



Dear EBPS members,

This is my first letter to you in my role as the new EBPS president. Below is a brief update on EBPS past and future activities that I hope will be of interest to you.

EBPS 2021 biennial meeting

We had a successful virtual meeting on July 13-16 with 331 participants. The meeting included 6 plenary speakers, 28 symposia chairs, and 96 symposia speakers from 25 countries. We also had 67 poster presentations (most of them of students and post-doctoral fellows) and other events. The meeting included excellent lectures from the two new EBPS awards' winners: Aldo Badiani (lifetime achievement award) and Leah Mayo (young investigator award). I would like to thank Rudy Schreiber, Arjan Blokland, Heidi Lesscher, and other members of the local organizing committee for organizing the meeting.

EBPS 2022 workshop

Our 2022 EBPS workshop, "Spanning the spectrum of social behavior: towards more translationally relevant animal models," will be held in Rome on June 24-26, 2022. The meeting is organized by five early-career investigators: Marco Venniro (U Maryland), Sam Golden (U Washington), Daniele Caprioli (La Sapienza U of Rome), Valeria Carola (La Sapienza U of Rome), and Valentina Ferretti (La Sapienza U of Rome). Confirmed plenary speakers are Nora Volkow, Louk Vanderschuren, Alon Chen, and Carmen Sandi. The organizers plan to have an in-person workshop, but this may change depending on the current global pandemic and related travel restrictions. More information about the workshop will be coming in the next several months.

EBPS 2023 biennial meeting

Our next EBPS biennial meeting will be held at Heidelberg on September 13-17, 2023. The meeting is organized by Rainer Spanagel, Markus Heilig, and Tina Waschke. The scheme of the meeting will be translational research in psychiatry and other brain disorders spanning from in silico drug design to human clinical trials.

Membership and payment updates

We currently have 180 members, including 49 post-doc and graduate student members. Our annual membership fee for the two categories is low (100 Euro and 40 Euro) and includes several benefits, such as free access to Psychopharmacology and European Journal of Neuroscience. We keep the membership fee low (yearly student/post-doc membership is similar to the price we pay for a single 125-150 g female Sprague-Dawley rat in the US), because the society is run by volunteers. A new feature, implemented by Anand Gururajan (our webmaster) and Mohammed Shoab (our treasurer), is a credit card membership payment process that is as simple as an Amazon order. Please encourage your friends and colleagues to become [EBPS members](#).

EBPS committees and leadership changes

I would like to thank Louk Vanderschuren for the excellent job he has done as the EBPS president during the last two years. For the next two years, Louk will serve as past-president. I am looking forward to working with Shelly Flagel (U of Michigan) who was elected by the EBPS members to be the president-elect. I am also looking forward to working with Amy Milton (U Cambridge) who will replace Shelly as our new EBPS treasurer. I would like to thank John Cryan, Nuno Souza, and Taco de Vries for serving on the Executive Committee (John and Nuno) and the Full Committee (Taco). They are rotating off at the end of their term. I welcome Anand Gururajan, Karen Szumlinski, and Rainer Spanagel who were elected to serve on the Full Committee by the EBPS members for the next 6 years. I also welcome Rainer Spanagel and Marco Venniro who will join the Executive Committee; they will represent the organizers of the EBPS 2023 biennial meeting and the EBPS 2022 workshop.

Diversity initiatives

EBPS is committed to increasing the diversity amongst our membership and ensuring a welcoming and supportive environment for all. Since 2017 we have done an excellent job with gender equality with the proportion of women speakers close to 50% in the last three biennial meetings. This number is significantly above the estimated 29-33% of women faculty in neuroscience and pharmacology, and the estimated 30-32% of women awarded NIH R01 grants between 2018-2020 (estimates are based on data compiled by [BiasWatchNeuro](#) and [NIH](#)). During the next two years, we will be forming a "Diversity, Equity and Inclusion Subcommittee" to help identify action items in this regard. We hope to increase membership and participation from scientists in Eastern European, Mediterranean, African, and Asian countries that have not been well-represented at EBPS in the past. In this regard, as part of our new website for membership payment, we created a link for donations to EBPS. We are committed to using these donations for travel awards for scientists from underrepresented countries and populations to attend the 2023 EBPS meeting.

Psychopharmacology

Psychopharmacology is now the official journal of EBPS. I would like to thank Aldo Badiani who orchestrated this change

several years ago and Christelle Baunez who is the EBPS-designated editor of the journal. Psychopharmacology is one of my very favorite journals, because some of the most important papers over the years in my field of expertise (drug addiction) have been published in the journal. More personally, some of the most important papers I coauthored, and my all-time highest cited paper were published in Psychopharmacology. I would like to encourage all of you to submit to our society's journal that recently underwent major changes and recruited highly accomplished new field editors, including Stan Floresco and Tricia Janak. The journal's impact factor also significantly increased in 2020 by almost 50% to 4.5. Finally, the journal recently established a [Twitter account](#) that is managed by the journal's social media editor, Steve Mahler. I recommend following the journal on Twitter and receive the weekly countdown on Psychopharmacology's of all time and other journal-related information.

Yavin Shaham

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Our newest FC Members



[Prof. Karen Szumlinksi](#)

[University of California, Santa Barbara](#)

My research focuses on the biomolecular mechanisms underpinning substance use disorders and related conditions, including affective, cognitive and psychotic disorders. We employ rat and mouse models to understand how repeated exposure to cocaine, methamphetamine, alcohol and prescription opioids impacts brain neurochemistry to drive the maladaptive behavior that constitutes this chronic, relapsing, disorder. This interest stems from the fact that substance use disorders are a major global disease burden, with limited therapeutic options available for reducing drug intake, preventing relapse following a period of abstinence, and restoring cognitive and affective processing to facilitate recovery. To that end, my laboratory employs a multi-disciplinary approach, combining in vivo microdialysis, immunoblotting, neuropharmacological, transgene-delivery and classic behavioral pharmacology, to discover and functionally validate neuroadaptations that affect addiction vulnerability and disease outcomes.

My interest in the neurobiology of addiction began during my undergraduate and early graduate training at McMaster University (Canada), and was bolstered by my Ph.D. training in Neuroscience and Neuropharmacology at the Albany Medical College (USA) and my post-doctoral training in Neuroscience from the Medical University of South Carolina (USA). I am currently a Full Professor of Psychological and Brain Sciences at

the University of South Carolina with affiliations with both the Neuroscience Research Institute and the Department of Molecular, Cellular and Developmental Biology.

Having been an active member of EBPS since I was a junior Ph.D. student, I am very honored to have been selected for the Full Committee. I have two major, inter-related, goals for EBPS in the upcoming years that will require the support of EBPS membership to accomplish. The first is to develop a career mentoring program for doctoral and post-doctoral trainees to facilitate networking during workshops and meetings and encourage retention in the Society. The second is to initiate a program to increase diversity, equity and inclusion in EBPS through both a travel award program to recruit individuals from under-represented countries/backgrounds and networking events to facilitate integration and collaboration within EBPS. I am involved in similar efforts for other international and North American scientific societies and look forward to working with EBPS membership to make these programs happen.

While I never seem to have enough spare time these days, I enjoy cooking, traveling, coaching my eldest daughter (ERK1) in soccer and basketball, and watching my younger daughter (ERK2) hang upside down from the rafters in her aerial dance performances. I guess you can say that my life is a circus sometimes!



[Prof. Dr. Rainer Spanagel](#)

[University of Heidelberg](#)

I am a basic, preclinical, and translational addiction researcher. My overall ambition is to understand addictions and comorbidities on multi-system levels and to develop diagnostic, preventive and therapeutic strategies accordingly. My strengths lie in a multi-system level approach with high inter-disciplinarity and my ability to work in cooperation with physicists, chemists, mathematicians, clinicians, and the pharmaceutical industry.

Here I will describe three key discoveries of my research activities. In the 90s, there was a worldwide hype for rapid opiate-detoxification (ROD). ROD is the application of naltrexone under anesthesia, which was hypothesized to detoxify heroin-addicted patients in 24 hours. Despite the fact that there was only sparse clinical evidence for its effectiveness, the method spread around the world within a short time. However, I questioned the theoretical background of ROD and showed in an animal model of opiate withdrawal that naltrexone under anesthesia in fact had the opposite effect: it augmented and prolonged withdrawal signs in rats. After much heated discussion, it became clear that the initial studies on ROD were done under non-controlled conditions in Pakistan and that indeed many patients had stronger and prolonged withdrawal symptoms than

those initially reported. The method disappeared as quickly as the hype evolved. This demonstrates how powerful the translational value of appropriate animal models in the field of addiction can be, and how preclinical research can inform clinical practice. It also shows the importance of publishing negative results.

Another major contribution was the discovery that mesolimbic dopaminergic neurons are regulated by opposing endogenous opioid systems. This discovery was crucial to understanding reward processes on a neurochemical level, and laid the mechanistic foundation for the use of opioid antagonists such as naltrexone and nalmefene to treat relapse in alcohol-dependent patients. Both papers in which this discovery was described became citation classics, with more than 1800 citations.

Early on in my career I focused on the development and mode of action of anti-relapse medications, a series of studies that were essential to understanding the effects of acamprosate (calcium-(N-acetylhomotaurinate). The mode of action remained obscure until 2006, when we demonstrated that acamprosate acts in the addicted brain on a hyper-glutamatergic status. We then made the surprising discovery that N-acetylhomotaurinate is a biologically inactive molecule. Thus, the effects of acamprosate in 1.8 million treated patients can be attributed to calcium – a finding subsequently confirmed in several human experimental trials. This finding has wide-reaching implications, as the calcium content of tap water can have an impact on alcohol consumption at the local population level, and the galenic formulation of generic drugs can influence the effectiveness of a given medication.

For me, EBPS is home to international behavioral pharmacology research. The research we are doing is so critical to understanding neuropsychiatric disorders and to therapy development, but very often involves animal experimentation. Unfortunately, modern western societies are less and less in favor of using animals for research, and animal activists and new regulations make our daily work more difficult. In addition, computational scientists claim that they can model almost everything in silico. And then there is the never-ending replication crisis that often ends with the killer argument that animal research does not translate to humans. Therefore, my main activities in recent years is to work within the framework of 3Rs to 6Rs – which adds robustness, registration and reporting to replacement, reduction and refinement. One of my missions is to bring awareness of the 6R principles to the EBPS research community and thereby improve the quality of animal experimentation on all levels.

What do I do in my free time? Although I do not claim this for others, I always follow the principle *mens sana in corpore sano*. This is why I do many extreme sports and have to climb the steepest mountains, as there are so many other things in life besides living for science. The greatest joy for me came a few months ago when my grandchild Marie was born. This is in fact the greatest discovery I have made so far!

A Tribute to Dawn Eagle



IN MEMORY OF DR DAWN M EAGLE (1968-2019)

Amy Milton, Christelle Baunez, Chiara Giuliano, Nicole Horst, Rutsuko Ito, Sharon Morein-Zamir, Jenn Murray, Emma Robinson & Trevor Robbins

A symposium was organized at the last EBPS meeting as a tribute to Dawn M Eagle who passed away in 2019, just before the EBPS meeting in Braga. The symposium was focused on Dawn's major topic of research: the control of inhibition. Dawn Eagle was a brilliant scientist, a caring and generous mentor, a fiercely loyal friend and ardent supporter of other women in science. Everything she did was accomplished with excellence, attention to detail and care – and always with a sense of joy, covered with a film of dark and dry humour.

Dawn began her scientific career not as a behavioural neuroscientist, but a zoologist. Her PhD focused on the grouping behaviour of whirligig beetles, leading to many long days spent in the great outdoors. This love of the outdoors, of insects, and of the meticulous observation of behaviour, staying with her for as long as we all knew her. She moved on from the Department of Zoology to the Brain Repair Centre, where she worked with Professor Steve Dunnett, before she moved to the Department of Experimental Psychology to work with Professor Trevor Robbins in the late 1990s. It became clear in the many years that Dawn worked with Trevor that she had a phenomenal talent for working out how to measure and model analogues of human behaviour in rodents, with her name becoming synonymous with the seminal work that she carried out in the area of rodent cognition, especially the control of inhibition. She was a very strong proponent of high standards of animal welfare and inspired a great many refinements in animal behavioural procedures, both in Cambridge and further afield.

Dawn is remembered as an incredibly creative scientist and as a wonderful collaborator, mentor and friend. She was always willing to listen to others, always with good coffee and cakes. She was particularly eager to talk about the apparent lack of respect shown generally in academia for balancing work and family life – an aspect of academia that still requires reform today, but that she demonstrated was possible.

Dawn passing away in August 2019, having lived with cancer for five years, was a real shock. Because she did not want to be defined by her illness, Dawn chose not to share the full details of her cancer with her work colleagues. Up until the very end of her life, she talked about new research collaborations. She was present, without being intrusive. She continued, in her usual way, to be amazing. She is, and will continue to be, missed.

Individual differences in social play behaviour predict alcohol intake and control over alcohol seeking in rats

(Psychopharmacology, 2021)

Heidi M. B. Lesscher, Utrecht University

Play is fun and we all recognize play when we see it. But play is more than fun. Play behaviour is important for the development of brain and behaviour of a wide range of species¹. The benefits of play are thought to originate from the fact that play behaviour, and the challenges faced whilst playing, allows young mammals to experiment with their behavioural and social repertoire. As a result, play is thought to facilitate the development of social competence, emotional capacities, resilience to stressful stimuli, cognitive flexibility, creativity, and problem-solving skills, that are essential for optimal functioning in the ever-changing and challenging world.

Social play behaviour is the most prominent form of social behaviour displayed by young mammals. Disruptions of social play behaviour in rodents have been associated with cognitive deficits and aberrant social behaviour in adulthood. Moreover, social isolation during the developmental period when social play is most abundant, i.e. postnatal day 21-42, effectively depriving rats from social play behaviour, has been shown to result in enhanced sensitivity for cocaine self-administration, for cocaine-, amphetamine- and alcohol-induced conditioned place preference²⁻⁴. Also, play deprivation augmented alcohol consumption in adulthood⁵. Together, these studies suggest a critical role of social play in the development of the brain mechanisms underlying positive emotions and cognitive control, with consequences for, amongst others, reward sensitivity and addictive behaviour.

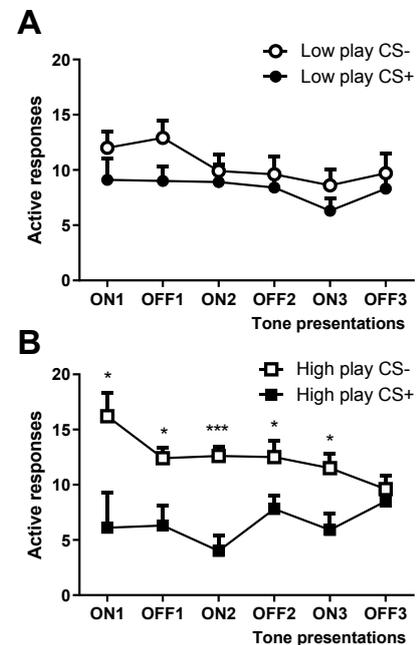
Addiction is a complex disorder, that is characterized by loss of control over substance seeking. In recent studies, we demonstrated a high degree of individual variation in alcohol consumption in Lister Hooded rats, which was paralleled by variation in the loss of control over alcohol seeking⁶. Considering that social play deprivation augments substance seeking later in life, this raised the question whether individual differences in social play would be predictive of addictive behaviour later in life.

For this study, juvenile Lister Hooded rats were characterized for their tendency to engage in social play behaviour with an unfamiliar rat on postnatal day 28/29 and 35/36. The two most important elements of social play were scored: 'pouncing' which is the attempt to nose or rub the nape of the neck of another animal that is considered solicitation for play, and 'pinning' which is defined as one animal lying on the floor with its dorsal surface and the other animal standing over it. Based on the active pounces and pins, rank scores were assigned to the animals and the extremes of the population were considered low and high playing rats, respectively. The high players made more pounces and pins than the low players, but there was no differences in the number of pounces or pins they received. Moreover, the high and low players spent a similar amount of time on social and non-social exploration.

In adulthood, the rats were given intermittent-every-other-day access to alcohol on Monday, Wednesday and Friday for 7h

each day in the first month and subsequently for 24h each day in the second month. Subsequently, the rats were trained to lever press for alcohol in operant conditioning chambers, with the ultimate aim to assess the degree of control over alcohol seeking⁶. The rats were initially trained on a Fixed Ratio 1 (FR1) schedule of reinforcement, and subsequently on random interval (RI) schedules of reinforcement (RI5 to RI120). Once stable responding for alcohol was achieved, we assessed conditioned suppression of alcohol seeking⁶. For that purpose, half of the rats underwent fear conditioning, with conditioned stimulus (CS)-footshock pairings (CS+), and the other half underwent control conditioning (CS-) in physically distinct conditioning chambers.

Alcohol seeking during the conditioned suppression test was subsequently examined in extinction, i.e. responding on the levers was recorded, but had no programmed consequences. Two-minute intervals in which the tone CS was presented (CS-ON interval) were alternated with two-minute intervals where the tone CS was absent (CS-OFF interval). We recorded the number of active lever presses and the latency to the first lever press, which were compared for CS- and CS+ subgroups as a measure for control over alcohol seeking.



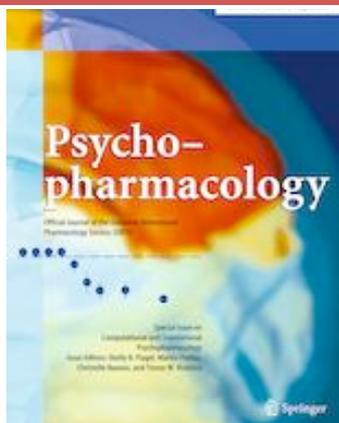
Conditioned suppression of alcohol seeking in low (A) and high (A) playing rats after 8 weeks of intermittent alcohol consumption. While the high players show conditioned suppression of alcohol seeking, the low players do not adjust their alcohol seeking upon presentation of the tone CS, indicative of loss of control over alcohol seeking. Significance differences between CS- and CS+ subgroups are indicated by * and *** ($P < 0.05$, $P < 0.001$, respectively). [Source](#)

The main finding of this study is that juvenile play behaviour predicts alcohol consumption and the degree of control over alcohol seeking in adulthood. Rats that played most consumed more alcohol ($3,74 \pm 0,37$ vs $2,94 \pm 0,37$ g/kg/24h). However, the high players suppressed their alcohol seeking in the face of adversity while the low players showed resistance to conditioned suppression of alcohol seeking, indicative of loss of control over alcohol seeking. Conditioned freezing behaviour was comparable for the low and high players, suggesting that the differences in conditioned suppression in this study are not due to differences in fear conditioning, but are rather attributable to differential decision making with regards to seeking alcohol under adverse circumstances.

These findings provide novel evidence for an important role of social play behaviour in the development of the brain mechanisms underlying - resilience to - alcohol use and AUD.

1. Spinka M, Newberry RC, Bekoff M (2001) Mammalian play: training for the unexpected. *Q Rev Biol* 76:141-168.
2. Baarendse PJ, Limpens JH, Vanderschuren LJMJ (2014) Disrupted social development enhances the motivation for cocaine in rats. *Psychopharmacology* 231:1695-1704.
3. Whitaker LR, Degoulet M, Morikawa H (2013) Social deprivation enhances VTA synaptic plasticity and drug-induced contextual learning.
4. Walker DM, Zhao X, Ramakrishnan A, Cates HM, Cunningham AM, Pena CJ, Bagot RC, Issler O, Van der Zee Y, Lipschultz AP, Godino A, Browne CJ, Hodes GE, Parise EM, Torres-Berrio A, Kennedy PJ, Shen L, Zhang B, Nestler EJ (2020) Adolescent Social Isolation Reprograms the Medial Amygdala: Transcriptome and Sex Differences in Reward.
5. Lesscher HMB, Spoelder M, Rotte MD, Janssen MJ, Hesselings P, Lozeman-van 't Klooster JG, Baars AM, Vanderschuren LJMJ (2015) Early social isolation augments alcohol consumption in rats. *Behavioural pharmacology* 26:673-680.
6. Spoelder M, Pol S, Janssen BSG, Baars AM, Vanderschuren LJMJ, Lesscher HMB (2017) Loss of control over alcohol seeking in rats depends on individual vulnerability and duration of alcohol consumption experience. *Behav Pharmacol* 28:334-344.

Journal News



As EBPS members, we would like to remind you that you are entitled to free access to *Psychopharmacology* as well as the *European Journal of Neuroscience* via your personal pages on the EBPS website.

Psychopharmacology call for contributions for a special issue on "Nature vs Nurture in Addiction Research".

The genesis of the topic was a session at the EBPS meeting in Portugal in 2019 focused on longitudinal imaging in animals and humans exposed to psychostimulants, but this issue welcomes articles or reviews on any drug of abuse, including ethanol. Papers should address either issues of vulnerability, or chronic effects that inform cross-sectional clinical comparisons. Our deadline for [submission](#) has been extended.

Guest editors: [Charles Bradberry](#), [Christelle Baunez](#)

European Journal of Neuroscience call for contributions for a special issue on "Alzheimer's Disease and Related Dementias: From Risk Factors to Disease Pathogenesis."

This special issue aims to gather contributions illustrating recent research advances in Alzheimer's disease and related dementias with a focus on understanding the links between risk factors and neurobiological changes in disease. [Submission deadline is October 31, 2021.](#)

Guest editors:

[Michael O'Banion](#), [Anton Porsteinsson](#), [Srikant Rangaraju](#), [Tara Spire-Jones](#).

FENS Calendar

17th Austrian Neuroscience Association Annual Meeting

28-30/9/2021, In-person, [Link](#)

EMBO Workshop:

Axons: Structure & Function

4-7/10/2021, Hybrid, [Link](#)

34th ECNP Congress

2-5/10/21, Hybrid, [Link](#)

From Molecular Insights to Patient Stratification for Neurological and Psychiatric Disorders: A Workshop

5-6/10/2021, Virtual, [Link](#)

29th Meeting of the Hellenic Society for Neuroscience

8-10/10/2021, Virtual, [Link](#)

Human Brain Project Summit

12-15/10/2021, Virtual, [Link](#)

Brain States - Danish Society of Neuroscience

13-14/10/2021, In-person, [Link](#)

19th Meeting of the Spanish Society for Neuroscience

3-5/11/2021, In-person, [Link](#)

Meeting of the Neuroscience Society of Turkey

7-9/11/2021, Virtual, [Link](#)

13th Conference of the Czech Neuroscience Society

24-25/11/2021, In-person, [Link](#)

Is your membership current?

Just a reminder to check that your membership is current and if not, please renew [here](#). Full membership remains at €70 and the student fee at only €15. The benefits are numerous and include discounted registration at this year's Braga conference!

EBPS Committee

Executive Committee:

- President - Yavin Shaham (US)
- President Elect - Shelly Fligel (US)
- Past President - Louk Vanderschuren (NL)
- General Secretary - Amy Milton (UK)
- Treasurer - Mohammed Shoaib (UK)
- Meeting Secretary - Rainer Spanagel (DE)
- Past Meeting Secretary - Rudy Schreiber (NL)

Ex-Officio:

Psychopharmacology Rep - Christelle Baunez (FR)

Full Committee:

- Gavan McNally (AU)
- Daniele Caprioli (IT)
- Veronique Deroche (FR)
- Michela Marinelli (US)
- Markus Heilig (FI)
- Karen Szumlinksi (US)
- Anand Gururajan (AU)