for stroke rehabilitation.

Can you please tell us about your other new responsibilities, such as teaching?

I am accredited and elected for a lecturer position in courses of the Doctoral program of University of Belgrade which covers studies in multidisciplinary and interdisciplinary scientific fields. My engagement is at study module Biomedical Engineering and Technologies (course: Selected methods for physiological signal processing) and study module Intelligent Systems (course: Computational models in neuroscience).

Do you have any funding sources that you would like to thank?

I would specifically like to thank Ministry of Education, Science and Technological Development, Serbia and Science Fund of Republic of Serbia which are currently the main funding sources for my research.

Abdelkader Nasreddine Belkacem, PhD United Arab Emirates University, UAE

Could you tell us about your new lab? Where is it? Who are part of it? How is it embedded in your institute?



I have been working on brain computer interface (BCI) field in Japan for several years and it was always a dream for me to bring this technology and transfer my expertise to the MENA (North Africa and Middle East) region. Since I have joined United Arab Emirates University (UAEU), I have established my neural engineering laboratory using my UAEU startup grant (see Fig. 1). I hold the first BCI workshop at MENA region where I invited some worldwide BCI experts from Japan, Austria, and Canada to give a talk and demonstration. The laboratory is a space for undergraduate and graduate students to exchange experiences and realized their capstone projects using portable EEG equipment (Guger Technologies, Austria).

What are they main research projects in your new lab?

Prior to joining the UAEU, I have described the first reported decoding of bilateral hand movements by using single-trial magnetoencephalography signals as a new approach to enhance a user's ability to interact with a complex environment through a multidimensional brain-machine interface. I am still working on extending this idea in collaboration with Osaka Univ. to control a third arm using brain activity as a solution for improving the productivity of aging society. In my new lab, I have been working with my students on several BCI modalities (e.g., P300 speller, SSVEP, and Motor imagery) to control quadcopters and robots. I proposed some decoding AI algorithms to enhance the performance of the existing BCIs. Recently, I have been working on establishing a new significant combination between brains and a swarm of robots taking into consideration cybersecurity issues related to the BCI design.

Can you please tell us about your other new responsibilities, such as teaching?

I have started teaching a BCI course at UAEU for Selected Topics in Computer Engineering where my undergraduate students should learn more about human interfacing, signal processing, machine learning, and control algorithms. I teach students how to build a BCI from scratch using EEG Unicorn Hybrid Black. I always try to encourage my students to participate in many international competitions to challenge themselves, pushing the boundaries and getting out of their comfort zone (see Fig. 2). For instance, two groups of UAEU students have participated to BCI hackathon and won the 3rd place consecutively for controlling a drone motions and a video game using P300-based BCI in 2019 and 2020.

BCI Society Committee Updates



The Audit Committee has two members: Robert Leeb and Patrick Reynolds. The Audit Committee's main goal is to review the BCI Society's financial activities, such as those associated with conferences. We are not currently seeking new members for the committee. If you have questions, please contact Dr. Leeb at robert.leebe@mindmaze.ch.



The BCI Society Awards Committee was established in 2020 to acknowledge individual BCI Society members for their outstanding accomplishments in BCI research. Since then, the Committee consisted of: Theresa Vaughan (board member), Mariska Vansteensel (board member) and Brendan Allison (former board member; former chair of the Awards

Committee). Recently, Donatella Mattia joined the Committee as the chair. The Awards Committee has worked out formal guidelines and procedures for nomination, evaluation and selection. We addressed topics such as nomination materials, eligibility criteria, conflict of interest, the evaluation form, and juror selection.

For the first year, we decided to announce a call for nominations in the Early Career category: researchers in the early stages of their career and who received a terminal degree within the last ten years. We were pleasantly surprised to receive a total of 18 eligible applications. Six jurors have very kindly volunteered to evaluate the nominations, namely: Gopala Anumanchipalli, Deniz Erdogan, Jing Jin, Andrea Kuebler, Dawn Taylor and Xiaopeng Zhao. Each of the applications was evaluated by three different jurors, who filled out their scores for five different evaluation criteria, and provided an explanation for each score and overall comments. The jurors then further discussed the scores and nominees before advising on the winner. See page 4 for more information about the winner of the ECA2020!

The Awards Committee would like to express their wholehearted gratitude to Brendan Allison for his enthusiasm, dedication and effort in realizing the first BCI Society Award.

In the coming years, we aim to announce calls for individuals in other stages of their career as well. If you want to learn more, please contact us via awards@bcisociety.org.



The Communications Committee has three members: Brendan Allison (former board member of the BCI society), Natalie Mrachacz-Kersting (board member) and Mariska Vansteensel (board member; chair of the Communications Committee). Our goal is to

inform you, the members of the BCI Society, about news from the Society and upcoming events that could be of interest for you. We maintain the Twitter channel of the Society, as well as the Resources tab of the BCI Society webpage, where you can find a list of events, calls for submissions, a job bank and information about freely available data.

Although the webpage contains updates on many activities, we decided to launch a newsletter to update you on a regular basis (we aim for a frequency of twice per year) about what the different committees are doing, what conferences and workshops are coming up, and other news.

Most importantly, we wish to use this newsletter to show portraits or snapshots of you – the members – and your laboratories and your research. Especially now, when face to face meetings are difficult, it's important that we all keep in touch. The virtual BCI conference re-scheduled for 2021 will be a step in this direction, but for now, our newsletter is meant to partly fill the gap of the cancelled 2020 conference.

We are extremely excited to bring you this newsletter, but there is yet a great deal of work we would like to do. We can't do all of this work alone. We have collaborated with the other committees and members, but could use help from BCI Society members with:

- 1) Production and layout of newsletters;
- 2) Video production;
- 3) Web management;
- 4) Online/Virtual conference organization; and/or
- 5) Discussion Forum management.

The Communications Committee is thus open to any BCI member who would like to contribute in these (or other) areas. If you are interested in joining us, or if you have news that you would like to share via Twitter, the BCI Society website or the newsletter, please contact please contact us via: communications@bcisociety.org

BCI Society Committee Updates



The Membership Committee currently consists of Theresa Vaughan, Donatella Mattia and Gernot Müller-Putz. The aim of the committee is to create benefits for the members of the BCI Society. Especially in the year without the Society BCI Meeting, but not only, there should be incentives for members to be part of the Society. We are currently working on the BCI Society Class: Young Collaborators.

More specifically, we are developing a format, where PhD students and PostDocs can propose and jointly work on a project and are invited to present the project and its results during the following BCI Meeting. This is done in collaboration with the Student and Postdoc Committee (SPC). If you want to learn more or if you want to participate, please email: members@bcisociety.org.



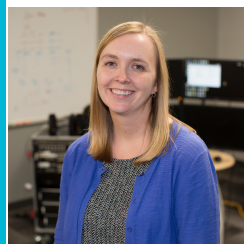
The Scientific Program Committee is responsible for the program of the (typically) biannual BCI Society Meeting. The composition of the Committee changes per edition. Current members are Marc Slutzky (member, chair of the Scientific Program Committee), Dean Krusienski (member, co-chair of the

Scientific Program Committee), José del R Millán (president of the BCI Society) and Jennifer Collinger (vice president of the BCI Society). Since the cancellation of the physical 2020 Meeting in Brussels, the Committee has worked to develop plans for a virtual meeting in 2021, and for a series of smaller online events in the period before that meeting. The pre-meeting events will include Master Classes and select Workshops. We hope that the interactive virtual format will make these events accessible for as many of you as possible. Please keep an eye on the BCI Society website for the latest information about these events! If you want to be involved or have questions, please contact Dr. Marc Slutzky (email: mslutzky@northwestern.edu).



The Student and Postdoc Committee (SPC) is the newest BCI Society Committee, established through a proposal by BCI Society member Davide Valeriani. Currently, the SPC is composed of Davide Valeriani (chair), Theresa Vaughan (board member), Luke Bashford,

James Bennett, Stephanie Cernera, Marie-Constance Corsi, Jesus Cruz-Garza, Nicole Dusang, Anja Meunier, and Sergey Stavisky. SPC members were selected through a call for participation which received an outstanding response from the community, reinforcing the timeliness of this effort. Our goals are to organize professional development activities for students and postdocs, including virtual seminars with BCI experts and trainees, ad-hoc networking opportunities, and international collaborations between trainees. The chair is Davide Valeriani, who can be contacted via: studentpostdoc@bcisociety.org.

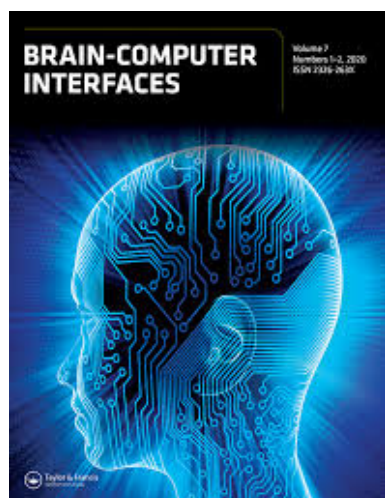


As the Young Talent Committee, we are dedicated to support early career researchers because we believe that the future of the BCI field is in your hands! The Committee currently consists of: Chuck Anderson, Guy Cheron, Marc van Hulle (co-chair of the Young Talent Committee), Steven

Laureys, Marc Slutzky, Mariska Vansteensel, and Jennifer Collinger (vice president of the BCI Society, chair of the Young Talent Committee). One major goal of this committee is to secure grant funding to cover conference-related costs for young researchers so that they may have the opportunity to share their research, learn about new developments in the field, start collaborations, and network with other junior and senior researchers. We have been fortunate to receive funding from, among others, the National Institutes of Health, the National Science Foundation, the Research Foundation Flanders and the Wellcome Trust. This funding will be used to support attendance for future virtual and in-person meetings. We plan to host periodic events throughout the winter and spring, including the Master Classes that were originally planned for the 2020 BCI Meeting. The 2021 virtual BCI Meeting will feature oral and poster presentations from trainees. We look forward to engaging with early career BCI researchers through these events.

If you want to know more, please contact the chair of the Young Talent Committee, Dr. Jennifer Collinger (email: collinger@pitt.edu).

Brain-Computer Interfaces Journal



The journal 'Brain-Computer Interfaces' published by Taylor and Francis.

The journal 'Brain-Computer Interfaces' is a peer-reviewed journal published by Taylor and Francis publishers, which is endorsed by the BCI Society. The journal published its first issue in January 2014 and prints 4 issues per year. The journal was created to provide a single

location for all kinds of BCI research. While some journals may consider a paper too clinical or too technical, 'Brain-Computer Interfaces' covers all topics related to BCI. You are cordially invited to propose special issue topics and submit high-quality original research articles on a wide range of topics from theory to applications related to, but not limited to, theoretical, methodological, empirical, and review articles.

Chang S. (CS) Nam, PhD from North Carolina State University is the founding editor-in-chief of 'Brain-Computer Interfaces' (with Jeremy Hill, PhD). In 2019, Jane E. Huggins, PhD from the University of Michigan, Ann Arbor joined Dr. Nam as a co-editor-in-chief. Dr. Huggins is on the Board of Directors of the BCI Society, and her appointment marked the creation of a formal relationship between the BCI Society and the journal. This relationship provides BCI Society members with free access to the online edition of 'Brain-Computer Interfaces' as well as a 50% discount on open access article publishing charges.

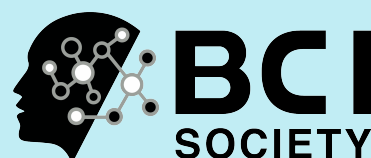
In the past year, we have undertaken an effort to accelerate the peer-review process. We have updated and increased the automatic reminders sent to reviewers. Additionally, we created a new set of classifications so that each paper is identified according to 6 topic areas: Signal Source/Recording Modality, Signal Type, Application, Participant Population, Methodology, and Experimental Focus. All new papers will use these new classifications and we are asking reviewers to select from these classifications so that they will primarily be asked to review papers that are of specific interest to them.

The journal 'Brain-Computer Interfaces' is recruiting for the Editorial Board. The associate editors manage the review process for specific papers. If you are interested in becoming an associate editor, please send a brief CV to Drs. CS Nam (csnam@ncsu.edu) and Jane Huggins (janeh@umich.edu) by January 31st, 2021. We are especially interested in recruiting associate editors

with expertise in invasive BCIs, neuro ethics/privacy, medical applications, etc.

'Brain-Computer Interfaces' has published multiple articles connected to the BCI Meetings. For the 2013, 2016, and 2018 BCI Meetings, the journal has published a paper summarizing each of the individual workshops. In addition, the journal published a special issue of papers from information presented at the 2018 BCI Meeting. A special issue of papers from the 2021 BCI Meeting has a planned submission deadline of 8/14/2021.

'Brain-Computer Interfaces' is currently abstracted and indexed in Scopus, Emerging Sources Citation Index (ESCI) and PsycINFO, and any journal in the ESCI is automatically considered for inclusion in the Science Citation Index Expanded™ (SCIE). At the moment, the 2019 Estimated Impact Factor for the journal is 2.813, which would place it 55th out of 136 in the Computer Science, Artificial Intelligence SCIE category and 151st out of 271 in the Neuroscience SCIE category. This estimate has increased compared to the 2018 estimate, so the journal is heading in the right direction. We, the Editors-in-Chief, expect 'Brain-Computer Interfaces' to be included in SCIE, PubMed, and MEDLINE in the near future.



Topics and Events of Interest for BCI Society Members

Did you know that the BCI Society website lists events that are of interest for BCI Society Members? If you know of an important event that is going to take place, you can contact the BCI Society and request the event to be mentioned on the website. Your request will then be processed by the Communications Committee and, if relevant, the board. We distinguish three types of events: Other events, Affiliated events and Partnered events. Please take a look at <https://bcisociety.org/affiliated-events/> for more details.

If you are looking for a new position in the BCI field, take a look at the Job Bank on the BCI Society website. We invite all BCI Society members to post their open positions there. So, do not hesitate to contact us if you want to make a posting or if you have questions.

All requests can be sent to:
communications@bcisociety.org.