Dear EBPS members,

While we all still live in a state of adjusting to the pandemic – to a different situation at home, in the lab and health measures impacting on our professional and private lives – I do hope that you have enjoyed a relaxing summer break. A lot has happened since our last newsletter. I will give you a brief update here, and a lot more can be found on the following pages.

In July, we enjoyed the virtual FENS Forum. Many of us participated, and I hope that you found it just a feast of neuroscience as I did. Although we missed meeting each other – and talking about science in person and catching up with friends is a very important part of a conference – there was an enormous amount of high-quality neuroscience to be enjoyed. I would like to compliment the organisers of the FENS Forum once again for taking care of such a fantastic virtual meeting in such a short time.

As you know, as a society we participated in a pre-meeting mini-conference on ‘Behavioural neuroscience for the next decade’, organized together with our friends and colleagues of EBBS, IBANGS and EMCCS. I cannot say otherwise than that this virtual mini-conference was a great success, with 12 fascinating talks – including those by Amy Milton, Shelly Flagel and Marco Venniro on behalf of EBPS; Anand has written a brief summary of their talks below. The mini-conference was attended by over 200 people. With such a turn-up and great science, it is quite clear that the future of behavioural neuroscience looks bright and promising, and that, to quote the title of the mini-conference: behaviour does matter for brain science!

In the meantime, we have also been working on our own forthcoming meetings. Rudy Schreiber, Arjan Blokland and the other members of the local organizing committee have been putting in a lot of effort to make progress with the 2021 biennial meeting in Maastricht, which you will find out about on the following pages. That is, we are excited to announce a wonderful line-up of plenary speakers, including the winners of the 2021 Distinguished Achievement Award and the Young Scientist Award. Curious who they are? Their names are disclosed on page 2!

There is also news about the workshop on ‘Behaviour to Biomarkers: Reverse Translation in 2020’ that was originally planned for August 2020, now postponed to March of 2021.

I wish you happy reading!

Kind regards,
Louk Vanderschuren
EBPS President

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**EBPS Biennial Meeting**

The [2021 EBPS Biennial meeting](#) will be held in the picturesque city of Maastricht, The Netherlands. The conference symposia will cover diverse topics in pharmacology, psychology, psychiatry, and neuroscience on cellular, genetic, pharmacological, and neural circuit mechanisms of behaviour in both animal models and human subjects. The call for symposia has been announced and details can be found [here](#) and we encourage you to submit proposals by the deadline, [1st October](#). More information and a message from Rudy Schreiber, chair of the local organizing committee is shown below.
In the time of COVID-19, we have witnessed a significant shift in how scientific meetings are being held. As someone who lives in the southern hemisphere and sometimes struggles on long-haul flights, this has been a welcome change. Many societies have adapted incredibly well to this ‘new normal’ and we only need to look at the success of the FENS 2020 Virtual Forum as an example of how conferences might be held in the future. Just prior to the Virtual Forum, EBPS had organized, together with IBANGS, EBBS and EMCCS, a mini-conference titled, “Behavioural Neuroscience for the next decade: Why behaviour matters.” Representing our society at this event were Amy Milton, Shelly Flagel and Marco Vennirio all of whom gave fantastic talks. Amy spoke about the need for using psychological frameworks to deconstruct and reconstruct complex animal behaviours. This theme was further explored by Shelly who discussed the role of dopamine for attributing incentive value to reward cues, the development of sign-tracking behaviour and the relevance of this phenomenon to psychopathological disorders. And finally, Marco presented his research which highlighted the need to develop more realistic models of relapse which considers other environmental factors such as social stimuli. In addition to these, there were also interesting talks by Stoy Karamihalev (EBBS) who spoke about behavioural synchrony in mice. Angel Barco (EMCCS) discussed his lab’s method of combining genetic tagging technologies with next generation sequencing to generate high resolution, transcriptional datasets which potentially underpin engraving formation and Caroline Brennan (IBANGS) who demonstrated the utility of zebrafish to carry out relatively high-throughput forward genetic screens to identify genes implicated in age-related cognitive decline. All in all, an excellent mini-conference!

We are delighted to announce that the recipient of the 2021 Distinguished Achievement Award is Aldo Badalian (Italy & UK) and the Young Scientist Awardee is Leah Mayo (Sweden). Aldo is Professor of Pharmacology at Sapienza University of Rome and Professor of Psychology and Addiction Medicine at the University of Sussex. His research employs translational paradigms to investigate the neurobiology of addictive drugs. He was also president of EBPS from 2011-2013 and will be delivering a plenary on his work at the 2021 EBPS Biennial (see page 3). Leah Mayo was recently appointed as an assistant professor in the Centre for Social and Affective Neuroscience at Linköping University. She was also the recipient of prestigious starting grant from the Swedish Research Council. Her lab’s research will focus on the role of the endocannabinoid system in the neurobiology of stress-related psychiatric disorders. Leah will give a talk on her research and Aldo will deliver a plenary at next year’s EBPS Biennial to be held in Maastricht. Stay tuned for profiles on each of them in an upcoming issue.

Unfortunately, due to the COVID-19 pandemic the EBPS workshop, Behaviour to Biomarkers, which was organised by Jane Foster and Mohammed Shaobi and scheduled for August has been postponed to March of 2021. The schedule and list of speakers for this workshop remains but given the uncertainties around travel, we envisage that this workshop will be delivered in a virtual format. More information will be forthcoming.

These are exciting times and I fully agree with Louk that “the future of behavioral neuroscience looks bright and promising”. Part of that bright future is going to be the 2021 biennial meeting. So what has happened since the decision to organize the next biennial meeting in Maastricht? A first step has been the formation of a local organizing committee (LOC). During this process we stretched the concept of “local” because half of the colleagues come from other Dutch universities. Our LOC rocks with its mix of personalities and experiences from all over the country: check out our website for more information! And whilst you are at it, please click on the link to learn about the submission process and to start brain storming about potential topics for your symposium proposal. I encourage you to reach out to any of the LOC members or EBPS executive committee members if you have any questions or you want to bounce off some ideas.

The elephant in the room is of course what the format of the meeting will be: virtual; on-site or a hybrid of both? We are lucky as we can profit from the experiences with virtual conferences that are quickly accumulating. As you read in Louk’s and Anand’s sections, the FENS meeting has been a great success. And the virtual EBPS workshop on ‘Behaviour to Biomarkers: Reverse Translation’ that is planned for March will give us valuable in house experience with organizing such events. We will be ready if we need to go fully virtual. But of course we hope to have a significant on-site program. We are keeping that option open for as long as possible as we would be thrilled to welcome you in the vibrant and beautiful city of Maastricht!

Whatever the precise meeting format is going to be, an exciting program is absolutely key for the success of the meeting and we are delighted to announce that we have secured several plenary speakers. Hopefully we will receive many great symposia proposals.

We count on you to make the meeting next year a stimulating experience where we together move one step closer to that bright future for our discipline!

Rudy Schreiber – Chair Local Organizing Committee EBPS Biennial Meeting Maastricht 2021

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Rudy Schreiber – Chair Local Organizing Committee EBPS Biennial Meeting Maastricht 2021
Paternal morphine self-administration produces object recognition memory deficits in female, but not male offspring

Ms Alexander Ellis & A/Prof Mathieu Wimmer
Dept. of Psychology & Neuroscience Program, Temple University

Substance use disorders remain a substantial society burden with economic and public health consequences felt around the globe. Recently, it was estimated that 5 million fathers are living with substance use disorder in the United States. Previous studies in humans and rodents have shown that paternal life experiences can have profound consequences for the health of their offspring and grand-offspring. For example, studies of the Overkalix parish in Sweden have linked paternal smoking and alcohol consumption to lower birth weight. Male and female offspring of smoking fathers had higher anxiety and depression scores compared to offspring of non-smoking fathers. In addition, paternal smoking may also affect the health of subsequent generations. For instance, studies have shown that paternal smoking can increase the risk of diabetes and other chronic diseases in offspring and grandchildren.

To examine anxiety-like behaviors in offspring, we used the novelty-induced hypophagia and displaced object probe test. Our results showed that paternal morphine self-administration did not affect anxiety-like behaviors in male or female progeny. This suggests that paternal morphine exposure may not disrupt anxiety-like behaviors in the offspring.

We also investigated the effect of paternal morphine exposure on object recognition memory. We found that paternal morphine self-administration disrupted object recognition memory in female offspring, but not in male offspring. Our findings highlight the importance of studying paternal effects on offspring, as paternal morphine exposure can have different effects on male and female offspring.

Figure 2: Paternal morphine self-administration impairs long-term object recognition memory in female progeny.

A significant challenge with this work was the length of drug self-administration in the sires and organizing the resulting colony of first generation progeny. Each cohort of sires and production of progeny spans about 6-9 months so rigorous planning is essential for these studies. Contextualizing our findings in this nascent field was also difficult. Methodological considerations have resulted in somewhat conflicting results regarding the consequences of paternal morphine exposure in first generation offspring. For example, when sires are given experimenter-administered morphine with a withdrawal period prior to mating, both male and female offspring display increased anxiety (PMID: 24889368). However, in this study we did not find an effect of paternal morphine use on anxiety in offspring. It is well established that voluntary drug consumption can produce divergent molecular and behavioral consequences compared to experimenter-delivered drug exposure in rodents. Moreover, there is evidence that the motivational aspect of reward consumption (food or cocaine) in the sires is predictive of the phenotype in progeny (PMID: 28556835, PMID: 29021748). Lastly, it is unclear how all of these collective findings in animal models potentially translate to the children of fathers who live with substance use disorder. Studies of this kind are extremely rare in patients. Multigenerational rodent models offer the opportunity to explore the molecular underpinnings of transmission that lay the groundwork for further investigations in clinical populations.

In summation, our results demonstrate that paternal morphine self-administration impairs novel object recognition memory in female, but not male progeny. These findings raise a number of questions regarding the neural mechanisms underlying this phenotype and the mode of transmission of morphine exposure in sires to their offspring. In future studies, we hope to delineate these processes in the brain of adult progeny and in the germline of morphine-treated sires. Defining the signature associated with paternal morphine exposure may shed some light on epigenetic inheritance of opioid exposure and drug-induced cognitive deficits.

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Dr Wimmer is currently hiring postdoctoral researchers to join his research team. If you’re interested, apply here.

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Psychopharmacology Journal Club
Ms Alexandra Ellis & A/Prof Mathieu Wimmer
Dept. of Psychology & Neuroscience Program, Temple University

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