ECNP
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ECNP DAILY NEWS

Welcome to the 25th ECNP Congress

Do you still remember being 25 years old? The energy, the enthusiasm, the plans, the feeling that you will change the world?

ECNP, in its 25th anniversary, is at this stage: having a fresh look with the conviction that although tradition is a cornerstone, changes and adaptation are important as well.

This year's meeting will continue the 5-track system:

- Treatment track (CT): evidence-based treatment
- Clinical research track (CR): clinical research issues
- Interface track (PC): link between preclinical and clinical research
- Preclinical track (P): preclinical research
- Educational track (E)

Thus, at each given time you have five parallel sessions. Exceptions are only on three occasions; the plenary, the posters and the general assembly. This year, as part of the "changes and adaptations", new features are taking place, which include:

Scientific content in the keynote session. In yesterday's keynote session the focus moved away from entertainment (which remained, but to a lesser degree) to science, with Colin Blakemore (UK) delivering his 30-minute keynote lecture on "The plastic brain". The gastronomic part remained (even being boosted a little). Overall, it was a very exciting keynote session composed of science, gastronomy, entertainment and mingling which we hope you very much enjoyed.

Scientific cafés. These topic-focused informal gatherings will allow participants sharing a common interest to network and collaborate. 15 topics have been identified, five per day (Sunday, Monday and Tuesday) from 4.10pm onwards, including Anxiety, Neurodegenerative disorders, DBS and other physical interventions, Biomarkers, Social anxiety, Depression, Bipolar, Addiction, Stress, Child and adolescent, Psychoneuroimmunology, New neurobiological targets, Suicide, Schizophrenia, and Diagnosis. The cafés will be held in the foyers outside the session rooms, and will be accompanied by drinks and finger food. My feeling is that these will provide one of the most relevant outcomes of the meeting, if not the best one.

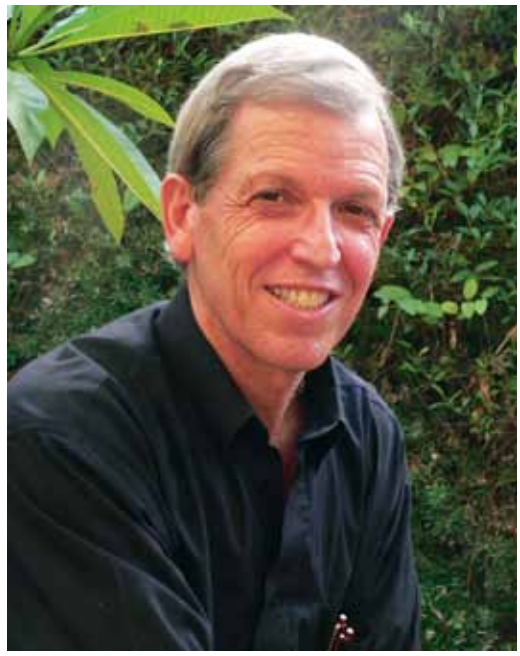
More plenary sessions. This meeting will host six plenaries, more than ever before, including lectures on 'Pharma and the future of drug discovery' (Ruth McKernan, UK), 'Disruptive innovations in clinical neuroscience' (Thomas R. Insel, USA), 'Operational principles of inhibitory circuits in the cerebral cortex' (Tamás Freund, HU), 'Opioid systems: probing molecular processes of brain function' (Brigitte L. Kieffer, FR), and two plenary sessions reserved for lectures from the recipients of the ECNP Neuropsychopharmacology Award – 'Neural mechanisms of risk for psychiatric disorders' (Andreas Meyer-Lindenberg) and 'Schizophrenia: from pathophysiological understanding to novel treatments' (Paul J. Harrison, UK).

An expanded educational track. This year, the number of educational sessions has been increased to seven, with an extra session added on Wednesday (17 October) morning. These fun, interactive sessions offer up-to-date, cutting-edge, balanced information, and, via interactive pad systems, the audience can respond.

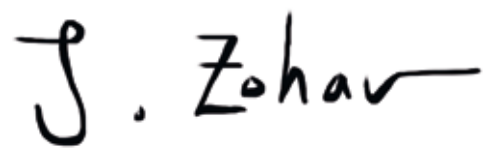
The ECNP dinner. This has been moved from the Monday to the Tuesday (16 October), to allow more free time for networking.

Four noteworthy activities to strengthen the ECNP community are:

- Members' lounge
- Breakfasts for members with the president and other members of the Executive Committee
- Breakfast for Young Researchers with the president, members of the Executive Committee and other distinguished scientists
- Use of social media – twitter: @ECNPtweets and facebook: European College of Neuropsychopharmacology



So, thanks for joining us, enjoy the 25th anniversary meeting, and welcome to Vienna.



Joseph Zohar President of ECNP

Introducing *your* congress newspaper...

On this landmark anniversary it is with great pride that we announce the pioneering voyage of *ECNP Daily News*: the official congress newspaper.

Inside these pages you will find a mixture of interviews, previews and live reports that aim to capture the whole spectrum, and spirit, of the congress. Spread over three daily issues – today, tomorrow and Tuesday – the paper offers a chance to delve a little deeper into topics and sessions that interest you the most, hear views and research reports direct from experts in the field and catch up on any highlights you may have missed in person.

We hope you find this new venture engaging, enlightening and entertaining, and we wish you an informative and inspirational congress.

Neural mechanisms of risk for psychiatric disorders Sunday 14 October 13.30 **Hall D**

2012 ECNP Neuropsychopharmacology Award Lecture

Mechanisms of neural risk offer hope for therapy and prevention

A plenary lecture that will discuss the neural mechanisms of risk in psychiatric disorders will take place this afternoon, marking the first of two lectures in the ECNP programme that will be delivered by 2012 ECNP Neuropsychopharmacology Award winners.

ECNP Neuropsychopharmacology Award recognises innovative and distinguished research achievements in neuropsychopharmacology and closely related disciplines. Amongst other prizes, the recipients of the award are invited to present a plenary lecture at the ECNP Congress, as well as the submission of a review article for publication in *European Neuropsychopharmacology*.

Joint-recipient of the award Andreas Meyer-Lindenberg, Director of the Central Institute of Mental Health, Mannheim, Germany, spoke to *ECNP Daily News* ahead of his lecture to give a preview of what he hopes to address.

"There is a research tradition to look at patients with mental illness and try and figure out what's wrong in their brain – using a variety of technologies such as brain imaging, for example," he said. "What I propose to do in this talk instead is to not look at mental illness per se, but the things that increase your risk of having a mental illness. Or, if you flip it around, by their absence, those that decrease your risk."

Specifically, Professor Meyer-Lindenberg will focus on both genetic and environmental risk factors – and their influence on psychiatric disorders. "Some are very heritable, such as schizophrenia, autism or bipolar disorder," he said. "In some the environment is a much bigger contribution, for example in depression and anxiety disorders."

He continued: "What I propose is that we can learn about the risk for illness by looking at how given genetic and environmental risk factors that have been identified work in the brain."

As such, this kind of strategy would involve shifting focus to look at control groups who carry a given genetic risk factor, or those that have been exposed to environmental risks. "What we try to get in the end is a neural risk architecture of mental illness which we hope will then be a scaffold for better therapy and prevention," said Professor Meyer-Lindenberg.

"Many mental illnesses become symptomatic at a given point in time, but we know something is going on long before. By way of example, schizophrenia starts at around puberty, usually (or in the decade thereafter), but we know abnormalities are discernible in retrospect since early childhood. So from the point of view of therapy, it may be that if we start treating schizophrenia only when people become psychotic, we're missing out all chance of primary intervention, and we also might be too late in treatment."

Andreas Meyer-Lindenberg

> *"What I propose is that we can learn about the risk for illness by looking at how a given genetic risk factor that has been identified works in the brain, and how given environmental risk factors that have been identified work in the brain."*
>
> *Andreas Meyer-Lindenberg (Central Institute of Mental Health, Mannheim, Germany).*

Drawing parallels to the treatment of cardiovascular disease, Professor Meyer-Lindenberg added that this kind of approach would be, in effect, like waiting for a myocardial infarction before treating the underlying cardiovascular risk factors that may have prevented the event from occurring at all. "We need to figure out is what is the psychiatric equivalent... figure it out, and then devise treatment and prevention strategies that target these mechanisms before the illness manifests itself," he said.

As such, does Professor Meyer-Lindenberg see these strategies transposing to a more individualised, 'personalised medicine' approach for each patient? "I would take better therapies in whatever shape, size or form they come in," he replied.

"I would take a therapy that works well for a lot of people indiscriminately, but that is not necessarily on the horizon. I think many improved therapies, as you suggest, will come from better understanding and individual risk configuration. So that would be a way of arriving at personalised therapy."

Professor Meyer-Lindenberg stressed that, should we move into more preventative care, generalised strategies will also likely have their place. "To give you a specific example, we published a paper in *Nature* last year showing that city life, specifically a city birth, has an effect on brain function that can be linked to risks of schizophrenia," he said. "So the question is how do we restructure city life to try and minimise that effect on brain function?"

He continued: "It might be something like reducing the density of people living in the city through urban planning, or increasing the amount of green space. And that would then be a preventive measure that would be rather general. But on the other side of the equation you could see a situation (and we will discuss this in the talk) in which we find some rare – but for those people who have them – very relevant genetic mutations.

"If you are one of the very few people who do carry one of these copy-number variant mutations your risk of schizophrenia is actually going to be quite elevated, and you might want to have a conversation with your physician about preventive drug treatment."

ECNP Neuropsychopharmacology Award lecture: 'Neural mechanisms of risk for psychiatric disorders'; Sunday 14 October, 13.30, Hall D.

ECNP Daily News

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ECNP interventions hope to address Europe

A number of new measures that hope to offer protection from the floundering research within pharmaceutical ('pharma') companies will form a critical component of the ECNP as it reaches its 25-year milestone. "It is a very convulsive time, and we've had a situation since 2010 that several of the big pharmaceutical companies doing research in this area have significantly reconfigured their operations," Alexander Schubert (Executive Director of ECNP, Utrecht, the Netherlands) told *ECNP Daily News*. "This is a major, major tectonic shift in the way pharma is being organised, and it has effects for neuroscience in Europe."

To address the changes in the research infrastructure, ECNP has taken the lead in helping clear a path forward. "As far as I can tell, ECNP is the only European organization that is really trying to generate discussion, and trying to understand what's going on and why," said Dr Schubert. "We have a couple of initiatives: One of which is the Medicines Chest, which is designed to ensure that compounds that were shelved before being fully developed (for which there is a lot of documentation, may have been tested in humans and may still have all sorts of medicinal potential) are not lost. So this is one initiative to try and find a way of brokering access to those compounds for research scientists at the universities and institutions."

"The other initiative is very similar, but it involves clinical data, patient data, that

Plenary Lecture: Pharma and the future of drug discovery Sunday 14 October 11:00 **Hall D**

The future directions of pharma

Today's programme will feature a plenary lecture that will offer delegates the chance to witness expertise and insight from a speaker who is at the forefront of the current and future perspectives of the pharmaceutical industry.


Ruth McKernan

The lecture will be given by Ruth McKernan, Senior Vice President of Pfizer and Chief Scientific officer at Pfizer's Research Unit Neusentis, Cambridge, UK. Professor McKernan is a prolific contributor to the neuroscience field, both in journals and in non-science publishing, her book Billy's Halo earning her a nomination for the 2007 MIND awards.

Speaking to *ECNP Daily News*, Professor McKernan began by discussing the industry changes that have had to be made to move research into an area of biotechnological and academic excellence: "That is quite a major upheaval, and quite a major change in the way in which we operate," she said.

"That, I think, is an acknowledgement that most of the research really goes on in universities and small companies, and we operate very differently from the way we did before where we had really large sites with all of our research and development consolidated there, and in pharma we expect to do really the minimum of research ourselves, and much more of what we do is done via partnerships."

These partnerships form an important part of the pharmaceutical industry, especially for the challenging arena that is neuroscience: "Drugs that work in the brain, that are selective, are very difficult to make, and when safety hurdles are high, that challenge is much higher than making drugs that work only in the periphery," said Professor McKernan.

She added that antibody-based therapeutics are not generally the first point of call for these types of applications, even though areas such as Alzheimer's disease have been exposed to a great deal of testing.

> *"What has neuroscience got going for it? What are the opportunities where we can begin to get some leverage, because I'm not unoptimistic about the future for neuroscience, but we have to make the best of what's available."*
>
> *Ruth McKernan (Neusentis, Cambridge, UK)*

Professor McKernan continued to stress that, while somewhat of a revolution in genetics has been witnessed for cancer therapies, this kind of 'precision medicine' is only beginning to emerge in other areas. She said: "There is a tantalising hope that precision medicine based on mechanisms that are involved in neurotransmission might have value in different patient populations for psychiatric disease, but by and large I think we have to say that the human genome hasn't done a huge amount for new drugs for CNS [central nervous system] indications. Not yet."

One shortfall in this respect is that many genes only contribute a small amount in psychiatry, with neuroscience being at the 'tough' end of the spectrum. "What has neuroscience got going for it?" said Professor McKernan. "What are the opportunities where we can begin to get some leverage, because I'm not unoptimistic about the future for neuroscience, but we have to make the best of what's available."

Professor McKernan added that she believed there was some potential value in using induced pluripotent stem (IPS) cells in understanding the biology in neurodegenerative (and possibly psychiatric) disease, because it would possibly allow some illumination as to the mechanisms in cells where we can get action potentials. "Really we're looking at targets in their much more natural functioning environment, [and this] has been very poor in neuroscience really up to this point," she said.

"I'll probably show some data on our own pain work where we've made embryonic cells into sensory neurons, and we have some really nice functional sensory neurons that respond to drugs in the appropriate way, and I'll talk about making cells from patients with different genetic backgrounds."

Echoing a shift in thinking that many other speakers seem to share, Professor McKernan also emphasised that a move away from animal models should be encouraged. "The brain is so plastic, and animal models haven't helped us as much as we had hoped," she said.

"There is a limit to what you can learn from the biology in a rodent or even a primate, but the quality of information that you can get from human volunteers is massive when compared to an animal model. So I think a lot more experimental medicine is called for, and understanding the spectrum of psychiatric disease, and what we can learn from people who may have some minor psychiatric indication but who manage very well with it."

In her closing remarks to *ECNP Daily News*, Professor McKernan accentuated the benefits that information technology (IT) and computer-based analysis could have in the exploration of the mind – an ace card which other areas of therapeutical discovery cannot play. "Our advances in IT could in fact enable development of new therapies for psychiatry, and we need to think quite differently about treating psychiatric and neurological patients," she said. "And maybe the small molecule or the antibody, or even the cell therapy isn't the right treatment, or isn't the only treatment."

Professor McKernan will deliver her plenary lecture 'Pharma and the future of drug discovery' at 11:00 this morning in Hall D.

Continued on page 4

ean research shift

pharma may be holding that is no longer

relevant to them, but may be very useful to scientists."

He added: "Those are two ways in which we are trying to work to support the European research base. And the majority of research funding in the field ultimately comes from pharma, so this will require a significant adjustment to how research is organized in Europe."

Along with the initiatives, the ECNP has scheduled organized discussions with the pharmaceutical industry, harnessing both the ECNP reputation and population of experts in order to work towards a solution. "We have been trying to create some discussion around this to get the relevant players together, because they do have reasons why they are pulling out which need to be addressed," said Dr Schubert. "We need to get all the stakeholders together to talk this through and maybe map out some kind of longterm blueprint. And there will be a closed meeting in Vienna as part of the congress that will be a follow-up of a meeting we had last year... but I think there will be some solutions."

> *"As far as I can tell, ECNP is the only European organisation that is really trying to generate discussion, and trying to understand what's going on and why"*
>
> *Alexander Schubert (Executive Director of ECNP, Utrecht, The Netherlands)*

Crucially, these forward-thinking measures have great importance in guarantying that the next 25 years of European neuroscience are just as productive as the last.

How to predict and treat suicidal behaviour Hall F2 Sunday 14 October **14.30**

Foreseeing suicidal risk in mental disorders

Sunday afternoon plays host to an educational update session that will examine how to predict and treat suicidal behaviour in both schizophrenic patients and those with mood disorders. "Certainly in western countries we know that the commonest cause of suicide is an untreated mood disorder, "John Mann (Colombia University Medical Center, New York, USA) told *ECNP Daily News* ahead of his presentation.

While better training of clinicians in the diagnosis and treatment of mood disorders is one way to try and prevent suicide, Dr Mann added that a second tier of prevention stems from newer approaches, most notably the so-called 'diathesis-stress model'.

This model takes into account the inherent way in which an individual reacts to extrinsic stimuli, i.e. his or her susceptibility to certain disease types, and factors in environmental stressors that may exacerbate symptoms.[1] "In other words, people with mood disorders fall into two main groups: Those that also have a propensity towards suicidal behaviour, and those that seem to be relatively resilient in terms of the risk of suicidal behaviour," continued Dr Mann.

He added that, when coupled to the knowledge that suicide does not typically stem from extended periods of 'wear and tear', and in fact manifests itself early within an episode of depression, the predisposition offers the clinician an opportunity to understand who is a greater risk or a lesser risk and intervene early.

"We've identified a number of clinical features that suggest how one can do that," said Dr Mann. "For example, the most obvious one is just ask the person whether they've ever made a suicide attempt because anyone who's made a suicide attempt has anywhere from 20 to 50-fold greater risk of future suicide."

John Mann

> *"People with mood disorders fall into two main groups: Those that also have a proneness towards suicidal behaviour, and those that seem to be relatively resilient in terms of the risk of suicidal behaviour."*
>
> *John Mann (Colombia University Medical Center, New York, USA)*

As a logical extension to this, character traits such as pessimism, difficulty in seeing a way out of personal crisis and aggressive impulsive tendencies should all be factored in. "You can see how these different characteristics triangulate to increase the risk for suicidal behaviour," said Dr Mann.

Moving on to discuss the treatment options for suicidal patients, Dr Mann reiterated that, to begin with, treating the underlying depression will have a knock-on effect on reducing suicide risk. "But over and above that there are also things that one can do to actually ameliorate the diathesis or predisposition of this suicidal behaviour," he added.

"For example, cognitive therapy is a type of therapy that addresses how people react to their illness, how they deal with negative thoughts, helps them with problem solving and so on and so forth. So cognitive therapy has a anti-suicidal effect."

In addition, substances such as lithium and ketamine are also showing promise in the suppression of suicidal tendencies: "We don't fully understand all of the ways in which lithium may have an anti-suicidal effect... but we do see that there is some evidence that lithium both reduces the risk of suicide," said Dr Mann.

He added: "People have tried [ketamine] actually in the emergency room, giving it to suicidal patients in a very low dose and, for many of them, it reduced their depression and suicidal ideation. We know that this efficacy lasts for five to seven days, so it gives the clinical services a few days to get organised to get the patient into treatment."

Looking to the future, Dr Mann referred to emerging data on brain abnormalities that show promise as predictive markers of suicide. He said: "We did a set of studies on the brain of people who died by suicide, and we found [a] pattern of biological abnormalities, most specifically the role of this neurotransmitter serotonin on the decision making areas of the brain, which showed changes or abnormalities of people who died by suicide, independent of whether they had a depressive illness or not."

As such, Dr Mann was hopeful that some time in the future we may possess the ability to scan for abnormalities that predispose towards suicidal risk, greatly enhancing the diagnostic power for the clinician.

Dr Mann will give his presentation as part of the session 'How to predict and treat suicidal behaviour, 14.30, Sunday 14 October, Hall F2. The presentation will feature alongside Mark Taylor's discussion of suicidal behaviour in schizophrenia, as well as opening and closing remarks from co-chairs Philippe Courtet and Danuta Wasserman.

References

1) J J Mann, *Neurobiology of Suicidal Behaviour*. Nature Reviews – Neuroscience 2003; 4: 819-828.

Continued from page 3

Adding her thoughts about the ECNP meetings was Ruth McKernan (Senior Vice President of Pfizer and Chief Scientific officer at Pfizer's Research Unit Neusentis, Cambridge, UK), who will be representing the pharmaceutical industry during the discussions.

She began: "I'm not sure where those discussions are going to go. I wouldn't want to pre-empt it, but what I would say is there is already a high degree of interaction between academics and people in small and large companies, and that is supported and helped by some of the changes in the way that the UK and other parts of Europe view partnerships now.

"Things like the European Innovative Medicines Initiative I think have really enabled a kind of cross-fertilisation of science. The one change I would ask for, and I'm seeing a lot, is – you know a few years ago pharma was regarded as a kind of grant-awarding body. We would give money to the academic researchers whose work we admired to just do some work, and those days are long gone. And actually what we're seeing much more is [co-application]."

This co-application relies on both the pharmaceutical partner and academics performing a share of the work, and Professor McKernan stressed that this change in working is something that has real potential as a springboard for the way we proceed in the future. "Obviously everybody is suffering from a lack of funds, so we can't afford to replicate things; we have to work in partnership and that's true for pharma, it's true for academia," she said.

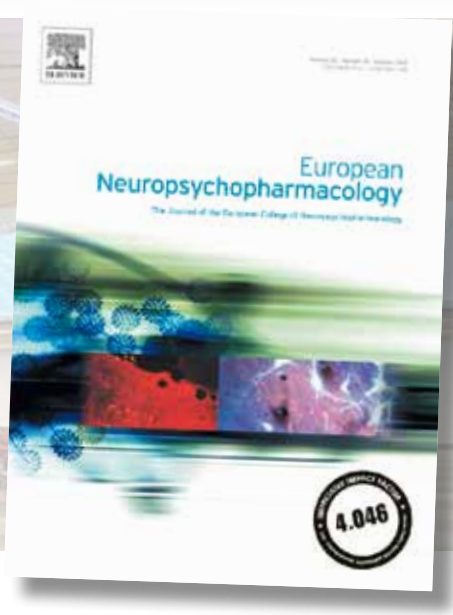
"I think anything more we can do in that space is to be welcomed. I'm not sure what other people will say [in the meeting]. I just don't think pharma can give up on neuroscience, because the unmet need is huge. But we just need some new grip, a new hold in kind of scaling the mountain really, and I think they are emerging. I'm always very positive about the science that's coming through."

Meet the editor sessions

On Sunday, Monday and Tuesday afternoons from 14:15 -14:45, delegates will get the chance to meet with an editor of the ECNP journal, *European Neuropsychopharmacology*. These informal sessions,
taking place in the ECNP Plaza, will be chance to meet, discuss and learn from the editing staff of the esteemed publication.

Today's representative will be Editor-in-Chief Michael Davidson (Professor and Chairman, Department of Psychiatry, Tel Aviv University, Israel).

Monday will see 2012 Neuropsychopharmacology award winner Andreas Meyer-Lindenberg Director of the Central Institute of Mental Health, Mannheim, Germany) take the reins, with Tamara Lucas (Elsevier, Oxford, UK) hosting Tuesday's final session.



Does nosology follow scientific evidence or does evidence follow nosology? Hall E Sunday 14 October **09:00**

A matter of nosology in mental disorders

A session that will question whether scientific evidence follows nosology, or vice versa, in the classification and treatment of several mental disorders will take place this morning at ECNP. Discussing this question within the specific framework of bipolar disorder and borderline personality disorder will be Eduard Vieta (Department of Psychiatry, University of Barcelona, Spain), who spoke to *ECNP Daily News* to give his insights on this matter, as well as taking a closer look at the subtle overlaps of both disorders.

Professor Vieta began by suggesting that, for these disorders, nosology and evidence do not necessarily have a defined place in respect to which comes first. "Neither evidence follows nosology, nor does noslogy follow evidence," he said. "They go in parallel – in the same direction – which is a good thing, but unfortunately, ideally what you would like is nosology to follow evidence."

Crucially, Professor Vieta added, the origins of both of the disorders are different. Bipolar disorder harks back to ancient Greece, with a great deal of modern understanding creditied to 19th century German psychiatrist Emil Kraepelin.

These are somewhat different beginnings to that of borderline personality disorder, the concept of which Professor Vieta added "comes from the psychoanalysis arena, and initially it was aimed at describing patients who were in between the old concepts of neurosis and psychosis."

> *"Neither evidence follows nosology, nor does nosology follow evidence. They go in parallel – in the same direction – which is a good thing, but unfortunately, ideally what you would like is nosology to follow evidence."*
>
> *Eduard Vieta (Department of Psychiatry, University of Barcelona, Spain)*

Ultimately, both disorders have some overlapping criteria, which Professor Vieta said was partly to blame for misdiagnoses: "The problem is that in psychiatry we are actually talking about syndromes, not necessarily true entities, and there is an unavoidable overlap because the way the brains expresses itself," he said.

"There are a limited number of ways for the expression of suffering: anxiety, depression, psychosis etc. So most conditions end up in common pathways which are expressed as psychopathology. There will always be some overlap. People with schizophrenia may have anxiety, it doesn't mean that they have schizophrenia plus anxiety disorder. So the only way to better extract or make sure what we diagnose is not just a phenomena is to do research."

Professor Vieta continued to say that within the previously published third edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-3), there was a misbelief that psychopathology was no longer relevant: "The problem was it was untrue," he said.

The fifth edition of the DSM (DSM-5), due for publication in 2013, is hoped to offer better classification power, and Professor Vieta will show some early data from DSM-5 trials in his talk at ECNP. "We've got positive data on patients who have both conditions," he said.

Eduard Vieta

He continued: "What I'll show also is some biological data as well. Some neuroimaging data, some biomarkers, and then finally some issues around treatment. And one of the important take home messages again is not to be nihilistic with the patients who have comorbidity because these are the most difficult to treat."

Professor Vieta will deliver his presentation 'Bipolar disorder and borderline personality disorder' as part of the session 'Does nosology follow scientific evidence or does evidence follow nosology?'; 09:00, Sunday 14 October, Hall E.

Young Scientists symposium: New insights Sunday 14 October 14:30 **Hall F1**

Taking a cue from attentional bias in nicotine addiction

A presentation that will focus on recent research[1] into dopamine antagonists and their role in brain activation associated with attentional bias will be delivered to delegates this afternoon during a session dedicated to the work of younger scientists at ECNP.

Attentional bias is based on a conditioning model where addicted individuals, in this case smokers, experience dopamine release at visual cues associated with smoking. This bias is known to enhance attentional processing of substance related cues and has implications for both relapse and the ability to give up smoking in addicted individuals.

"Although the theory about the role of dopamine in attentional bias is well known, it has not been extensively tested in humans whether dopamine release is indeed modulating brain activation associated with attentional bias," Maartje Luijten (Institute of Psychology, Erasmus University, Rotterdam, the Netherlands) told *ECNP Daily News* ahead of her presentation in the young scientists session.

In the current study, Ms Luijten and her colleagues developed a test paradigm that investigated whether a dopamine antagonist, in this case haloperidol, could attenuate brain activation associated with attentional bias. In an experiment using visual cues with either smoking or non-smoking related content, it was hypothesised that smokers would have normalised reactions to smoking cues when haloperidol was administered. "That is in line with the theory that if dopamine release is blocked then the salience of these cues is not detected, or at least not to the same extent," said Ms Luijten.

Results confirmed this hypothesis, with smokers exhibiting enhanced brain activation compared with controls (non smokers) after placebo in the dorsal anterior cingulate cortex (dACC), right dorsolateral prefrontal cortex (r-DLPFC) and left superior parietal lobe (l-SPL).[1] While no group differences were found after haloperidol. These

Maartje Luijten

results suggest that, in line with the theory, haloperidol indeed normalised attentional bias related brain activation in smokers. However, there was also a reduction in overall cognitive performance in all subjects after haloperidol administration.

"Overall task performance was decreased after haloperidol administration, and also brain activation that was not specific for attentional bias was decreased," Ms Luijten explained. "It seems that we can kind of normalise the brain activation associated with attentional bias, but at the same time cognitive control seems to be reduced after a dopamine antagonist."

She added: "You've got this balance in addiction which suggests that there is too much motivation for everything that is associated with the addiction, while at the same time behavioural control is reduced, so this dopamine antagonist may reduce the motivation for the drug-related cues, but it may also decrease the control... I think it's a huge challenge to develop medications or other treatments that restore the balance between motivational aspects of addiction and behavioural control."

Bearing the outcomes of these data in mind, Ms Luijten was keen to outline what the next steps of the research could be, beginning by stressing that cognitive training or cognitive enhancement medication could be interesting to investigate in this setting: "By doing that we should always investigate both the motivational and control aspects of the addiction," she said.

Ms Luijten continued, referring to unanswered questions that surround the mechanisms of action of existing medications for smoking addiction, such as varenicline: "I'm wondering whether these types of medications also have an effect on attentional bias," she said. "In the current study we used haloperidol to provide a proof of principle for the theory of attentional bias and not to investigate therapeutic effects."

She continued: "If we could do similar kinds of experiments with medications that are currently prescribed for smoking, and see how attentional bias is possibly changed, we could detect individual differences between smokers in their reaction to the medication such that we can identify individuals who may have more beneficial effects from the medications."

Ms Luijten will deliver her presentation 'Brain activation associated with attentional bias in smokers is modulated by a dopamine antagonist' during the young scientists symposium 'New insights into major and bipolar depression: mood, cognition and pain'; 14:30, Sunday 14 October, Hall F1.

References

1) M Luijten et al. Brain Activation Associated with Attentional Bias in Smokers is Modulated by a Dopamine Antagonist. Neuropsychopharmacology, 2012 (Advanced copy ahead of print. Accessed September 2012).

Are there relevant biomarkers of bipolar disorder? Sunday 14 October 14:30 **Hall E**

In search of the bipolar fingerprint

Identifying biomarkers to improve clinical diagnostic certainty in bipolar disorder is a key target in current research, delegates will hear in a dedicated session on the topic this afternoon. Session co-chair Erkki Isometsä (Professor of Psychiatry, University of Helsinki, Finland) spoke to *ECNP Daily News* about the need to distinguish bipolar disorder and its subtypes in order to improve clinical therapies.

The distinction between unipolar depression and a depressive episode as part of the course of bipolar disorder is not yet clear cut; however, misdiagnoses of unipolar depression can exacerbate bipolar disorder. Investigating these differences is of growing interest in various neuroscientific disciplines, but identifying methods that translate to clinical usefulness is crucial, as Professor Isometsä explained: "From the clinical perspective, we need to assess the markers being produced by basic research to determine whether or not they are useful in the clinical context. That is the objective of the correspondence between researchers and clinicians."

> *"We are dealing with a complex disorder, whose aetiology and pathophysiology are complex. As such, multi-omics is a way of tackling this complexity."*
>
> *Erkki Isometsä (Professor of Psychiatry, University of Helsinki, Finland)*

Defining the boundaries between bipolar and other psychiatric disorders could also translate to its earlier diagnosis, significant because patients treated in the early stages of the disorder tend to have better prognoses than those identified later on in the course of their progression. The staging concept is thought to be a potentially useful method by which the dynamic course of the illness, defined by features such as multiple symptom factors, symptom severity and cognitive impairment, could be measured in order to classify and predict disorder subtypes.

This could prove to be highly useful in a clinical setting, especially considering the broad range of functional outcomes that occur in patients. Professor Isometsä described why identifying the individual course and the stage of the disease is so important: "Going through earlier phases of bipolar disorder could leave a scar, and being ill repeatedly might transform some aspects of the central nervous system as well. This suggests that there would be changes in aspects of brain function due to the fact that someone has been suffering from the illness. This is something that is very difficult to investigate; it requires longitudinal studies."

As a method of gaining a more holistic picture of bipolar disorder and its particularly heterogeneous, dynamic nature, the multi-omics approach has gained much support across the neuropsychopharmacology community. Professor Isometsä summarised the concept, saying: "The basic idea is to look for some kind of metabolic fingerprint – not just a single marker, but a profile of multiple markers to describe complex gene-environment interactions."

Speaking of its relevance in defining conditions such as bipolar disorder, as well as in understanding regular variations in the brain, he continued: "We are dealing with a complex disorder, whose aetiology and pathophysiology are complex. As such, multi-omics is a way of tackling this complexity; Sabine Bahn will be presenting data on this fairly new and exciting topic."

Building a probabilistic profile of bipolar disorder by combining biomarkers and clinical indications could greatly improve clinical diagnostics and treatment outcomes. Although very much in its infancy, it shows clear promise for future clinical use, as Professor Isometsä concludes: "We don't yet have decent markers to help us, but when we do they will help us to understand many aspects of the illness, such as whether or not it is progressing, as well as helping to identify it earlier in its course."

Erkki Isometsä

The true unmet needs in the therapeutic armamentarium Tuesday 16 October 09:00 **Hall F2**

New advances in the treatment of alcohol dependence

Novel approaches are revolutionising the way in which patients are treated for alcohol dependence, delegates will hear on Tuesday morning at ECNP Congress. "That is not only new insights because of research, it's really a modification of clinical practise," Philip Gorwood (Hospital Sainte-Anne, Paris Descartes University, France) told *ECNP Daily News* ahead of his presentation on the topic.

One important shift in treatment is the path taken to abstinence, as Professor Gorwood explained: "I would say that around 70 or 80% of patients who are getting a first visit... have great difficulty in their capacities to say 'Now I want to stop'.

"They say 'Yes, I might have a problem, but I'm not ready to have a full giving up of my habits with alcohol'. So usually with these patients we are trying to increase their insight, and reduce the ambivalence about alcohol, and then at the end of the day trying to get them to have the conclusion that full abstinence is the only way to get there."

Crucially, new drugs such as baclofen that can combat cravings have been pivotal in aiding the transition from drinking too much alcohol to full abstinence."We have these treatments that are reducing craving, that are reducing the motivation to drink alcohol – because they have a lower positive feedback," said Professor Gorwood.

As such, even though patients will still be drinking too much alcohol in the early treatment phase, more focus is placed on a steady decrease in alcohol consumption, with the ultimate goal of abstinence further down the line. "You usually need pretty large amounts of treatment, which is a very high dosage, and these patients get to abstinence as a goal, not as an initial requirement," said Professor Gorwood.

Philip Gorwood

He added: "That is a very strong shift in the way that we are taking care of patients with alcohol dependence... OK, some of the patients will not get full abstinence, which means the problem is not resolved, but now we're saying we don't care about that. Of course some of them will get there, and that is excellent news for them, but even though you are treating 10% of patients very nicely, it might be important that you reduce the harm for 80% or 90% of the patients, and that's the global idea."

However, Professor Gorwood stressed that medications such as baclofen still are in need of more scientific study, with patient groups that are more reproducible (some of the most referenced work has been with liver cirrhosis patients, for example), and with more realistic

From philosophy to pragmatism in bipolar disorder

Sabine Bahn

The aetiologies of complex disorders remain largely elusive, and overcoming these hurdles may require a radical rethink of our existing conceptions of discrete psychiatric conditions, says Sabine Bahn (Director of the Cambridge Centre for Neuropsychiatric Research [CCNR], University of Cambridge, UK and Chair in Translational Neuropsychiatry at the Erasmus Medical Centre in Rotterdam, The Netherlands) ahead of this afternoon's session that will examine the role biomarkers in bipolar disorder.

Professor Bahn is on the leading edge of multi-omics research, with the aim of identifying new diagnostic measures of complex psychiatric conditions such as bipolar disorder. Speaking to *ECNP Daily News*, she described how this practical approach can yield much needed tangible improvements in patient diagnosis and treatment, explaining: "We currently diagnose patients by asking questions which are neither sensitive nor specific, and we know that current symptomatologies do not really define diseases specifically."

Professor Bahn believes that multi-omics can help to identify hypotheses regarding causative disease mechanisms, which in turn could identify useful novel targets for intervention as well as diagnosis. Describing this process, she said: "When you don't know the causes of a complex disease, it is best to have an open mind in the initial stage. We use technologies that cover a wide range of analytes, looking at proteins, metabolites, and expressed genes so that they are explored at the systems level in the biological sense."

> *"We always considered schizophrenia and bipolar disorder as single disease entities, but they are almost certainly not; they are composed of multiple etiological entities and patient sub-groups. This would certainly explain why our treatments are failing, because we are lumping patients together based on their symptomatic presentation."*
>
> *Sabine Bahn (University of Cambridge, UK and Erasmus Medical Centre, Rotterdam, The Netherlands)*

Much of our recent understanding of mental disorders has arisen from studies in drug efficacy, but these have often focused attention on effects rather than causes of disease, as Professor Bahn illustrated: "We now know that changes in neurotransmitter receptors in bipolar disorder may not be the root cause of the disease. We are trying to pinpoint the origin of these disturbances with the assumption that bipolar disorder is not a single disease entity. We are doing that by looking at post-mortem brains, as well as peripheral tissues, such as blood, to allow the investigation of large patient cohorts at diverse disease and treatment stages."

The identification of changes that can be measured in blood samples is a clear aim of Professor Bahn's current research, and her team have already had some successes: "We have been most successful in developing a blood test to aid in the diagnosis of schizophrenia," she said. "It measures 51 proteins in the blood, helping to identify patients with a high chance of a schizophrenia diagnosis."

The understanding of complex psychiatric disorders is rapidly changing to include metabolic and immune abnormalities as well as more classic neuropharmacological phenomena, and this inclusive approach can only serve to strengthen diagnostic certainty and personalised treatments. An interesting consequence of this may be a new diagnosis mindset based on a spectrum of individual symptomal factors, as Professor Bahn described: "We have always considered schizophrenia and bipolar disorder as single disease entities, but they are almost certainly not; they are composed of multiple etiological entities and patient sub-groups.

"This would certainly explain why our treatments are failing, because we are lumping patients together based on their symptomatic presentation. The aim of our research is to appreciate the complexity that cannot be gleaned from externally observed behavioural symptoms alone."

Citing an instructive analogy, Professor Bahn continued: "It would be the same as treating a fever irrespective of the cause of the fever – this is futile – it could be viral, or bacterial, or something else. So we need to find out what is driving the pathology and identify the different disease entities."

Distinguishing bipolar and unipolar depression is perhaps a particularly pressing clinical need, given that selective serotonin reuptake inhibitors prescribed to a bipolar patient whose index presentation is of depression can in fact precipitate a manic episode. Professor Bahn traced out the unknowns that are currently being addressed in research, saying: "As well as distinguishing bipolar from unipolar depression on first presentation, there is the question as to whether there is a signature of bipolar disorder which is stable over the different mood phases – through manic and depressive – and maybe even before symptoms present.

"So we are collaborating with Professor Brenda Penninx, the PI of the Netherlands Study of Depression and Anxiety (NESDA); a longitudinal study of 3,000 patients with initial presentations of anxiety and depression. Within this cohort, there are patients that initially had a unipolar disorder but over the course of six years developed a bipolar disorder; can we predict these at baseline, at the index presentation?"

Multi-omics is a 'forensic' discovery approach serving to improve holistic understanding of disorder processes, and Professor Bahn is hopeful that producing practical diagnostic tools will bring about a shift in the perception of her field: "For me, this is a practical problem. It may be difficult, but the aim is to bring about new insights and technological advances to help patients. This is likely to be an incremental process."

Professor Bahn will give her presentation 'Multi-omics profiling approaches to biomarker discovery in bipolar disorder' during the session 'Are there relevant biomarkers of bipolar disorder?' this afternoon at 14:30 in Hall E.

dosage recommendations: "[It's] been proposed between 30 and 40mg, and my average treatment is around 100[mg], so it's much more than was initially prescribed," he said.

Professor Gorwood added that another important hindrance to the development of alcohol-dependence medications is the stigma attached to the disease. For the same reason, patients may find it difficult to discuss their condition with family and friends, and identify what part alcohol really does have in their life.

"You are having a very strange pharmacological possibility to decrease your alcohol consumption, but then of course what are you doing with that?" said Professor Gorwood. "That means of course analysing and understanding that alcohol is doing more harm than you have benefit. But that is now easier to get with that treatment."

A new avenue of treatment that Professor Gorwood is pursuing is the use of so-called 'enriched environments' that hope to diminish cravings. In work in rat models of cocaine dependence, it was observed that the animals became disinterested in the drug if they were placed in a social cage with plenty of other animals, distractions and rewards.

"The ones that were in an enriched environment are not interested anymore in the cocaine, but the other ones in the poor cage are going directly to the place they know they will get cocaine," said Professor Gorwood.

Transposing this to alcohol-

Continued on page 8

Updates in molecular findings in child and adolescent psychiatry Sunday 14 October 14:30 **Hall IK**

Uncovering copy number variants in OCD

Obsessive-compulsive disorder (OCD) in children and adolescents will be placed under the spotlight this afternoon in a session that will examine the latest psychiatric updates and molecular findings in the treatment of a variety of developmental and psychoaffective disorders.

OCD a relatively common condition with over half of patients experiencing chronic and disabling symptoms throughout their lives. Discussing OCD during the session will be Edna Grünblatt (Neurobiochemistry Laboratory, University of Zurich, Switzerland), who described her work in identifying copy number variants (CNVs), something which is providing a significant contribution to the detailed understanding of this complex and heterogeneous disorder.

Dr Grünblatt defined the present understanding of the complex aetiology of OCD in terms of its underlying gene-environment interactions, saying: "From twin and family studies, OCD shows very high familiality, especially in early onset cases.[1] According to the literature, the heritability for obsessive compulsive symptoms ranges from 0.45 to 0.65 in children and from 0.27 to 0.47 in adults."

This high heritability in early onset cases is of particular interest in studying the disorder, as well as providing a distinction with late onset that may help in tailoring medicine in the future: "The two types, early onset and late onset, seem to be two distinguishable groups from the genetic and neurobiological point of view," Dr Grünblatt explained.

Speaking of current studies in efficacy, she cited work that reinforces the clinical distinction between different OCD subtypes, noting: "One of the implications, in accord with recent findings of the POTS study[2], is that in the familial form of OCD, medication is more effective than CBT [cognitive behavioural therapy], yet CBT is very effective in non-familial OCD patients."

CNVs are one line of investigation that may help to provide an explanation for the variance in susceptibility and complex behaviours that are expressed in OCD. Dr Grünblatt summarised the work that laid the foundations for her research: "In previous publications, studies focusing on chromosomes 22q11.21 (suggesting the COMT gene to be involved) and 15q11-q13 (genes such as TUBGCP5, NIPA1, NIPA2, and CYFIP1) were conducted by Delorme et al. (2010)[3], but these failed to confirm CNVs in OCD patients," she said.

> *"We demonstrated that a common single nucleotide polymorphism on the promoter of the HTR2A gene was associated with OCD; even more interestingly, we showed that a deletion on a proximate region on the promoter was associated not only with OCD but to its onset and severity as well, meaning that carriers of the deletion had earlier OCD onset and severe form of symptoms."*
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> *Edna Grünblatt (Neurobiochemistry Laboratory, University of Zurich, Switzerland)*

Describing the reasoning behind her particular approach, she continued: "In our study, we focused deliberately on one gene, the HTR2A gene on chromosome 13, since it was shown to be associated in polymorphism studies with OCD and in particular with early-onset OCD[1]. This was recently confirmed by a meta-analysis by Taylor.[4]

Edna Grünblatt

"In our work, we demonstrated that a common single nucleotide polymorphism on the promoter of the HTR2A gene was associated with OCD. Even more interestingly, we showed that a deletion on a proximate region on the promoter was associated not only with OCD but to its onset and severity as well, meaning that carriers of the deletion had earlier OCD onset and severe form of symptoms."

Much work is still to be done in understanding OCD in post-mortem and neuroimaging studies, and Dr Grünblatt is suitably tentative about her team's findings: "From our preliminary results (this data is not published yet) using control post-mortem brain tissue, we may find that the expression of the HTR2A gene is strongly associated with age of the sample in the striatum, which points to a developmental aspect of the regulation of this receptor. But since these are still preliminary results, conclusions should be taken in a precautious manner.

"If we observe the facts to date, they do suggest that the serotonin 2A receptor plays a major role in regulation of signals in the neuronal network for OCD," concluded Dr Grünblatt. Devising more specific novel therapeutic targets for OCD relies heavily on the replication of findings and further investigation. However, Dr Grünblatt and other groups' work is a keen signal that we are moving towards such a milestone.

'New findings of copy number variations in OCD', as part of the session 'Updates in molecular findings in child and adolescent psychiatry'; Sunday 14 October, 14:30, Hall IK

References

1) S Walitza et al. Obsessive-Compulsive Disorder in Children and Adolescents. Dtsch Arztebl Int 2011; 108(11)

2) AM Garcia et al. Predictors and moderators of treatment outcome in the pediatric obsessive compulsive treatment study (POTS 1). J Am Acad Child Adolesc Psychiatry 2010; 49:1024–1033

3) R Delorme et al. Search for copy number variants in chromosomes 15q11-q13 and 22q11.2 in obsessive compulsive disorder. BMC Medical Genetics 2010; 11:100

4) SS Taylor. Molecular genetics of obsessive–compulsive disorder: a comprehensive meta-analysis of genetic association studies. Molecular Psychiatry 2012 (Advanced, online copy. Accessed October 2012)

The true unmet needs in the therapeutic armamentarium Tuesday 16 October 09:00 **Hall F2**

New advances in the treatment of alcohol dependence

Continued from page 7

dependent patients who have reached the stage in which they need to be hospitalised was a natural next step, as there is a high level of relapse in these sorts of patients. In essence, Professor Gorwood suggested that existing hospitalisation is somewhat of an analogue of the 'poor cage' environment, with largely sedentary patients only receiving stimulation by psychiatric and psychological professionals for a few hours at a time. "So we wanted to use a kind of enriched environment to reduce the craving process during the hospitalisation," he said.

To that end, 15 patients have now been enrolled into an early trial in which they have regular social exercise with other patients on specially designed exercise bikes that have a virtual video game experience incorporated into their function. "We bought three of these bikes in order for the patients to get together, leave the 'front line' together, and try to get to the end all together," said Professor Gorwood.

> *"Usually with these patients we are trying to increase their insight, and reduce the ambivalence about alcohol, and then at the end of the day trying to get them to have the conclusion that full abstinence is the only way to get there."*
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> *Philip Gorwood (Hospital Sainte-Anne, Paris Descartes University, France)*

He continued: "Our idea is that they are now having physical activity, social interactivity and learning because of the 3D navigation of these bikes. We tried to do that in a kind of replication of the enriched environment in rodents to see if we have an impact on lowering the risk of relapse."

Data from the study is still unpublished, but Professor Gorwood is hopeful that this approach will be another step in the evolution of treatment that will improve outcomes for those suffering from alcohol dependence.

'The unmet needs in the treatment of alcohol dependence' – 'EPA session: the true unmet needs in the therapeutic armamentarium seen from a clinical perspective'; Tuesday 16 October, 09:00, Hall F2.

25th ECNP Congress

13-17 October 2012, Vienna, Austria

SCIENTIFIC CAFÉS

Topic-focused, informal gatherings for sharing ideas, meeting new colleagues and networking.

Sunday to Tuesday from 16.10-16.40 in the foyers outside the session rooms, accompanied by coffee and biscuits.

SUNDAY

Anxiety café	Foyer GH
Biomarkers café	Foyer E
Bipolar café	Foyer F
Child and adolescent café	Foyer IK
Suicide café	Foyer F

MONDAY

Neurodegenerative disorders café	Foyer GH
Social anxiety café	Foyer E
Addiction café	Foyer F
Psychoneuroimmunology café	Foyer IK
Schizophrenia café	Foyer F

TUESDAY

DBS and other physical interventions café	Foyer GH
Depression café	Foyer E
Stress café	Foyer F
New neurobiological targets café	Foyer IK
Diagnosis café	Foyer F

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TRACKS

- Treatment track
- Clinical research track
- Interface track
- Preclinical track
- Educational track

25 years of ECNP

Interview: **Alexander Schubert**

In 2009, ECNP boosted its strategic coordination abilities with the creation of a new role within the ECNP office: Executive Director. In addition to providing overall management of the organisation, the Executive Director offers advice to the Executive Committee on future direction, thus ensuring ECNP continues to flourish for the next 25 years and beyond.

To that end, *ECNP Daily News* spoke to Executive Director Alexander Schubert (Utrecht, The Netherlands) on this special 25th anniversary in order to catch a brief glimpse of the past, present and – more importantly – future directions of the organisation.

Will there be a special programme or special focus for the 25th year of the ECNP?
What we decided actually was, rather than look back over 25 years, we would use this more as an opportunity to step back a little bit and survey the field looking forward... It does seems more relevant at this point, because there is, in fact, quite a lot of turbulence in the field. Things are really changing quite quickly.

This is an opportunity to take some views and perspectives we don't normally take, and what we did was invite six plenary lecturers to do that. Their job is to take more of a longer term, bigger-picture view of where the field is going.

Some would argue that collaboration has to be key in our future endeavours, bringing together the different components of the field. Is it fair to say that will be a core focus of the next 25 years?
I guess you would have to define 'collaboration' quite carefully. One thing that has been becoming quite clear over the last couple of years is that the old research models, and the way research is organised, has not really necessarily been delivering what they could have been. And in particular, of course, this is the case of the pharmaceutical industry, where many of these companies have now decided that they will either exit the field entirely, or they will scale back or will radically reorganise how they do scientific research, [i.e.] drug discovery. And that's really been a huge change.

From our point of view that's really the biggest one, and in science in general now there is definitely more emphasis on collaboration across Europe, and trying to make the most of networks. We actually do quite a lot of that at ECNP. We have pan-European networks to try and create critical masses of data. And that's essentially why ECNP was founded: to help create pan-European networks and research relationships.

> *"What we decided actually was, rather than look back over 25 years, we would use this [anniversary] more as an opportunity to step back a little bit and survey the field looking forward... It does seems more relevant at this point, because there is, in fact, quite a lot of turbulence in the field."*
>
> *Alexander Schubert (Executive Director of the ECNP, Utretch, The Netherlands)*

Alexander Schubert

Although the plan isn't to look back too much, obviously over the last 25 years there has been a rapid expansion in the meeting and the college itself, so how do you think the ECNP has changed, broadly speaking? Have there been "critical" ventures along the way, such as the new schools that have been established?
Yes absolutely. When the organisation was started, and for several years of its early life, it existed basically to run the congress. That was its book of business. And that has been massively expanded, beginning really in the late 90s and escalating even in the last few years. The range of activities has increased enormously, to the point that the ECNP is probably – in terms of its annual spend – the largest non-governmental organisation in this field in Europe. Certainly, in terms of training psychiatrists and young scientists, the organisation has been enormously active.

What do you think keeps bringing delegates back year after year? Are there things that separate it from any other meeting in the field that is out there?
The quality of the science is excellent. ECNP really is a showcase for the best science in Europe, and actually the world. We tend to get the best speakers, consistently, and the most consistently-good scientific programme. Huge amounts of effort goes into making sure that is the case. We take great care to make sure the experience of attending ECNP congress is consistently excellent. That's another reason why people like to come!

ECNP@25: Celebrating a quarter-century at the cutting edge

Designing innovation: The Scientific Programme Committee

Michel Hamon

As chair of the Scientific Programme Committee for the last three years, Michel Hamon (Professor of neuropharmacology at the University Pierre and Marie Curie, Paris, France) has been at the forefront of the preparations for this 25 year anniversary. *ECNP Daily News* spoke to him to find out what unique elements have been introduced this year, as well as those more recent changes that have now settled firmly in to the programme.

"Of course it is a special event this year, and this is the reason why we have more plenary lectures than usual, and with prestigious people such as Colin Blakemore that will give the keynote lecture," he said. "We will also have a special issue of the Journal of the ECNP, *European Neuropsychopharmacology*, with about eight articles proposed and written by real leaders in their respective fields of neuropsychopharmacology."

Similarly, young scientists will also benefit from an expanded number of breakfast meetings – a relatively new feature of the congress which was established two years ago in Amsterdam. "The idea is to meet anyone, especially the young scientists, in order to help them in their careers, and to give information about how to apply for grants, how to manage for setting up new teams and these types of things," said Professor Hamon.

> *"Of course it is a special event this year, and this is the reason why we have more plenary lectures than usual, and with prestigious people such as Colin Blakemore that will give the keynote lecture."*
>
> *Michel Hamon (University Pierre and Marie Curie, Paris, France)*

Of course, this year the congress has also had to take a stand on the various challenges now faced in the field, particularly the changes in pharmaceutical company drug discovery and research infrastructures. To that end, the programme will feature a summit that hopes to encourage open exchange between public research and industry.

"[Guy Goodwin and David Nutt] are taking care of this matter, and they have developed really collaborative programs between public research and industry," said Professor Hamon. "The first action which is underway is to convince the industry to make sure compounds which have been under development – but for which development has been stopped because of toxicity and side effects and so on – [are not lost]."

He added: "These drugs could be very useful tools to investigate the brain function and so on, so the idea is to convince the industry to give us these molecules (which will not be drugs for clinical purpose) to contribute to the development of research in animals and so on.

"This operation is really underway and there is a great chance that, I would say, it will be also be a successful action, entirely at the initiative of the ECNP. But this is the only way in fact, in some aspects, to convince the industry that this research is absolutely needed for the brain health of people."

Now that he is stepping down as Scientific Programme Committee chair, we asked what Professor Hamon felt should be the first steps to further develop the scientific programme in the next few years. First, he said, was to improve the exchange between clinical research and pre-clinical research in animals, which has some focus in this year's programme, but with planned expansion in the near future.

"Of course, the idea with any symposium is to be at the very forefront of research, but in this case to have an equilibrium between, for instance, two presentations in animal research, and two in clinical," said Professor Hamon. "We know that it is making this exchange between pre-clinical and clinical research that we will accelerate.

"This is the basic idea: promote more and more of what we call the 'translational' research, and that means that the congress has to be more and more attractive to labs, not only to clinicians. As you know, of all of the people who are participating in the congress, I would say about 80% of them are psychiatrists. The idea is to attract more and more neuroscientists, and to have more exchange. This will really help to promote really efficacious research for better treatments and better prevention."

25 years of ECNP

An 'inspirational' 25-year journey for ECNP

As a former president of ECNP, David Nutt (Edmond J Safra Chair of Neuropsychopharmacology and director of the Neuropsychopharmacology Unit in the Division of Brain Sciences at Imperial College London, UK) has witnessed the evolution of the organisation from a unique perspective that few others share. Current Chair of the Independent Scientific Committee on Drugs (ISCD), he is an outspoken and innovative thinker, his expertise spanning the diverse field of drug research, from laboratory to policy, bench to bedside.

Ahead of this year's landmark ECNP congress, Professor Nutt spoke to *ECNP Daily News* about the role ECNP has played in the evolution of neuropsychopharmacology over the past quarter of a century: "It really has been 25 years of uninterrupted success; it's a truly remarkable organisation," he said.

"I think I went to the fifth meeting and it's been remarkable the way it has grown, and not just in numbers. It now has a broad portfolio, from its annual general meeting, with lots of science and educational tracts, to its international seminars and workshops; it is a stellar organisation. It has laid down a mark as to how these kinds of international organisations should try to deal with the present, but also how to build for the future."

David Nutt

The future of therapeutic development for the brain will surely encompass diverse disciplines working together to improve the understanding of brain mechanisms in good and ill health, but Professor Nutt remains certain that neuropsychopharmacology will remain at its centre: "Neuropsychopharmacology as a term will always be with us – 'neuroscience' is a much broader term," he said.

"Human beings have always used drugs, and we can be pretty certain that we will still be using them for another few centuries at least. Drugs are the most efficient way of targeting the brain because the brain has its own drugs – neurotransmitters. So, neuropsychopharmacology is one of the core disciplines of the brain and it is always going to be one of the key mediators of therapy – and perhaps will always be key."

> *"The real strength of ECNP is that it encompasses multiple disciplines at a very high level, and that's why it's delivered so effectively and why it will survive such a tough period when companies are pulling out of brain research. It is at the top of the tree in terms of both people and delivery, and it has the highest integrity."*
>
> *David Nutt (Division of Brain Sciences, Imperial College London, UK)*

Highlighting the central importance of developing relevant novel medications, Professor Nutt further described the use of broader disciplines: "We will always have to embrace new technologies, like genetics and imaging, and I think we do that very well. However, these techniques are only really relevant when they translate into something applicable, and we must keep flying the flag for intervention through medication.

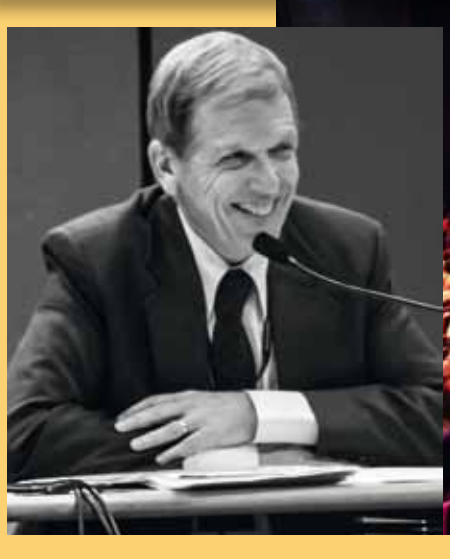
"To give an example of this, during the genetics revolution people assumed, once the genome was cracked, that medicine would undergo a transformation. But, as it stands, the direct contribution of genetics has as yet been minimal when it comes to real therapies." Illustrating how genetics has played an invaluable, if backseat, role in drug discovery, he continued: "The brain is a complex organ, and when we use multiple drugs we know that they are going to work in complex ways.

"Genes can only ever really be part of the understanding, but we certainly take this information on board. Certainly from the aspect of drug metabolism, and therapeutically, genes are very important; genetic variance in metabolic enzymes is currently the only credible use of genetic knowledge. But it could be useful in the future – if we could learn more about slow and fast metabolisers, we could form better interventions. But this really illustrates how ECNP always has had the ability to accommodate and integrate these different disciplines."

Professor Nutt concluded by describing ECNP as a triumph of education, exchange and enthusiasm: "I have found working for ECNP quite inspirational – it has been extremely well managed," he said. "It has resources which you can use to do important scientific things, particularly in the field of education. It is very democratic in the sense that it represents the wide range of European countries.

"It's been very committed to excellence; there is a real sense that the people that work for ECNP are at the top of their field. So, the real strength of ECNP is that it encompasses multiple disciplines at a very high level, and that's why it's delivered so effectively and why it will survive such a tough period when companies are pulling out of brain research. It is at the top of the tree in terms of both people and delivery, and it has the highest integrity. And this is why I have continued to work with ECNP for so long, because it really has delivered what no other organisation has been able to."

ECNP@25: Celebrating a quarter-century at the cutting edge



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Vulnerability and resilience in the development of anxiety Sunday 14 October 14:30 **Hall D**

Rapid response shows promise in reducing traumatic stress

Intervention initiated within hours of a traumatic event is effective in reducing the onset of post-traumatic stress disorder (PTSD), delegates will hear today as part of a session that will examine the susceptibility of patients to developing anxiety.

Delivering the message will be Barbara Rothbaum (Emory School of Medicine, Atlanta, USA), who will give an overview of her recent study that focussed on early intervention for patients following a traumatic event.[1] "What we wanted to try to do in this study is prevent the development of PTSD from the start," she told *ECNP Daily News*.

Professor Rothbaum added that approximately 70% of people will be exposed to a traumatic event in their lifetime, with roughly 10% of those people developing full-blown PTSD. Thus the onset of such a disorder is dependent on the inherent vulnerability of each individual trauma patient. "For most of us, fear and anxiety is a natural response to trauma – it's almost universal," she said.

"But for most people those fear responses do extinguish over time. And I think one of the ways that we do that is that we emotionally process it. So we're upset, we cry, we talk about it, we think about it, and then hopefully nothing bad happens again, and it is very similar to the grief process."

Barbara Rothbaum

> *"For most people, fear responses do extinguish over time. And I think one of the ways that we do that is that we emotionally process it. So we're upset, we cry, we talk about it, we think about it, and then hopefully nothing bad happens again, and it is very similar to the grief process."*
>
> *Barbara Rothbaum (Emory School of Medicine, Atlanta, USA)*

Following animal work that focussed on early extinction training to 'erase' fear memories, the human study was initialised with the goal of modifying the course of memory from trauma, reducing the chance of PTSD before the fear could be consolidated.

"What we do in the immediate aftermath of trauma can become incorporated into that trauma memory, and we know that from rape victims all the time; what happens to them in the emergency room, what happens to them in the police, becomes part of that whole dialogue," she said.

As such, the study team worked directly with the emergency room, identifying trauma patients as they came in and following them for a number of weeks. "We assessed everybody right there in the emergency room, one month later when PTSD could be diagnosed, and three months later when chronic PTSD could be diagnosed, and then we randomly assigned them to have either just that assessment or to receive an intervention starting the in the emergency room," said Professor Rothbaum.

Patients were initially assessed an average of 11.79 hours post-trauma, with sessions then scheduled with each patient weekly up until the next assessment at 28 days. "What we found was very exciting," said Professor Rothbaum.

"The folks that received the early intervention, at 12 weeks post trauma they had half of the rate of PTSD of the folks who just had the assessment only. And they had about a third less depression at that point too."

With these impressive early results in mind, surely there will be rapid expansion of further trials with more and more people, with other centres following suite? "You would think wouldn't you!" replied Professor Rothbaum, adding that unfortunately a lack of funding is still a key issue in further testing.

That being said, she was keen to stress that there are a number of steps already planned for the future, the first being better predictive power in identifying those most at risk of PTSD. "My colleague who worked with me on that study, Kerry Ressler, has a big study looking at biomarkers in early trauma victims, and trying to predict over time who is going to get PTSD, so that is obviously a piece of the puzzle," she said.

Secondly, Professor Rothbaum added that more work was needed to identify whether delays in genetic analysis is limiting the efficacy of the treatment. She explained: "At this stage we can't get results back from genetic analyses fast enough, while folks are in the emergency room, to know who we should treat and who we should not, so who is at risk and who is not. We could probably get it back say a week later.

"So that is my next step to try and get funding for: Is it as effective if we give that first session say a week later, or does it really need to be in the emergency room before that memory is consolidated? Because if it can be at a later time that is obviously much more convenient. This is not a great time to be trying to treat people who've had a traumatic event. They've been in the emergency room for hours, they're usually tired and hurt and upset and they just want to go home. So if it was just as effective to do it a week later that would be important to know. "

'Effect of early intervention on PTSD and depression', as part of the session 'Vulnerability and resilience in the development of anxiety'; Sunday 14 October, 14:30, Hall D

References

1) B Rothbaum et al. Early Intervention May Prevent the Development of Posttraumatic Stress Disorder: A Randomized Pilot Civilian Study with Modified Prolonged Exposure. Biol Psychiatry2012. (Ahead of print, accessed October 2012).

Young Scientist's symposium: Potential new targets for treating psychiatric disorders Sunday 14 October 09:00 **Hall IK**

Clues from NPS in sleep, anxiety and depression

Neuropeptide S (NPS), and models of sleep deprivation, could provide useful understanding of normal and disordered patterns of sleeping and wakefulness, ENCP Young Scientist Award winner Csaba Adori (Karolinska Institutet, Hagalund, Sweden) will explain during today's first Young Scientist symposium.

Dr Adori's recent work with Neuropeptide S has been linked to anxiety, appetite, wakefulness and fear, which indicates its great potential as a target for many depressive and anxiety disorders.

"As with so many modulatory neuropeptides, NPS has a multifunctional role," he told *ECNP Daily News*. "It primarily promotes arousal, but it also regulates the fine tuning of the stress response and food intake: metabolism. This makes this research so difficult and beautiful at the same time."

He added: "It is well known that insomnia and REM overshoot in depressed people, and popular antidepressants such as SSRIs significantly decrease REM sleep time. It is remarkable that NPS simultaneously promotes arousal and anxiolytic effects; there are data indicating the association of a NPSR gene polymorphism with panic disorder."

> *"As with so many modulatory neuropeptides, NPS has a multifunctional role. It primarily promotes arousal, but it also regulates the fine tuning of the stress response and food intake: metabolism. This makes this research so difficult and beautiful at the same time."*
>
> *Csaba Adori (Karolinska Institutet, Hagalund, Sweden)*

Working previously on the roles of other neuropetides (MCH, nesfatin) in sleep formed the basis for Dr Adori's studies in NPS, as he explained: "Our hypothesis was that NPS, as an arousal promoting peptide, would respond to REM sleep deprivation with altered expression of the peptide and/or receptor. But in which anatomical regions and in what type of neurons? These were open but important questions."

Extricating the specific involvements of NPS with behavioural traits is no trivial feat, but Dr Adori remains optimistic: "It is what makes this research

Young Scientist's symposium: Potential new targets for treating psychiatric disorders Sunday 14 October 09:00 **Hall IK**

Modelling mania with sleep deprivation

Sleep deprivation is an effective tool to model manic episodes and to identify anti-manic actions of drugs in rats, thus there is an urgent need for appropriate animal models and improved clinical therapies, Erika Abrial (Université Claude Bernard, Lyon, France) told *ECNP Daily News* ahead of her Young Scientist presentation today.

In humans, sleep deprivation can induce manic episode in bipolar patients, as well as showing promise as a treatment for some forms of major depressive disorder. Ms Abrial outlined the aims of her research, saying: "There is currently no decent model of mania, and this is one of the main concerns of basic research in this field, which is why it is very interesting to try to create new models."

Describing her experimental methods, Ms Abrial continued: "Rats were deprived of REM sleep for three days, and immediately after this period they exhibited hyperlocomotion. This is analogous to the increase in energy and activity that is seen in bipolar patients, giving it good face validity with mania. Other studies have also shown that, following sleep deprivation, animals exhibited other manic behaviours, such as increased aggression, risk taking and irritability."

Modelling specific aspects of clinical presentation is favoured in basic research, especially with complex disorders in which aetiology is not understood. Ms Abrial explained: "Bipolar disorder is not a single disorder; it is a family of disorders with several subcategories, and each category has different traits. In animal modelling, we cannot model 'bipolar' in its entirety – we cannot model both depressive and manic phases in one animal – so in our field we have separate models of each."

The focus of Dr Abrial's research has been on the enzyme PKC, and she described the basis of her research, saying: "A preliminary clinical trial with very few patients has shown that a PKC inhibitor called TAMOXIFEN (an upselective PKC inhibitor, meaning that it has properties pertaining to PKC, but also to oestrogen receptor modulation) improved mania in bipolar patients. So we want to reproduce the effects of the PKC inhibitor in our model."

The biological findings of Dr Abrial's research mirrored the findings of this clinical trial, as she described: "We found that the sleep deprivation model increased PKC activity, and this is very interesting because PKC is not directly related to sleep regulation. Of course, it has various neuronal substrates, being implicated in almost everything, but not really in sleep. We used the PKC inhibitor – TAMOXIFEN – as well as a more selective PKC inhibitor, so we injected rat with this inhibitor and we found that the hyperlocomotion was attenuated by the inhibitor."

> *"Identifying cellular targets of existing mood stabilisers presents work for the future. We don't have a big picture yet; we know that these drugs are able to affect intracellular signalling pathways. We have to work step by step in order to identify the downstream targets of these pathways and how they can modify cellular functions."*
>
> *Erika Abrial (Université Claude Bernard, Lyon, France)*

These fantastic findings may come as little surprise to those familiar with common drug treatments for bipolar disorder, such as lithium and valproate, which are also known to modulate PKC. Ms Abrial noted this, and went on to explain that we could improve on these somewhat broadly acting drugs: "Lithium is a simple ion and has many, many different substrates that probably have not all been identified," she said.

It is has been proposed that this is the reason for lithium's varied and unpleasant side effects, so how do TAMOXIFEN and other PKC inhibitors fare? Ms Abrial said: "The TAMOXIFEN that is used in clinics to treat manic patients is the only relatively selective treatment used in a clinical setting. There are very few side effects of TAMOXIFEN: nausea, hot flushes, etc., and these side effects can in fact be attributed to oestrogen rather than to PKC inhibition itself, so it seems that PKC inhibition is not associated with dramatic side effects; therefore we can probably say that the reason for side effects with lithium is not because of a ubiquitous target."

She was clear on what needs to be done to achieve better, more specific therapies: "Identifying cellular targets of existing mood stabilisers presents work for the future. We don't have a big picture yet; we know that these drugs are able to affect intracellular signalling pathways, including the PKC pathways. However, we don't know exactly which molecules are implicated, what the consequences are, and how far they are implicated. We have to work step by step in order to identify the downstream targets of these pathways and how they can modify cellular functions."

Another area of interest for Ms Abrial is how exactly anti-manic effects are brought about at the end of a manic episode, and what other processes are interlinked with PKC and mania that could also suggest clinical targets. She said: "We know, for example that PKC inhibition may have antimanic-like effects, but we don't know how these effects can come about – what are the neurobiological mechanisms involved in these actions?

Erika Abrial

"For example, we looked at cell proliferation in the hippocampus, and we found that sleep deprivation decreased cellular proliferation in the hippocampus. So that suggests that perhaps in bipolar disorder, there is a decrease in, or a loss of, new cells in the hippocampus."

Perhaps surprisingly, PKC administration was able to rescue this deficit, similar to the action of antidepressants in major depressive disorder. Ms Abrial explained: "The effect shown with antidepressants is why we focussed on this point with PKC in mania. It's very promising because the anti-manic effect of PKC inhibitors may be related to the recovery of cell proliferation."

'Sleep deprivation as an animal model of bipolar mania: antimanic and proliferative effects of protein kinase C inhibition'; 'Young Scientist's symposium: Potential new targets for treating psychiatric disorders'; Sunday 14 October, 09:00, Hall IK

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so difficult and beautiful at the same time," he said. "It is pretty difficult to introduce in vivo model systems where we can modify only one aspect – sleep deprivation is associated with inherent stress or altered energy metabolism, for example. In addition, one prominent NPS-producing cell cluster (glutamatergic neurons around the Kölliker Fuse nucleus) may be involved in the respiratory regulation – but this is a very preliminary indication."

Detailing the neural correlates of NPS, Dr Adori continued: "NPS is expressed by very few neurons, forming discrete cell clusters in the brainstem close to the locus coeruleus.

Csaba Adori

This region is now often defined as the parabrachial-pericoerulear region (PB/PC) and defined as a new glutamatergic arousal system localised close to, but clearly distinct from, the monoaminergic locus coeruleus. NPS neurons project to different brain regions: several hypothalamic and thalamic nuclei contain significant amounts of NPS immunoreactive fibres.

"The expression pattern of NPSR [NPS receptors] is more widespread and not always in agreement with the distribution of NPS fibres: the amygdala and subicular regions express NPSR in a very high level, for example." As well as the region around the locus coeruleus, NPS is also produced in the amygdale, as Dr Adori explained: "The effect of NPS on amygdalar GABAergic neurons is extensively studied because of the prominent role of the amygdala in anxiolysis after NPS administration."

Dr Adori summarised the focus of his presentation, saying: "I have concentrated to the preoptic area (median preoptic nucleus – ventrolateral preoptic area and its extensions). The latter is a complex sleep centre containing REM and SWS active neuronal populations (mainly GABAergic and sometimes galaninergic cells). Some of the cell groups here are responsible for the maintenance of sleep but some of them are involved in the fine tuning of sleep-wake transitions."

Citing some interesting questions that might form the basis of future research, Dr Adori said: "In our work we have not examined the NPS inervation of the arcuate nucleus or the dorsal part of ventromedial nucleus (the appetite centres). We have found some connections of NPS fibres with A13 and A15 dopaminergic cell groups. Other dopaminergic connections – which could be hypothesised after functional studies – we plan to study".

Dr Adori will give his presentation 'Increased mRNA expression and putative release of neuropeptide S after REM sleep deprivation in rat' this morning as part of the Young Scientist symposia 'Potential new targets for treating psychiatric disorders'; 09:00, Hall IK

ECNP Networks Initiative

Taking the initiative: ECNP-NI

Marking the first year for such an endeavour, Friday and Saturday prior to the main congress played host to a collection of meetings by the ECNP Networks Initiative (ECNP-NI).

The project, started by past-president Yves Lecrubier, was founded with the intention to help different networks standardise essential clinical, psychological, biological and therapeutic variables to be analysed in clinical studies and pharmacological trials. Furthermore, the Initiative aims to foster exchange and collaboration between European investigators.

In previous years the first two days of the congress were dedicated to Targeted Expert Meetings (TEM), with the main goal of eliciting very precise, highly specialised expertise on a number of topics. "The ECNP Scientific Programme Committee [under chairperson Michel Hamon, and with help from ECNP-NI scientific coordinator Nic van der Wee] has decided to renew the interest for these two days in converting what was an expert meeting to networks meetings," ECNP-NI chair Patrice Boyer (Professor of clinical neurosciences psychopathology and psychiatry at the Université Paris Diderot – Paris 7, France) told *ECNP Daily News*.

Offering a brief history of the networks involved with the initiative, Professor Boyer said: "So, what were the requirements for creating the new networks? The requirements were: A significant number of people wanting to join a new network and being ECNP members; a very active leader or leaders (one of two chairpersons being very well known in the domain); productive; recognised by their peers; active in publishing etc."

He continued: "A new network could be proposed and, if accepted by the task force and EC, facilitated for the network to meet. There was, of course, no money for financing and doing support for the studies themselves – the protocols, or for trials – because it is very expensive and it is up to the institution to provide money in this respect. But ECNP was offering the possibility for the people to meet and to prepare specific applications."

The real beginnings of the project started in 2007 after the ECNP congress in Vienna, with the first network, ADRN (Anxiety Disorders Network) being established one year later. "Then four other networks very rapidly were established on bipolar disorder, brain imaging, schizophrenia and children and adolescents," added Professor Boyer. "So very rapidly, I would say within one year, these five networks were established and active."

Owing to this initial success, seven grants from the European commission have now been received by the networks, and further expansion has taken place, with newer networks for obsessive compulsive disorder spectrum (OCD spectrum) and suicide now establishing themselves.

Moving on to describe how the networks have been featured in the congress programme, Professor Boyer said: "It [is] organised in the following way: Every year one of these NI meetings will be dedicated to an already existing network, to allow a network to present all of its achievements... and the future projects of the networks will be discussed as well."

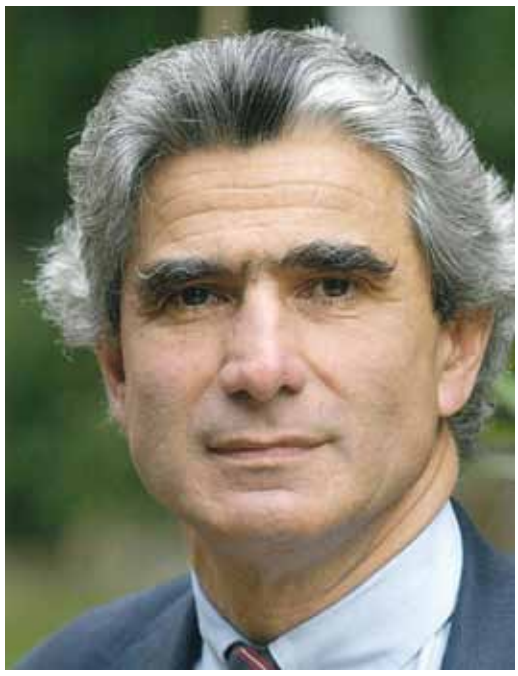
He added: "The other meeting will be dedicated to a network not yet created but a potential network, which means a network that is not yet in existence but for which a potential exists for its creation."

For this year specifically, the established and new networks have been schizophrenia and addiction, respectively, with space for up to 30 participants, representing a mix of younger and more senior scientists. "The idea was to have 15 people who are members of the network... people of the 'inner circle', and then people coming from the outside who are not members of the network," explained Professor Boyer.

This, he added, was a particularly important characteristic of the design of the network meetings, as the open format allows younger scientists to share their ideas as well as seek guidance from more senior members on various aspects of their chosen field.

Another important component of the ECNP-NI is the creation of a central database, as Professor Boyer explained: "[It] is crucial for the future of research to have a common database regarding the sociodemographic characteristics of patients, the clinical characteristics, the epidemiology for the different disorders and all the biological material corresponding to these patients: neuroimaging, genetic materials etc."

However, as Professor Boyer emphasised, it is of course a very ambitious task to create a common database and to allow all the different networks cross-access. As such, while this particular part of the ECNP-NI project is not yet finalised, momentum is gathering to staff data managers and create a common storage area that will better facilitate this grand venture.



Patrice Boyer

> *"[It] is crucial for the future of research to have a common database regarding the sociodemographic characteristics of patients, the clinical characteristics, the epidemiology for the different disorders and all the biological material corresponding to these patients: neuroimaging, genetic materials etc."*
>
> *Patrice Boyer (Université Paris Diderot – Paris 7, France)*

More details of the individual networks, grants and ECNP-NI as a whole can be found on the ECNP website at: http://www.ecnp.eu/projects-initiatives/networks-initiative.aspx

Expert views

Understanding the complexity of mechanisms of disease

The genetic, inflammatory and biological causes of disease all garner great interest, but vary widely in their significance, understanding and interpretation, Thomas Insel (Director of the National Institute of Mental Health in Bethesda, USA) commented to *ECNP Daily News*.

Dr Insel, who will give his plenary lecture 'Disruptive innovations in clinical neuroscience' tomorrow, stressed that, in terms of the genetics, mental disorders have never really had a significant heritable component. "They are heritable, but other than autism the heritabilities are not that great," he said.

"Even when you look at identical twins for schizophrenia, it's never been more than 50%. That tells you this is quite different to Huntington's disease of cystic fibrosis." He added that, in terms of non-genomic influences, how they play out and interact with genomic vulnerability has not yet been identified, largely because of a lack of appropriate tools to do so.

Moving onto to discuss the role of inflammation, he said: "There is a lot of interest right now in looking at potential inflammatory causes or issues that have to do with pre-natal exposures to viruses, but that's still at the stage of barely small effect sizes within epidemiological studies."

"It would be like looking at 100 people with fever, and you found that there were 10 of them that had a positive strep test. You wouldn't want to say that strep is not involved in fever, because of the other 90%, and yet that's very much what we do here. We don't have any way to break this down, and we assume that if it doesn't match with the DSM [Diagnostic and Statistical Manual of Mental Disorders] category it must not be relevant. But we need to turn that around and say 'You know, the biology is really important and it will give us validity, so we need to look at if there is an environmental story or if there is an infectious disease story, or something we can relate to inflammatory markers'.

"We should start there, and work out from that."

Issue 2 of *ECNP Daily News*, available Monday, will feature more detailed commentary from Dr Insel regarding his Plenary Lecture 'Disruptive innovations in clinical neuroscience'; Monday 15 October, 13:30, Hall D.

25th ECNP Congress

13-17 October 2012, Vienna, Austria

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The immune–brain axis: a concept gaining momentum Monday 15 October 14:30 **Hall IK**

Expanding immunological knowledge in psychiatric disorders

Norbert Müller

A great deal of data is now emerging to on the effect of immunological/inflammatory components in mood disorders, schizophrenia and depression, Norbert Müller (Department of Psychiatry and Psychotherapy, Ludwig-Maximilians-University, Munich, Germany) told *ECNP Daily News* ahead of a session that will serve to bridge the gap between the immune system and the brain.

In his own work, Professor Müller has undergone extensive study of cyclooxygenase-2 (COX-2), an enzyme expressed in the central nervous system which is known to interact with different neurotransmitters, and is involved with various aspects of immune system regulation and inflammation.[1] Specifically, he and colleagues have investigated what clinical benefits the therapeutic use of COX-2 inhibitors impart in disorders such as schizophrenia and depression.

Referring to what aspects he will cover in his presentation at the congress, he said: "There are also data from neuroimaging going into this direction [of inflammation], and one of the highlights I will show is an overview of our studies – and studies from other groups – with anti-inflammatory substances."

Amongst other factors that have provoked vested interested in the links between the immune system and the brain, the observation of increased schizophrenic frequency in infants born to mothers who suffered an infection during pregnancy has been a particularly intriguing catalyst. "This model of the prenatal immune challenge, especially in the second trimester of the pregnancy, is one example that is showing an enhanced risk for schizophrenia," said Professor Müller.

> *"It seems not only in pregnancy but in later stages of life if there is a severe infection this also increases the risk for schizophrenia."*
>
> *Norbert Müller (Department of Psychiatry and Psychotherapy, Ludwig-Maximilians-University, Munich, Germany)*

However, he added that data is now emerging that shows inflammation in early brain development, such as encephalitis or meningitis, also elevates schizophrenia risk. Even more striking, Professor Müller added, was that some data may now be pointing towards an increased risk of schizophrenia following infections in adulthood. "So it seems not only in pregnancy but in later stages of life if there is a severe infection this also increases the risk for schizophrenia," he said.

Moving on to briefly describe what he believed the other speakers would present in the session, Professor Müller began by outlining the research of Raz Yirmiya (Department of Psychology, The Hebrew University of Jerusalem, Israel). He said: "I know his research quite well: It is focussing on the effects of inflammation, or immune activation, in healthy people, with special regards to cognition and so-called 'sickness behaviour' that means that if you have an inflammation in the body you have symptoms which are similar to depression, or inertia, sleep disorders, depressed mood and so on.

"He did a lot of studies activating the immune system with attenuated bacteria and looked at... what happened with the cognitions following that inflammation: It is also associated with a disturbance in the cognitive abilities of people. Not only depression as we know, but also in healthy people."

Also speaking during the session will be Lucile Capuron (Laboratory of Psychoneuroimmunology, University Victor Segalen Bordeaux, France) whose group Professor Müller referred to as "pioneers in the field" owing to their research of the sickness behaviour in animal models of depression.

Specifically, Dr Capuron will discuss the 'immune-to-brain communication' concept, to which Professor Müller offered a description, using the blood-brain barrier as an illustration of the model: "This is an example for the ways of communication between the immune system and the brain, and [Dr Capuron] will specially focus on metabolic disorders and ageing," he said.

"We know in ageing and disorder there is a breakdown of the blood-brain barrier, and there is even a, let me say, stronger communication between the immune system and the brain. There are a lot of studies showing that a slight breakdown of the blood-brain barrier is associated with aging, and there is often a pro-inflammatory immune state which predicts the disabilities in cognition for example."

Professor Müller will discuss the 'Immunological treatment strategies for psychiatric disorders' in the session 'The immune–brain axis: a concept gaining momentum'; Monday 15 October, 14:30, Hall IK. The final presentation in the session will be given by John F Cryan (Department of Anatomy & Neuroscience, University College Cork, Ireland) who will speak about the impact of the gut microbiome on brain function.

References

1) N Müller et al. COX-2 inhibitors as adjunctive therapy in schizophrenia. Expert Opin Investig Drugs. 2004 Aug; 13(8):1033-44.

ECNP
The official newspaper of ECNP Congress 2012

Issue 1
Sunday
14 October 2012

ECNP DAILY NEWS

2 ECNP Award winner: Neural risk mechanisms on key in therapy and prevention

3 Ruth McKernan discusses the next steps for big pharma in turbulent times

4/7 Medtronics, biomarkers and the many battles of bipolar disorder

10 ECNP at 25: Looking back to the future after a memorable quarter of a century, journey

ECNP 25 YEARS

Welcome to the 25th ECNP Congress

Do you still remember being 25 years old? The energy, the enthusiasm, the plans, the feeling that you will change the world?

The ECNP, in its 25th anniversary, is at this stage having a fresh look with the conviction that although tradition is a cornerstone, changes and adaptation are important as well.

This year's meeting will continue the 5-track system:

- Treatment track: evidence-based treatment
- Clinical research track (CR): clinical research issues
- Interface track (IFC): link between preclinical and clinical research
- Preclinical track (P): preclinical research
- Educational Update Sessions

Thus, at each given time you have five parallel sessions. Exceptions are only on three occasions: the plenary, the posters and the general assembly. This year, as part of the "changes and adaptations", new features are taking place, which include:

Scientific content in the opening ceremony to yesterday's opening ceremony the focus moved away from entertainment (which remained, but to a lesser degree) to science, with Colin Blakemore (UK) delivering his 30-minute keynote lecture on "The Plastic Brain". The gastronomic part of the ceremony remained (even being located a kilo). Overall, it was a very exciting opening ceremony composed of science, gastronomy, entertainment and swinging which we hope you very much enjoyed.

Scientific cafés. These topic-focused informal gatherings will allow participants sharing a common interest to network and collaborate. 15 topics have been identified, five per day (Sunday, Monday and Tuesday) from 4.30pm onwards, including Anxiety, Neurodegenerative disorders, DBS and other physical interventions, Bio-markers, Social anxiety, Depression, Bipolar, Addiction, Stress, Child and adolescent, Psychoneuroimmunology, New neurobiological targets, Suicide, Schizophrenia, and Diagnosis. The cafés will be held in the foyers outside the session rooms, and will be accompanied by drinks and finger food. My feeling is that these will provide one of the most relevant outcomes of the meeting, if not the best one.

More plenary sessions. This meeting will host six plenaries, more than ever before, including lectures on 'Pharma and the future of drug discovery' (Huib Ploemper, UK), 'Disruptive innovations in clinical neuroscience' (Thomas R. Insel, USA), 'Operational principles of inhibitory circuits in the cerebral cortex' (Tamás Freund, HU), 'Opioid systems: probing molecular processes of brain function' (Brigitte L. Kieffer, FR), and two plenary sessions reserved for lectures from the recipients of the ECNP Neuropsychopharmacology Award – 'Neural mechanisms of risk for psychiatric disorders' (Andreas Meyer-Lindenberg, DE) and 'Schizophrenia: from pathophysiological understanding to novel treatments' (Paul J. Harrison, UK).

An expanded educational track. This year, the number of educational sessions has been increased to seven, with an extra session added on Wednesday (17th October) morning. These fun, interactive sessions offer up-to-date, cutting-edge, balanced information, and, via interactive pad systems, the audience can respond.

The ECNP dinner. This has been moved from the Monday to the Tuesday (16 October), to allow more free time for networking.

Four noteworthy activities to strengthen the ECNP community are:

- Members' lounge
- Breakfasts for members with the president and other members of the Executive Committee
- Breakfast for Young Researchers with the president, members of the Executive Committee and other distinguished scientists
- Use of social media – twitter: @ECNPtweets and facebook: European College of Neuropsychopharmacology

So, thanks for joining us, enjoy the 25th anniversary meeting, and welcome to Vienna.

J. Zohar

Joseph Zohar President of ECNP

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Don't miss...

The first poster session will take place at 11:45 today, concentrating on the topics of psychotic disorders and antipsychotics, addiction and child and adolescent disorders and treatment, and will be followed by a presentation of the first daily ECNP Poster Awards.

Lunch is provided for all those in attendance.

Questions? Please go to the ECNP Plaza

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