

Brain-Computer-Interface Society

Note from the president



Dear friends,

We are less than three months away from the 10th International BCI Meeting

that will be held June 6th-9th in the Sonian Forest in Brussels, Belgium! I am very much looking forward to catching up with other members of the BCI Society and hearing about the latest scientific developments. The Scientific Program Committee has been working hard to put together an exciting program, which you can learn more about in this newsletter. I'd like to thank all of the members who submitted workshop proposals and abstracts—of which we received a record number! The theme of this year's meeting is "Balancing Innovation and Translation". Promising laboratory demonstrations and increasing commercial interest are starting to make clinical translation a near-term reality. At the same time, we know that there is still much to be learned and improved. We hope to explore the balance between continued innovation and making use of existing technologies for a more immediate clinical impact.

As a reminder to everyone, BCI Board Member elections will open on April 10, 2023 so please make sure to register your vote for the candidates that you would like to represent the members of the Society. Two current Board members have completed multiple terms and therefore will conclude their service. Please join me in thanking José del R. Millán (Past-President) and Donatella Mattia for their extraordinary efforts in shaping these early years of the BCI Society!

I look forward to seeing everyone in June!

Jen Collinger, President of the BCI Society

And the winner is....



Hereby, we proudly present the winner of the BCI Society inaugural Lifetime Achievement Award: Jonathan R. Wolpaw, M.D., Director of the National Center for Adaptive Neurotechnologies at the Stratton Veterans Medical Center in Albany, New York, US.

We congratulate Jon as the winner of the first edition of this award. It signifies his extraordinary and tireless efforts to serve the cause of BCI with passion and commitment, and his outstanding and sustained contribution to building and maintaining the BCI community.

Jon pioneered many aspects of BCI research that helped establish the field. He worked to bring together the experts that helped create the multidisciplinary BCI community we enjoy today. Many BCI groups were started thanks to the most common BCI software worldwide: the BCI2000 developed by his group. Junior and senior scientists alike would attest to being inspired by Jon's rigorous science. His persistent efforts to promote the clinical translation of the BCI technology have paved the way for BCI to serve people with disabilities. Jon will be honored for his accomplishments in a dedicated plenary session at the BCI Society Meeting in June, when he will give the Lifetime Achievement Award address.

The Awards Committee and the Board of the BCI Society want to express their gratitude to Seong-Whan Lee, José del R. Millán, Gernot Müller-Putz, Gert Pfurtscheller, Nick Ramsey and Rüdiger Rupp, for their contribution to the evaluation and selection process.

You can find more information about Jon in his interview in the first edition of the BCI Society newsletter: https://bcisociety.org/wp-content/uploads/2020/12/BCISociety_Newsletter_Issue_1.pdf

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Highlights:

Our inaugural Lifetime Achievement Award!

The incredible Professor Phil Kennedy and his insights!

They are back!! The Movie and Trivia Nights at the International BCI Meeting.

Interview with Professor Phil Kennedy

Could you tell us about your background, education and career path up to 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 have a very mixed background. I am definitely a mutt! I was always interested in the brain during Medical school in Ireland in the late 60s, and my colleagues continually asked me questions regarding the brain. After graduating, I obtained a degree in general surgery before I left for Canada. I did two years of neurosurgery before working in research for two years with Dr. Vernon Brooks in London, Ontario, Canada. Then off we went to Chicago with a growing family to do a PhD with Prof. Jim Houk at Northwestern University. In 1983 I arrive in Atlanta to work with Prof. Don Humphrey on the red nucleus in the midbrain in monkeys. Following productive years, I became a research scientist in Georgia tech. There I developed the unusual long lasting Neurotrophic Electrode whereby the brain grows into the electrode tip, instead of poking the unwelcoming brain with pins like all the other electrodes. Following the rat and monkey studies we obtained permission to implant three humans, which we did with the late Dr. Bakay. Then funding dried up so I went back to do a neurology residency. After that I did clinical practice plus research that was funded by the NIH to continue implanting patients. JR was the most well-known and he could drive the computer cursor and spell out his name and ours on the computer and so on. However, by 2003, I realized that implanting patients was not ethical if all it does is to allow them to type on the computer because such typing could be performed by external devices with the minimum of EMG activity, for example. So I thought hard about continuing and decided that it was ethical to implant to restore fine finger movements or speech. Speech seemed easier so I went that route especially after my ALS friend David Jayne said speech would make him "feel human again and talk to my children".

My current position is the co-CEO of Neural Logistics LLC. We have been funded by Dennis O'Leary of Dark Pulse Inc, a public company. We have a joint venture called Neural Logistics. He provides the funds, while we do the work. We have contracted collaborations with Arctop Inc for online decoding, neurosurgeons here and in Belize, electronic development in two microelectronic centers in Ireland, NeuroNexus in Ann Arbor, MI, to make the new 16 channel version of the Neurotrophic



Electrode that we are studying in rats. Dinal Andreasen is an engineer from Georgia Tech, who works with me part-time. So, this is a big push to get the job done!

What attracts you to BCI research?

There was no BCI when I started in 1986. Now, a society like BCI is attractive because it will cement our efforts and join us in a common goal, which simply is to improve the lives of humans, not with medications, not with genetics, not with surgery, not with transplants, not with anything except joining their brains intimately to computers. Wow! Who would have thunk that!

What contributions have you made to the field of BCI?

We had a few firsts. 1996: First human implant for long term recording to provide communication with a computer. First BCI I guess. 2004: First human implant to restore speech. 2014: First implant in a debatably well human (!) for analysis of speech decoding. I did this to myself to answer three questions that a mute person cannot answer. One is to know when silent speech begins. Secondly, and more importantly, are audible speech neural firing patterns statistically similar to silent speech neural firing patterns, and thirdly, can both epochs be statistically distinguished from a control period of sitting quietly and not speaking or thinking (very difficult to quiet the mind!). All these were answered in the affirmative. So now we have an offline technique to decode silent speech. Next step is to do that online. We are collaborating with Dan Furman of Arctop Inc. of San Francisco to achieve the online processing of silent speech within 200 ms using his machine learning paradigm.

It is really good to see so many groups have joined the effort to banish silent speech. There are many ways to

Interview with Professor Phil Kennedy continued...

decode speech using ECOG, multi-units, single units or maybe EEG. But for fluent speech I still have to be persuaded that single unit activity is not the way to go. It offers the highest resolution and, expectantly, the most fluent speech.

The other contribution is the long-lasting Neurotrophic Electrode. It has survived four years in participants ER and TT, and 13 years in participant ER until they died. Neural signals did not need to be re-calibrated even when recording at 9 and 10 years after ER's implantation. Conditioning experiments were performed at that time as well, indicating that the same single units were alive and kicking!! He was too ill to continue recording and died three years later. His histology showed no gliosis and normal neuropil, except (as expected) no neurons, only copious amounts of myelinated axons. All similar to the histology in rats and monkeys.

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

Frankly, getting funded. After many years of meagre self-support, getting funded will make a big difference to our research effort. It is also very good to see the field expanding.

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

It is critically important to attract private funding to the BCI field. To do that we must keep an eye on the long term. By that I mean not just developing the technology to restore speech, movements to paralyzed limbs, even controlling exoskeletons, but further out in time: we should aim to enhance normal humans. We should aim to provide them with safe, cosmetically acceptable, long-lasting implantable devices that will give them access to the Internet using a cloud connection, perform calculations like a calculator and have unlimited information, so that it basically enhances human capabilities. This is an urgent need if we don't want to be overtaken by robots. Ray Kurzweil predicts that the moment of singularity (when robots will be given human rights) will occur in 2029 which is just around the corner, so to speak. Robotic development is so fast that I predict we will just have to learn to live with robots within the next decade which may be as intelligent as ourselves. We had better get used to the idea of living with robots. If you don't believe me, have a conversation with ChatGPT. It talks back to you!

What do you think of contributions of large and rich companies?

It is difficult not to talk about Elon Musk who has the same long-term goals as we and many others do. In other words, eventual implantation in humans to enhance the human brain. He has developed a *tour de force* technology that robotically implants the electrodes. It is likely, however, that his long-term goal of implanting humans permanently will not be realized due to all the evidence that metal electrodes are always rejected by the brain leading to signal loss. However, so long as he and other big companies do not over promise, and his system makes a major contribution to understanding brain function, it will be a worthwhile effort. In addition, with Mr. Musk's depth of funding, rapid progress can be made without the long waits and low success rates that are inherent in government funding. The advances should spread to the rest of us but it is not a 'given' that we will hear of progress in other companies, considering how other big companies won't allow their employees to publish or talk about their research results. I am referring to Meta and Google.

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

Never give up! If you can clearly see that your idea is correct, after deep thought, and it just needs to be proven, do not let others more advanced in their careers stop you. Listen to them, then carefully assess what they say.

Also, do not go with the 'fashion'. Often a certain direction of research is 'all the rage' and you feel you must join in. If you have a better idea, go with it. It can become a major problem when the university expects you to bring in grant funding, which is difficult if you are 'out of fashion'. Loners don't get much of anything. But if you know you are right, and have a passion for your idea, believe in it, and stick with it. I have been unfunded for many years, but had the luxury of using my clinical income to string me along. And then, quite accidentally, Dennis O'Leary saw the documentary of our work, came to discuss the project and signed up with us. Call it luck, call it serendipity, call it what you like, but I had the data to prove what I was telling him, and he understood. So, never give up! My mother always said I was stubborn, but I claim I am persistent! You need to know the difference.

Interview with Professor Phil Kennedy continued..

Let me have Calvin Coolidge say it to you this way:

*Nothing in the world can take the place of persistence.
Talent will not, nothing is more common than unsuccessful men with talent.
Genius will not, unrewarded genius is almost a proverb.
Education will not, the world is full of educated derelicts.
Persistence and determination alone are omnipotent.
The slogan "press on" has solved and will continue to solve the problems of the human race.*

It is worth joining the BCI Society and Society for Neuroscience because they are where you get ideas from your mentors. These societies are a wide-open menu of ideas, a loaded smorgasbord of ideas! Be greedy. Be gluttonous. Lap them up. Think about them. Read widely. Learn to meditate so you can access your subconscious where your ideas reside. When you sleep, your subconscious is very busy stashing away the thoughts and doings of the previous day. So feed your subconscious with your ideas! If you wake up with an idea in the middle of the night, write it down quickly. It could vanish as you wake up, become conscious, and the busy day gets going.

You are a research pioneer in the BCI field and now you have pioneered the silent speech field. Based on the developments since the first papers on this topic appeared, where do you think we will be in 10 years?

I feel confident that in 10 years speech restoration for locked-in people and movement restoration for paralyzed people will be routinely available using the technologies that are being developed by present day BCI researchers. In addition, I think it is likely that 'normal' people will be willing to have implants that enhance their brain function. Ethically, it is important not to be bought out by some government, mercenary group or company that wants to control the enhancement technology and not allow it to be widely available. This ethical problem needs to be discussed at the society level. The simple answer of course is to make it available to everyone. However, cost factors will inhibit wide distribution initially, but cost will eventually be reduced. Think of the original cell phones: bulky and expensive. Now we all have one in our pockets at a cost of a few hundred dollars or euros.

You have been a participant in speech-BCI research yourself. How has this experience shaped your research and outlook on the field?

Implanting my own brain had a significant effect on my research. I summarized the results in the above contributions section. In brief, I learned how to decode silent speech! It has not changed my outlook on the field at all. I believe it is a wonderful endeavor and whole heartedly support it. It is the future, happening in the present.



(from top left) **Dennis O'Leary** is CEO of Dark Pulse Inc and co-CEO of Neural Logistics LLC with **Phil Kennedy**. **Ray Burke** and **Daniel O'Hare** are engineers at Tyndall Microelectronics Center in Cork, Ireland. **Madeleine Lowery** is a Biomedical engineer in UCD Dublin, Ireland, and **Saikia Prarthana** is her PhD student. **Dr. Joel Cervantes** is a neurosurgeon in Belize city, Belize. **Dr. Prince Ehirim** is a neurosurgeon in Atlanta, Georgia. **Dan Furman** is a data analytic specialist and CEO of Arctop Inc in San Francisco. **Dinal Andreasen** is an electrical engineer in Atlanta Georgia.

New Post Doc and Student Committee Members

After introducing the co-chairs of the Postdoc and Student Committee of the BCI Society in the previous edition of the newsletter, it is now time for other members of the PSC to introduce themselves!

Hunter Schone

Could you tell us about your current position and research?

I'm a neuroscience PhD Student at the NIH and University College London. The ultimate goal of my research is to harness our understanding of the human body and brain to promote more successful human-machine interactions.

Across a series of research studies, I've studied different examples of human-machine interaction: expert tool users, amputees that use robotic EMG-controlled prosthetic hands and able-bodied individuals controlling a third robotic arm. I use a variety of techniques in my research: behavioral analytics, electromyography, neuroimaging (fMRI) and machine learning.



Could you tell us why you signed up for the postdoc and student committee and what you would like to accomplish during your term?

The main reason I applied to be in the PSC was to better engage with the BCI community in both industry and academia. Similarly, during my term, I hope to continue working on organizing the Industry-Academia seminar series initiative which provides opportunities for trainees to hear from some of the leading BCI experts working across academia and industry.

Julia Berezutskaya

Could you tell us about your current position and research?

As a postdoc in BCI, I aim to translate knowledge of artificial intelligence and cognitive neuroscience to the field of neurotechnology for healthcare. For this, I develop BCI solutions for speech decoding that can be used by individuals with severe motor paralysis.

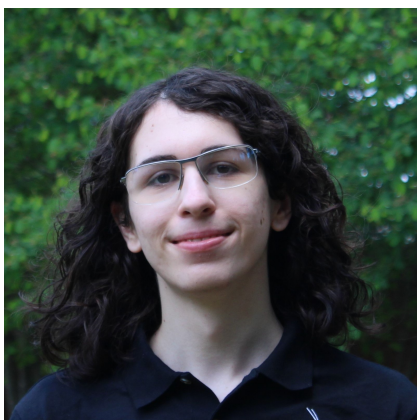
Could you tell us why you signed up for the postdoc and student committee and what you would like to accomplish during your term?

BCI Society offers a unique opportunity to network with BCI experts and industrial partners. Joining the committee also means that I can take an active part in the organization of career development, training and research activities in the BCI field.



Tan Gemicioglu

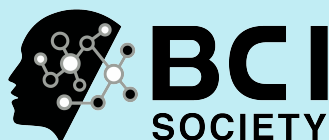
Could you tell us about your current position and research?



I am currently an MS student in Computer Science at Georgia Tech, working with Prof. Thad Starner and Prof. Melody Jackson. My research focuses on movement-based brain-computer interfaces for communication and augmenting the learning process for novel interaction methods.

Could you tell us why you signed up for the postdoc and student committee and what you would like to accomplish during your term?

I joined the Postdoc & Student Committee because I wanted to help improve knowledge distribution across the BCI community and ease the pathway to entering the field for early-stage trainees. Towards this end, I've been working on the Tutorials initiative, where we hope to create a public repository for tutorials teaching various topics in BCI. I'm also running the Discord initiative, with the goal of creating a new, instantaneous communication channel across BCI Society members.



Become a Member or renew your BCI Society membership today

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 for the BCI Society Workshop Series
- Complimentary registration for the Next Generations events
- Complimentary registration for the Master Classes
- Access to member-only initiatives and activities
- Free access to the online edition of the International peer-reviewed journal Brain-Computer Interfaces

Our one or two-year membership cycle has started in January 2023!

For one year:

Student: \$ 70 USD
PostDoc: \$105 USD
Regular: \$155 USD

For two years:

Student: \$105 USD
PostDoc: \$165 USD
Regular: \$235 USD

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

Society News and Views

BCI Society Poster

The BCI Society is always happy to welcome new members and thereby improve interaction and collaboration among BCI researchers, clinicians, industry, non-profit organizations, end-users, government entities, and others active in BCI research and development.

To create more awareness about the BCI Society, we have developed a poster (<https://bcisociety.org/wp-content/uploads/2022/01/BCI-Flyer-Final.pdf>).

If you are planning to attend or present at a symposium or conference, we invite you to take the poster with you (in large format or as handouts) and invite people to join! Members are also welcome to share this poster through university websites or other venues where our poster may be of interest.

OVERVIEW, PURPOSE STATEMENT, AND LEADERSHIP
Brain-Computer Interfaces (BCIs), also called Brain-Machine Interfaces (BMIs), are becoming more prominent in research, clinical, and even mainstream user applications. We formed the BCI Society in 2015 "to foster research leading to technologies that enable people to interact with the world through brain signals".

The BCI Society is a non-profit organization led by a board elected by its members. Elections and other procedures are governed by bylaws available on our website.

MEMBERSHIP
Membership is open to all scientists, principal investigators, post docs, and students from around the world. We welcome all involved in BCIs, including engineers, doctors, therapists and business professionals. Members get free online access to the journal BCI and many other benefits.

Visit bcisociety.org/membership to learn about membership benefits and join the BCI Society

INTERNATIONAL BCI MEETING
The International BCI Meeting is unique in providing an interdisciplinary, collaborative environment that convenes representatives from all fields involved in BCI research, including scientists, engineers, clinicians, policymakers, and users.

Our next BCI Meeting is scheduled for June 2023 in Brussels, Belgium.

ACTIVITIES AND RESOURCES

FREE Monthly Online Events (BCI Thursdays)

- Workshops
- Technical Background
- Trainee Spotlights
- Industry Academia Talks
- Career Panel

Website Resources

- Recordings of past BCI Thursdays
- A growing online repository of data
- Projects seeking research participants
- Jobs and events in the BCI research community
- The history of BCI Meetings and activities
- People on the BCI Society Board and committees
- BCI committee activities
- Calls for submissions
- Social media news including Twitter and LinkedIn
- Links to external sites and events
- Newsletters with updates, interviews and more
- Complimentary access to the journal BCI

Past recordings available to all on the website

bcisociety.org

Memorial Tributes

The Communications Committee has developed guidelines to support Memorial Tributes about former members. We understand this is a sensitive issue, but we also want to recognize the lives and contributions of those who have passed.

We now enable members to write Memorial Tributes pending Society approval, similar to SfN and other organizations. In addition, we will have a brief Memorial Ceremony at the meeting in Brussels in June.

Please contact the Communications Committee if you are interested in writing a Memorial Tribute, or if you want to know more about the Memorial Ceremony.

Interview with our Early Career Award Neuroscience winner

Camille Jeunet

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

I started my PhD in 2013 in Bordeaux, with the aim to better understand BCI user performance and to improve training procedures. In 2016, I obtained my PhD degree in cognitive sciences and started working as a post-doc fellow at Inria (FR) and EPFL (CH) on the use of EEG and virtual reality to improve athletic performance. In 2018, I got a tenured research scientist position at the French national center for scientific research (CNRS). Since 2021, I am back to Bordeaux where I joined the Aquitaine institute for cognitive and integrative neuroscience (INCIA) to lead my research on the use of BCIs and neurofeedback to improve or restore cognitive and motor abilities. With my team, we are eager to contribute to improving the condition of stroke patients and patients with Parkinson's disease, and to enhancing athletic performance.



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

I am extremely grateful to Pr. Dominique Guehl (neurologist in Bordeaux) and Dr. Fabien Lotte (who needs no introduction). It is they who led me to discover the field of BCIs and motivated me to become a researcher. They have always supported me (in the English and French sense of the word ;)) and I will never thank them enough for that. Then, along the years, I had the chance to meet many brilliant researchers. Two have particularly inspired me: Pr. Andrea Kübler and Dr.

Nathalie George. I admire them a lot for their very rigorous and original approach of BCIs, always putting end-users at the center of the loop, and also for their commitment to the community, beyond their own research interests (how they manage to handle everything remains a mystery to me :)).

What is the best part of your work?

I appreciate very much the freedom that we have both in terms of research focuses and of collaborations. Our field is intrinsically interdisciplinary, which means that the BCI challenges can be addressed through diverse standpoints and through collaborations with people of various and additional profiles, be they researchers, clinicians, developers, patients, pilots, athletes, gamers, teachers or industrials (among many others).

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

I'm grateful to have my work recognized as important in the field. As such, I hope this award can confer some legitimacy to the career path of being a research scientist that continues to do boots-on-the-ground technical work, as opposed to the traditional professorship path.

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

The main challenge I think is to make BCIs usable and actually used out of the lab soon, so that the current hype surrounding BCIs does not turn into disillusionment or disappointment (like it was the case for AI a few decades ago). To achieve this objective, I am convinced that a collaborative and open-science approach is absolutely necessary. Only this approach will allow the collection of sufficient amounts of high-quality data to enable us to understand within- and between-subject variability in terms of performance, and then design efficient BCIs. Efficiency is necessary but (I think) not sufficient. For those new BCIs to be actually used, they have to meet end-users' needs, which necessitates that we communicate more directly and systematically with the latter.

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

I do not have a lot of experience... But I would advise first, when they start, to ask themselves a lot of questions and to take the time to look for a maximum of answers (in books, papers, but also by discussing with the community) so that they have an overview of the field and of the challenges, and make sure that what they want to do makes sense. Then, I would advise to regularly look back in order to never lose sight of their objectives. And finally: do not hesitate to contact other researchers, clinicians or end-users to exchange with them.

Tell us something about your future plans.

Professionally speaking, my objectives at the moment are to continue developing my (great) team in Bordeaux, making some significant progress on the on-going projects with my collaborators, and also (this will be the most challenging part) to make our project for a collaborative approach in BCIs based on open-science a reality. Then, more broadly, I think that my main plan now is just to enjoy life :).

BCI Society Committee Updates



The BCI Awards Committee is pleased to announce the inaugural BCI Society Lifetime Achievement Award winner (see page one of this issue). At present, the committee is preparing to launch the third edition of the Early Career Award (ECA). Like the previous two editions of this award, the 2023 edition will acknowledge

different aspects of BCI research.

Learn more at the BCI Meeting in June 2023, where we plan to launch the call.



The Communications Committee is changing composition! Late 2022, we said goodbye to Aysegul Gunduz. We thank her for her contribution to the work of this committee! Since then, the team has welcomed two stellar members: Jane Huggins

of the University of Michigan and Stephanie Scott of Colorado State University. With Jane and Stephanie joining the team, Mariska Vansteensel and Natalie Mrachacz-Kersting decided to phase out of the committee and leave the committee in the course of the coming weeks. Gernot Mueller-Putz will be the new interim-chair of the committee, which remains committed to keep you informed and connected.

In the meantime, the Communications Committee is preparing for our first in-person meeting since 2018. We are very much looking forward to meeting you all in Brussels. We expect a lot of great science, and there will be plenty of time to meet with old friends and make new ones. As usual, we expect some journalists to be interested in the meeting. We are currently working on updating the BCI Society policy on filming and recording on the website. To further streamline the interaction between journalists and BCI researchers, we are also developing Media Guidelines, which will be published on the website as well.

To make sure we can keep up the good work, we need your help! Please let us know about all the interesting events that you are organizing and about any job opportunities your lab may have. Also, we invite you to contact us if you have datasets that you can share in the BCI Society database, and to send us the link to any BCI-

related dataset paper that you have published. Together, we can make sure that the BCI Society database continues to grow and that precious data is used to its fullest extent!

If you are interested in getting involved in the activities of the Communications Committee, do not hesitate to contact us, via communications@bcisociety.org.



The philosophy the Fundraising Committee Members follow is to offer all existing and future partners (private or public foundations, companies, donators) a clear framework for a successful partnership with the BCI Society. Part of our role is to identify possible sponsors and to

establish guidelines for the distribution of funding within activities of the BCI Society.

To this end we have been working towards securing funding for our BCI Society meeting, for our BCI Society Awards, the Trainee Collaboration Projects, Future events (e.g. BCI Thursdays) and Social events (e.g. the SFN social).

The mandate of the committee is to assist the Society in the planning, coordination and implementation of all fundraising activities in support of the projects and activities of the society. If you would like to sponsor the BCI Society or if you would like to share any thoughts related to sponsoring, please contact us (email: fundraising@bcisociety.org)



The Membership Committee is looking for ways to diversify membership and expand member benefits. To that end, we are considering special outreach activities to under-resourced countries. We will release a member survey at the June meeting to gather your

thoughts. Please contact us if you have ideas and would like to get involved.

BCI Society Committee Updates

Early Career Researcher Opportunities during BCI Meeting in June



The next BCI Meeting will be a great opportunity for early career researchers to share their work, learn new skills, and build new connections. Master classes will give trainees an extra opportunity to present their work and receive feedback from senior BCI researchers. Didactic

sessions and tutorials will guide trainees to learn new skills that they could directly apply to their work, such as how to use machine learning in BCI. We will also have multiple lunches with leaders, where trainees can meet BCI leaders and ask questions about research and/or career, while building new connections. For those trainees who are or will soon be on the job market, there will be a job fair with academic and industry representatives looking to hire BCI talents, as well as a session with representatives of several funding agencies discussing how to apply for grants. Finally, there will be a booth to meet the leaders of the BCI Society and provide suggestions, as well as a specific event on diversity and inclusion in BCI.

2023 BCI Meeting Movie Night

The BCI Society will host its first Movie Night at the upcoming meeting! We plan to show a full-length movie or 2 short series episodes, depending on what members want. This content must be BCI-fi; that is, it must be fiction that includes BCI.

We're aiming for 1-2 hours of content, with discussion about realism and ethics. Different websites with examples of BCI-fi can be found here: <https://bcifi.org/other-work-that-analyzes-bci-fi/>

NOTE: You must be a BCI member to participate.

To participate please fill in the form found here:

https://docs.google.com/forms/d/e/1FAIpQLSdP0r1aQAaGioybyXIU3ZHW56HD3CIet_kTwNYECu

10th International BCI Meeting

Join us in Brussels for the 10th International BCI Meeting!

We will convene at a new and beautiful venue, but retain the program elements you enjoyed so much in the past. The program includes, among others, three stellar keynote speakers, over 20 interesting workshops, numerous posters and research talks (we received a record number of abstract submissions!), a neuroethics session and user's forum, and lots of time to connect with fellow BCI researchers, for example during the joint breakfasts, lunches and the open air BBQ.

Some of our new program elements are in-person lectures by the 2021 Early Career Award winners, Camille Jeunet and Frank Willett, and by the inaugural 2022 Lifetime Achievement Award winner, Jon Wolpaw.

In addition, the PSC and Young Talent Committee are planning several events for the BCI Meeting including a job workshop, master's classes, didactic sessions, diversity event, and speed dating event.

Early Bird rates (deadline April 6, including 21% VAT tax) are as follows:

- Member \$850
- Non-member \$1,100
- Postdoc member \$750
- Postdoc non-member \$900
- Student member \$700
- Student non-member \$800

This price includes access to all program elements, complimentary WIFI in the meeting rooms, daily coffee breaks, 3 lunches and 4 dinners. Please note that breakfast is included with hotel room reservations.

To facilitate all who are interested to participate in the BCI Society Meeting, we provide the following options for financial support:

- Student and postdoc travel awards
- Financial hardship grants
- Family care grant program

Please check bcisociety.org for more information. We look forward to meeting you all in Brussels!



10th International BCI Meeting

June 6 – 9, 2023

Sonian Forest, Brussels, Belgium

BCI Meetings: Not Just Work

The first BCI Meeting established a tradition that all future BCI Meetings have followed. All BCI Meetings have been in a remote nature environment with social activities. Why? During most meetings and conferences, attendees don't interact much outside of official activities. When the talks, workshops, and poster sessions end, people often scatter in a big city rather than joining each other for meals and other interaction. We instead planned our meetings where people could easily relax, hike, run, play, eat, drink, and chat together. We kept this approach when the BCI Meetings switched to a new venue for the fourth meeting in 2010, and after the BCI Society began organizing the BCI Meetings starting with the sixth meeting in 2016. You can learn more about past meetings on our website: <https://bcisociety.org/bci-meeting/past-meetings/>



These two images show our first transition from one meeting venue to another. The left image shows the venue where the first three BCI Meetings were held in Rensselaerville, New York. The fourth through seventh meetings were at the Asilomar Conference Grounds in Pacific Grove, California. The right image shows a boardwalk to the beach less than a kilometer from most of the conference buildings.

Social activities have included the Women in BCI Breakfasts and Lunches with Leaders. We've hosted evening activities like awards ceremonies, Town Halls, a BCI Trivia Night, and Open-Air BBQs. In addition to food and drinks that we provided, some sponsors and friendly members have kindly paid for some refreshments. Friendly competitions with BCI systems or other challenges have emerged. The first BCI Meeting featured an international table soccer competition. The team from Switzerland won but might face heavy competition in our 2023 meeting. Rumors have circulated of massive beach bonfires with outdoor BCI demos, international beverage exchanges, swirling fire poles, the occasional keg, limited bodysurfing, and friendly encounters with other bonfire partiers at prior BCI Meetings – completely unaffiliated with the BCI Society or BCI Meetings, of course.

We're very excited to host our first in-person BCI Meeting since 2018. We're also looking forward to the third BCI Meeting venue. For the first time, we plan a BCI Meeting at Dolce La Hope in Belgium's Sonian Forest. This is an ancient beech and oak forest with a myriad of paths and both nature and archaeological preserves. While we're still planning our 2023 BCI Meeting, some of the social activities from prior meetings have already been announced for 2023: <https://bcisociety.org/wp-content/uploads/2022/12/BCI-Web-Dec.7.pdf>

If you would like to organize or sponsor a social event at the upcoming BCI Meeting or a satellite event, please contact us at bci@podiumconferences.com.



10th International BCI Meeting

Keynote speakers



Edward Chang, PhD

University of California, San Francisco

Edward Chang is the Joan and Sanford Weill Chair and Jeanne Robertson Distinguished Professor of Neurological Surgery at the University of California, San Francisco. Dr. Chang's clinical expertise is surgical therapies for epilepsy, pain, and brain tumors.

He specializes in advanced neurophysiologic brain mapping methods, including awake speech and motor mapping, to safely perform neurosurgical procedures in eloquent areas of the brain. His research focuses on the discovery of cortical mechanisms of high-order neurological function in humans. Dr. Chang's laboratory has demonstrated the detailed functional organization of the human speech cortex and has translated those discoveries towards the development of a speech neuroprosthetic device to restore communication for people living with paralysis. Dr. Chang is the 2015 Blavatnik National Laureate in Life Sciences and member of the National Academy of Medicine.

based stress reduction and mindfulness based pain management. She is investigating different aspects of the mindfulness concept from basic questions on how to define mindfulness to mindfulness-based interventions in chronic disease, such as COPD, Fibromyalgia or Parkinson's disease. In 2022 she was ranked 37/100 best female scientists in Germany and 904/1000 worldwide.



Thomas Oxley, MD, PhD

Synchron

Associate Professor Thomas Oxley MBBS BMedSc FRACP PhD is a vascular and interventional neurologist and world expert in brain computer interfaces. He is Associate Professor and Laboratory Head of the Vascular Bionics Laboratory, University of Melbourne, Australia, as well

as Clinical Instructor, Attending in the Department of Neurosurgery, Mount Sinai Hospital. Dr Oxley has performed over 1600 endovascular neurosurgical procedures, including cerebral aneurysm coiling and clot retrievals in acute stroke. Dr Oxley has published over 100 internationally peer reviewed articles in journals including JAMA Neurology, Nature Biotechnology, Nature Biomedical Engineering, New England Journal of Medicine and The Lancet. Dr Oxley is the founding CEO of Synchron, a brain data transfer company based in Brooklyn, NY and has raised over \$145M in both private funding and grants. Synchron is developing the leading endovascular implantable brain computer interface, Stentrode™, a system that aims to provide a treatment for debilitating medical illnesses and enable patients to feel empowered by reconnecting online in ways that can dramatically improve their lives. In 2022, Dr Oxley and Synchron commenced a clinical trial on the Stentrode motor neuroprosthesis that is paving the way towards first FDA approval for marketing of implantable Brain-Computer Interfaces.



Andrea Kübler, PhD

University of Würzburg, Institute of Psychology

Prof. Kübler, PhD, Biologist and Psychologist, is Associate Professor at the University of

Würzburg, Institute of Psychology, and her major research topics within the field of BCI are psychological aspects, and neuroscientific basis of BCI control and studies with patients in the field. She is working on using neurofeedback for communication, rehabilitation and therapy, i.e. for replacing and improving lost or impaired function. Besides being an expert in the clinical application of BCI she is a trainer of mindfulness

BCI Trivia Night!!!

We're planning the second-ever BCI Trivia Night at the next BCI Meeting! Like our BCI Trivia Night at the BCI Meeting 2018, we plan several rounds of questions, with different question types. Each team can have up to 6 people, and your team should have people with varied expertise. If any members would like to help us develop questions, please email ballison@ucsd.edu.

