Issue December 2013

Strasbourg

Freiburg Basel Contents

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On Dec 5th, a Neurex meeting will address the pathophysiology of Multiple Sclerosis (MS), an autoimmune disorder generally thought to begin with an immune dysregulation. However, this concept has been disputed and the intriguing question of whether inflammatory demyelination is primary or secondary in the disease process will be one of those raised during a controversy debate held the next day. Research on MS is strongly represented in Basel. The Neurology Department of the Hospital, led by Prof. Kappos, the Clinical Neuroimmunology group led br Profs. Derfuss & Lindberg, as well as the Neurobiology group led by Prof. Schaeren-Wiemers investigate both the clinical and fundamental aspects of the pathophysiology of MS. MS research is also strongly represented in Strasbourg and Freiburg, and we are most grateful to the scientists from those groups who will participate in these events. Interestingly, with the recent demonstration of a possible involvement of the gut microbiome in triggering immune processes, the compartmentalization of science is further challenged. Beyond the obvious implications for the study of autoimmune disorders, such data encourage our network to further build horizontal bridges between disciplines. This might be among the coming aims of our transborder collaborative actions and strengthen the already fruitful interactions of our network.



Summer 2013: 2 professors in neurobiology appointed at the Biozentrum Basel



Biozentrum Basel



Biozentrum Basel

Professor Sonja Hofer and Professor Thomas Mrsic-Flogel recently (August 2013) joined the neurobiology research groups at the Biozentrum, Basel.

Professor Sonja Hofer studies how neuronal circuits develop and change during learning. Professor Thomas Mrsic Flogel's work focuses on processing of visual information and the synaptic organization of circuits in visual cortex. A detailed report of their research interests will be published in the next Neurex newsletter (Spring 2014). In the meantime, we are pleased to welcome them in Neurex!

Prof. Kaspar Vogt, member of the Neurex scientific board. joins the University Of Tsukuba (Japan)

Appointed in 2006 at the Biozentrum, Prof Kaspar Vogt joined the scientific board of Neurex in 2009. Interested in the study of inhibitory synaptic transmission, Kaspar was chair of the board of the Pharmacenter, a Center first devoted to Pharma Sciences, and then dedicated to Translational Medicine and managed by Andrée Meier-Abt. (More info on pharmacenter.unibas.ch).

Recently appointed at the University of Tsukuba (Japan), Prof Kaspar Vogt will take the leadership of his lab from 2014, and investigate the neurobiology of inhibitory systems.

The scientific board of Neurex, as well as the whole Neurex network would like to express their deep gratefulness to Kaspar for the work he always enthusiastically performed in our network. Good luck, Kaspar! P.P.





Spreading Computational Neuroscience in Basel

The last decade has seen an unprecedented growth of experimental methods for investigating the anatomical, functional and molecular properties of large neuronal ensembles. The vast size, dimensionality and complexity of the data require sophisticated data analysis methods as well as a theoretical framework to help to interpret and drive experiments. Computational neuroscience, a young but thriving discipline, addresses these challenges by developing suitable analysis tools, models and theories. At this highly interdisciplinary interface, experimentalists and theoreticians need a common language to generate fruitful collaborations and share knowledge. In May 2013, a group of young scientists from the Friedrich Miescher Institute for Biomedical Research (FMI) founded the Computational Neuroscience Initiative Basel (CNIB). The mission statement of CNIB is to:



Introduction to Computational Neuroscience

Next, CNIB organizes a weekly lecture series "Introduction to Computational Neuroscience" at the FMI Basel. From September 16th - December 9th, 2013, outstanding researchers from all over Europe present key topics in computational and theoretical neuroscience. The course is eligible for 2 ECTS at the University of Basel (VV-No. 35768-01). Another lecture Series will begin in March 2014. For more information visit the CNIB web-page: www.fmi.ch/courses/Comp.Neuroscience/ A.W.



Support CNIB is supported by the FMI, Neurex and

1st Swiss Computational Neuroscience Summer School

From August 19th-24th CNIB hosted the 1st Swiss Computational Neuroscience Summer School at the FMI in Basel. 25 participants at the graduate and post-doc level were selected from applicants from all across Europe. With the aim to introduce experimental neuroscientists to computational neuroscience, the course focused on mathematical concepts of dynamical systems, neural coding, information theory and signal processing and their application to neuroscience. The faculty included speakers from Hebrew University in Jerusalem, from ETH Zurich and from FMI Basel

"The summer school has definitively broadened my understanding in mathematical theories", says Dhanasak Dhanasobhon (University of Strasbourg).

Every day, the students were challenged with extensive hands-on exercises, in which they had to write their own programs for data analysis and modeling. This was tough, but the students learned quickly. "The progress was amazing", says Dynamical Systems and Neural Coding teacher Yael Bitterman from the Hebrew University.

Obviously, the students had fun - and not only at the evening socials. "During the hands-on sessions, I solved problems that I had no idea how to deal with beforehand. I really enjoyed this process", says Kuo-Hua Huang, a postdoc at the FMI. A.W.

• foster dialogue and collaboration between experimental and computational neuroscientists • provide training in computational neuroscience for experimental neuroscientists A.W.

> The CNIB mmer School 2013

the Young Swiss Society for Neuroscience.

CNIB Summer School 2013: working group at the FMI,



The Joint Master in Neuroscience 2013-2015 class

In September 2013, 19 students have arrived in Strasbourg (France) from all over the world to follow the internationally renowned Joint Master in Neuroscience (JMN). Students of 12 different nationalities, speaking 15 languages altogether, will be trained in English to obtain a Master degree in Neuroscience.

Since 2006, the University of Strasbourg, together with its partners of Basel (Switzerland) and Freiburg-i-Br. (Germany) offers a complete training in Neuroscience, each partner city adding expertise in its own research domains, respectively Cellular and Integrative Neuroscience, Neurogenomics and Computational Neurosciences.

Students will be part of a two-year training which combines high level academic courses with extensive laboratory practice. They will share their time between lectures/practicals in the three partner cities and research work in the Neuroscience institutes of the upper Rhine valley. Since its birth in 2006, the JMN beneficiates from the support of NEUREX, through its highly developed Neuroscience network, its scientific workshops and meetings and its financial assistance.

JMN students successfully continue their path in Neuroscience once graduated. 13 students of the 2011-2013 promotion have obtained their Master degree, and 9 of them have begun a Doctorate in the three months following their graduation. Since 2006, 80% of JMN students have continued in PhD, and 11% have found work.

In October 2013, the JMN programme has been awarded an IDEX grant (Initiative of Excellence). IDEX are funds attributed by the French Government to 8 Universities in France (including the University of Strasbourg) in order to promote the development of multidisciplinary poles of excellence in higher education and scientific research. The JMN programme is one of the projects the University of Strasbourg has chosen to reward and encourage. More information about the Joint Master in Neuroscience on http://neuromaster.u-strasbg.fr/JMN01homepage.html. L.N.







5th Dec. 2013 / Meeting Multiple sclerosis: recent insights & new questions

6th Dec. 2013 / Controversy **Pathogenesis of Multiple Sclerosis:** Time to re-visit the primary autoimmune hypothesis?

Research on Multiple sclerosis

(MS) is strongly represented at the University of Basel. The Department of Neurology, headed by Prof. Ludwig Kappos, was crucially involved in the clinical development of a series of novel compounds in the treatment of MS. This clinical research is complemented by basic neuroimmunological research. The Clinical Neuroimmunology laboratory in the Department of Biomedicine (DBM) headed by Prof Raija Lindberg and Prof Tobias Derfuss uses novel molecular and immunological tools to decipher the pathogenesis of MS. Their research focuses on the identification of biomarkers for prognosis and therapeutic responses.

Using gene expression analysis of cerebral spinal fluid and blood samples from MS patients, Prof Tobias Derfuss and Prof Raija Lindberg (Clinical Neuroimmunoloav research aroup) focus on the molecular mechanisms of MS. Usina their expertise in the field, we were able to organize an exceptional scientific meeting with internationally highly respected speakers covering up-to-date topics of MS research and clinical care. We very much look forward to this meeting and thank the organizers, chairs, and speakers for their effort to make this event a success. T.D.

Multiple sclerosis (MS) is a demyelinating disease of the central nervous system (CNS) that causes neurological disability in young adults and affects worldwide about 2.5 million people. The most common form, relapsing remitting MS (RRMS), is characterized by intermittent attacks and subsequent partial improvement of neurological symptoms, with stable symptoms in between attacks, and comprises 85% of all patients at the onset of disease. However, up to 85% to 90% of untreated patients with RRMS develop secondary progressive MS (SPMS) characterized by continuous, irreversible neurological decline unassociated with relapses. A less common clinical phenotype, primary progressive MS (PPMS), encompasses 10% to 15% of the population with MS and tends to occur in a population that is older than that with RRMS. In PPMS, disease progression starts slowly and is characterized by continuous worsening without distinct relapses. Relapsing progressive MS is a rare subtype, observed in about 1% of patients, in which a progressive increase in disability from the onset is superimposed by occasional relapses.

The pathological hallmark of MS is the presence of focal areas of inflammation and demyelination in the brain and spinal cord white matter. Traditionally, MS has been considered to be an autoimmune disease in which dysregulated auto-reactive T cells in the periphery enter the CNS and, together with macrophages and B cells, proceed to destroy various CNS elements, particularly myelin. This concept has been reinforced by experimental animal models such as experimental allergic encephalomyelitis (EAE) in which immunization with myelin, myelin proteins, or myelin protein peptides induced immune-mediated destruction of CNS myelin. The pathological similarities between the MS animal model experimental allergic encephalomyelitis (EAE) and MS provided a unifying hypothesis for their pathogenesis, Traditionally, MS has been considered to be an autoimmune disease in which dysregulated auto-reactive T cells in the periphery enter the CNS and, together with macrophages and B cells, proceed to destroy various CNS elements, particularly myelin. On the other hand, axonal pathology, even though mentioned as early as 1936, remained controversial and the axonal component of MS pathogenesis received less attention. It is now demonstrated that multiple MS lesions of the brain and spinal cord indeed include demyelination, inflammation, gliosis and axonal damage. Since the late 1990's, MS research has refocused on the role of axonal pathology and neurodegeneration in MS pathogenesis. Progressive axonal loss provided a logical explanation for the transition from RRMS to SPMS and for continuous and irreversible neurological decline in SPMS. The neurodegeneration reflected by brain and spinal cord atrophy correlates with disease progression.

Multiple Sclerosis: Recent Insights and New Questions

December, 5th, 2013 Location: Kunstmuseum, St. Alban-Graben 8, Basel, Switzerland Credited one day CP for animal experimentation by the Swiss Association of Canton Veterinarians Organizers: Ludwig Kappos Raija Lindberg & Tobias Derfuss. Registration and more info on www.neurex.org or contact: Pascale.Piguet@unibas.ch



rreg IV Upper Rhine "Transcending borders with every project", CNRS, INSERM, Université de Strasboura, Région Alsace. Département du Bas-Rhin. Département du Haut-Rhin. Communauté Urbaine de Strasbourg, Bernstein Center Freiburg, Universität Freiburg, Universität Basel, Kanton Basel-Stadt, Kanton Base chaft. Contédération Hei

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NEUREX MEETING

PROGRAM

09.00 Introduction Ludwig Kappos (Basel, Switzerland)

SESSION 1

| NEUROPATHOLOGY OF MS – IS IT WHITE OR GREY? | | | |
|---|---|--|--|
| Chair | Nicole Schaeren-Wiemers (Basel, Switzerla | | |
| 09.10 | Relevance of grey matter lesions | | |

- for the pathogenesis of MS Christine Stadelmann (Göttingen, Germany) 09.40 Mediators of neuronal damage in CNS autoimmune disease Doron Merkler (Geneva Switzerland)
- 10.10 Mechanisms of CNS remvelination Catherine Lubetzki (Paris, France)
- 10.40 Coffee Break

SESSION 2

IMMUNOPATHOGENESIS OF MS - OF MICE AND MEN Chair Burkhard Becher, (Zürich, Switzerlo

- 11.10 Microbial trigger of nervous system autoimmunity Gurumoorthy Krishnamoorthy (Martinsried, Germany)
- 11.40 Antiviral Immune Responses in MS Jan Lünemann (Zürich, Switzerland)
- 12.10 Checkpoints on the way to the brain: how pathogenic T cells invade the CNS Alexander Flügel (Göttingen, Germany)

12.40 Lunch

SESSION 3 DO WE HAVE TOOLS FOR AN INDIVIDUALIZED PATIENT CARE? Chair Tobias Derfuss, (Basel, Switzerland

- 14.00 The new spectrum of NMO spectrum disorder: consequences for the therapeutical point of view Jérôme De Seze (Strasbourg, France)
- 14.30 Individual treatment selection and treatment monitoring with MRI: are we there yet? Till Sprenger (Basel, Switzerland)
- 15.00 What can biomarkers add? Jens Kuhle (Basel, Switzerland)
- 15.30 Coffee Break

SESSION 4 TREATMENTS TODAY - FROM CLINICAL AND INDUSTRIAL PERSPECTIVE Chair Ludwig Kappos, (Basel, Sw

- 16.00 MS treatments: the best is yet to come? Tobias Derfuss (Basel, Switzerlar
- 16.30 MS: complex trials in a brave new world Erik Wallström (Basel, Switzerland)

17.00 Closing remarks Ludwig Kappos, (Basel, Switzerland)

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Controversy

Controversy around ... The primary autoimmune hypothesis

Based on the overwhelming evidence that the disease has an inflammatory phenotype, it has been assumed that the pathophysiology of MS begins with an immune dysregulation then leading to an attack of the CNS.

Thus, the current concept still describes MS as a primary demyelinating inflammatory disease of CNS leading to secondary axonal degeneration. However, clinical experience has raised some troubling inconsistencies that cast reservation on this assumption, and some authors now question whether inflammatory demyelination is primary or secondary in the disease process, suggesting that MS might instead be a degenerative disorder. Several authors have suggested alternative models which propose that MS is a primary progressive disease in which there is a putative underlying degenerative process that would in turn trigger an autoimmune reaction, ranging from weak to strong.

In a recent article, Stys et al.^[2] propose that MS results from a convolution between progressive cytodegeneration and a variably primed immune system. Thus, in this model, the true primary event in MS might be cytodegenerative, with the inflammatory events reflecting secondary - but still very important - reactions, as during the RR form of MS.

If true, primary progressive MS would reflect more accurately the initiating events involved in the disease, and EAE, the most commonly used animal model of MS would better describe autoimmune inflammatory processes than the real cause of MS. The creation of transgenic mice in which oligodendrocytes are deficient for peroxisomes offers a model in which a phenomenon of axonal degeneration may precede demyelination and be followed by a strong inflammatory component^[3].

B cells vs T cells Recent studies support the concept that demye-

lination may occur by different mechanisms including T-cell mediated demyelination, antibody-mediated demyelination and primary oligodendrocyte death- in different subpopulations of MS patients.

B cells and antibodies account for the most prominent immunodiagnostic feature in patients with MS, namely oligoclonal bands. The identification of myelin oligodendrocyte glycoprotein (MOG) as a target for autoantibodymediated demyelination in EAE resulted in the re-evaluation of the role of B cell responses to myelin autoantigens in the immunopathogenesis of multiple sclerosis. However, the literature regarding antibodies to MOG in MS patients is confusing and contradictory.

Nevertheless, recent studies, however, have described high levels of antibodies to conformationally correct MOG in MS. In adult MS, such antibodies are rarely found and then only at low levels^[4]. In rat models of MOG-induced EAE, demyelination is antibody-dependent and reproduces the immunopathology seen in many cases of MS. In contrast, in mice inflammation in the CNS can result in demvelination in the absence of a MOG-specific B cell response, although if present this will enhance disease severity and demyelination^[5].

Genes and environment

Several genome-wide association study (GWAS) in MS have been performed in which the classic HLA-DRB1 risk locus stood out with remarkably strong statistical significance. In addition, P. De Jager reported recently [6] that there are now 110 established multiple sclerosis risk variants at 103 discrete loci outside of the major histocompatibility complex.

However, environmental factors have also been demonstrated to play a role in the incidence of MS -such as the latitude of the country and timing of birth, suggesting that there is a subtle interplay between genes and environment in the induction of MS. Furthermore, several

infectious agents have been suggested to play a role in triggering the disease.

Many questions remain unanswered regarding the pathophysiology of MS. MS symptoms are quite close to those of NMO (Neuromyelitis Optica) -which was for decades considered as a variant of MS. NMOSD (Neuromyelitis Optica Spectrum Disorder), an inflammatory disorder of the central nervous system characterized by severe attacks of optic neuritis and myelitis, is now considered to constitute a distinct entity. Some identified pathophysiological features of NMOSD -such as the production of anti-aquaporin 4 antibodies in a majority of patientshave consequences on the therapeutical point of view for the treatment of NMOSD.

A two-days event will take place on the 5th & 6th of December in Basel (Kunstmuseum):

On the 5th of December, a meeting entitled "Multiple Sclerosis: recent insights and new questions" will make an update of the current knowledge about the disease, going from the bench to the bedside. Moreover, the NMOSD (Neuromyelitis Optica Spectrum disorder), which shares some features, but also displays important differences with MS, will be addressed during this event.

On the 6th of December, a controversy debate will address different hypotheses about the putative role of inflammation vs degeneration, genes vs environment and B cells vs T cells in the actiology of the disease.

We would like to express our gratefulness to the organizers of the event, Dr. Raija Lindberg, Prof. Ludwig Kappos and Prof. Tobias Derfuss. as well as to all the scientists who kindly accepted to participate in the event.

3. Kassmann, C.M., C. Lappe-Siefke, M. Baes, B. Brugger, A. Mildner, H.B. Werner, O. Natt, T. Michaelis, M. Prinz, J. Frahm, and K.A. Nave Axonal loss and neuroinflammation caused by peroxisom

deficient oligodendrocytes. Nat Genet, 2007. 39(8): p. 969-76. 4. Mayer, M.C. and E. Meinl, Glycoproteins as targets of autoantibodies in CNS inflammation: MOG and more. Ther Adv Neuro Disord, 2012, 5(3); p. 147-59.

5. Jalesias, A., J. Bauer, T. Litzenburger, A. Schubart, and C. Linington, T- and B-cell responses to myelin oligodendrocyte glycoprotein in experimental autoimmune encephalomyelitis and multiple sclerosis, Glia, 2001, 36(2); p. 220-34.

Beecham, A.H., et al., Analysis of immune-related loci identifies 48 new susceptibility variants for multiple sclerosis. Nat Genet, 2013.

Pathogenesis of Multiple Sclerosis: Time to revisit the primary autoimmune hypothesis?

Introduction : Ludwig Kappos, Basel, Switzerland — 09.00

NEUREX

a one way cul-de-sac? Genetics vs. Environment / Moderator / George Ebers, Oxford, UK

Degeneration vs I Inflammation / Moderator / Doron Merkler, Geneva, Switzerland Klaus Nave, Göttingen, Germany — 09.10 09.25 — Burkhard Becher, Zürich, Switzerland on and Inflammatic a vicious cycle? Discussion — 09.40 10.00 — Coffee brea

The genetic architecture of MS susceptibility: priming the immune system for inflammatory demyelination

Discussion - 11 00

Edgar Meinl, München, Germany — 11.20 11.35 — Roland Martin, Zürich, Switzerland B cells in MS: Regulating lesion develop from inside and outside of the brain





Program Interreg IV Upper Rhine "Transcending borders with every project", CNRS, INSERM, Université de Strasbourg, Région Alsace, Dépar-

tement du Bas-Rhin, Département du Haut-Rhin Communauté Urbaine de Strasboura, Bernsteir Center Freiburg, Universität Freiburg, Universität Basel, Kanton Basel-Stadt, Kanton Basel-Landschaft, Confédération Helvétique

Organizers: Raija Lindberg, Ludwig Kappos, Tobias Derfuss & Pascale Piguet More info and registration on www.ne urex.org or contact Pascale.Pique

CONTROVERSY IN NEUROSCIENCE

Philip de Jager, Boston, USA — 10.30 10.45 — Gavin Giovannoni, London, UK How and when to intervene to prevent multiple sclerosi targeting the environment?

B cells vs. T cells / Moderator / Marco Prinz, Freiburg, Germany

The role of T cells in MS - Support from many angles

Discussion — 11.50 12.10 — Closing remarks: Ludwig Kappos, Basel, Switzerland



² Stys PK, G W Zamponi, J van Minnen, and J.J. Geurts. Will the real multiple sclerosis please stand up? Nat Rev Neurosci, 2012. 13(7): p. 507-14.

Dr. Fabrice Berna, Inserm Unit UMR S 1114



Psychiatrist, Inserm Unit U1114, Co-organizer (together with Prof. Jean-Marie Danion) of the meeting "The self: from autobiographical memories to the life story. Theory and psychopathology"

Dr. Fabrice Berna (born in 1978) started his medical studies in Nancy (France) in 1996. He came to Strasbourg in 2006, and worked as an assistant psychiatrist at the Department of Psychiatry of the University Hospital of Strasbourg. He did his PhD at INSERM U666 with Prof. Jean-Marie Danion on the topic of "Autobiographical memory and the self in schizophrenia". After he graduated in 2010, he did one year post-doctoral period at the Geriatric Psychiatric Department of the University Hospital of Heidelberg (Germany), where he worked on autobiographical memory in people with mild cognitive impairment. Since he came back to Strasbourg in 2011, he continues both his clinical and research activities on schizophrenia at the University Hospital of Strasbourg and at INSERM U1114 (ex U666). His research projects have been supported in 2013 by two awards for young researchers. In January 13th-14th 2014, he and Prof. Jean-Marie Danion will organize a workshop in Strasbourg, supported by Neurex, on the topic of "Autobiographical memory and the self".

INSERM Unit 1114: presentation & research interests

Schizophrenia is a severe mental illness, which affects about 1% of the general population. Delusions, hallucinations, disorganization of thoughts and behavior represent typical clinical manifestations of this illness, but patients also suffer from social withdrawal, apathy and severe cognitive deficits, which strongly impact their social functioning and vocational abilities. Cognitive deficits are considered as a core feature of schizophrenia: they are observed before the onset of the illness, persist and worsen into senescence, and account for the diversity of patients' functional outcomes more strongly than symptoms and other illness features.

The INSERM Unit 1114 (ex U666) entitled "Cognitive Neuropsychology and Pathophysiology of Schizophrenia" pioneered the study of cognition in schizophrenia and has acquired an expertise over the last 20 years in perception, memory and metamemory disorders in schizophrenia. This work has led to the development of cognitive remediation therapies to help patients compensate their cognitive deficits in dailv life.

Among cognitive deficits in schizophrenia is autobiographical memory impairment. These deficits are important to consider due to their deleterious impact on patients' social functioning and quality of life. Autobiographical memory entails traces of experiences (emotions, images, feelings) relating to past personal events. It also comprises knowledge about ourselves, about our past but also our beliefs, dreams or imaginations. Therefore, autobiographical memory is more than a simple cognitive function since it represents an essential component of the self. Looking autobiographical memory as the "memory of the self" has led researchers like Martin Conway (see Conway, 2005) to put forward cognitive models showing the reciprocal relationships between autobiographical memory and the self. Our scientific approach was grounded on Conway's model of

the Self-Memory System and the investigation of autobiographical memory in schizophrenia was thought as a way to understand the nature of the characteristics of the self in patients. In fact, alterations of the self in patients have been reported by psychiatrists since the first description of the illness. They were initially expressed in terms of "loss of inner unity of consciousness", or "impoverished sense of self" and were considered as being the core feature of the illness. However, at that time, the descriptions referred essentially to philosophical theories.

The originality of our approach consisted in using a cognitive psychopathology approach to patients with schizophrenia in order to investigate the cognitive mechanisms underlying major symptoms of the illness such as alterations of the self or persecutory delusion. We showed that patients have difficulty to recall past personal events (Riutort et al., 2003). Patients' autobiographical memories are vaguer, less vivid, and lack phenomenological details, which are critical to experience a sense of self during remembering (Danion et al., 2005; de Oliveira et al., 2009; Potheegadoo et al., 2012-2013). These alterations are particularly observed for memories of past events that played an important role in the development of the self (Bennouna-Greene et al., 2012) or events that have occurred at critical ages for identity construction (Cuervo-Lombard et al., 2007).

We also demonstrated that patients have difficulty to take distance from past significant event and to understand how past events had an impact on their self (Berna et al., 2011a-b). We finally provided preliminary evidence showing how persecutory delusion and autobiographical memory interact with each other in that, memories of situations associated with a feeling of malevolence from other people may contri-

bute to the emergence of persecutory beliefs, the latter affecting in turn the way memories of similar situations are later retrieved (Berna et al., in press).

Taken together, our research has renewed the understanding of clinical symptoms of schizophrenia that were, until recently, described using a clinical or philosophical perspective. We have developed innovative methods to investigate particular aspects of autobiographical memory and brought new understanding on Conway's model of the Self-Memory System by showing how schizophrenia alters specific components of this model.

innovative methods such as the use of a wearable camera to investigate further aspects of autobiographical memory in schizophrenia and develop cognitive remediation programs adapted to patients. Fabrice Berna recently obtained two awards for young clinician researchers to support these two research projects. We are also investigating life narratives of patients with schizophrenia and patients with other clinical conditions in order to examine the structure of these narratives and later integrate our findings in the development of therapeutic interventions for patients. This issue of the self as located between autobiographical memories and life story will be the topic of a coming Neurex workshop that will take place in Strasbourg in January 13th-14th 2014 and gather the most respected and recognized researchers in this domain.



Current research projects are oriented towards

F.B. & J.M.D.

- Bennouna-Greene M., et al. (2012) Self-images and related autobiographical memories in schizophrenia. Consc Coan, 21(1):247-57
- Berna F., et al. (2011) Self-Defining Memories related to Illness and their Integration into the Self in Patients with Schizophrenia. Psych Res. 189(1):49-54.
- Berna E et al. (2011) Impairment of Meaning Making relating to Self-Defining Memories in Patients with Schizophrenia Consc Cogn, 20(3):703-711
- Berna F., et al. (in press) Chronic persecutory delusion and autobiographical memories in patients with schizophrenia: A diary study. Isr J Psych Rel Sc.
- Conway M.A. (2005). Memory and the self
- J Mem Lang, 53(4), 594-628.
- Cuervo-Lombard C., et al. (2007). Autobiographical memory of adolescence and early adulthood events: an investigation in schizophrenic JINS, 13(2), 335-43.
- Danion J.-M., et al. (2005) Conscious recollection in autobiographical memory : an investigation in schizophrenia. Consc Cogn, 14:535-547.
- de Oliveira H., et al. (2009). Autonoetic awareness associated with the projection of the self into the future: an investigation in schizophrenic Psych Res 169(1)-86-87
- Potheegadoo J, et al. (2012) Distorted perception of the subjective temporal distance of autobiographical events in patients with schizophrenia Consc Cogn, 21(1):90-9.
- 10. Potheegadoo J., et al. (2013) Field visual perspective during autobiographical memory recall is less frequent among patients with schizophrenia Schizophr Res, 150(1): 88-92.

NEUREX WORKSHOP

The self: from autobiographical memories to the life story. Theory and psychopathology

January 13th - 14th, 2014

Location: MISHA



Partners: Program Interreg IV Upper Rhine "Transcending borders with every project", CNRS, INSERM, Universitä de Strasbourg, Région Alsoce, Département du Bos-Rhin, Département du Haul-Rhin, Communaulé Urbaine de Strasbourg, Bernstein Center Freiburg, Universität Freiburg, Universität Bosel, Kanton Basel-Stadt, Kanton Bosel-Landschaft, Canfédération Helvéflaue.

European Regional Development Fund

PROGRAM

beakers

(In alphabetical order): Dorthe Berntsen (Aarhus, DK) Martin Conway (London, UK) Jean-Marie Danion (Strasbourg, F) Lorna Goddard (London, UK) Tilmann Habermas (Francfort, G) Kate McLean (Washington, USA) Liliann Manning (Strasbourg, F) Jean-Louis Nandrino (Lille, F) Pascale Piolino (Paris, F) Jefferson Singer (New London, USA)

Abstract:

"THE SELF: FROM AUTOBIOGRAPHICAL MEMORIES TO THE LIFE STORY. THEORY AND PSYCHOPATHOLOGY"

The concept of "narrative self", first developed about 20 years ago, has paved the way for a new understanding of the nature and dimensions of the self in the fields of cognitive neurosciences, social psychology and philosophy. Regarding research in cognitive neuropsychology and social psychology, the exploration of the narrative self has benefited from extensive investiactions of self-narratives, in the form of either autobiographical memories or life narratives. The former refer to the memories of circumscribed past personal episodes, whereas the latter consist in whole-life stories bringing together the summary of past episodes into a coherent narrative. Despite their differences and specificity, autobiographical memories and life narratives have in common that, contrary to other forms of memory, the self is both the protagonist and author of the narrative: the self builds a narrative in which it plays the leading role. Hence, both autobiographical memories and life narratives represent critical foundations for particular aspects and dimensions of the self.

The concepts and tools developed by cognitive neuropsychology have shed light on the cognitive and metacognitive functions involved in our ability to retrieve past personal events, build a story of one's own life, imagine future goals, and reflect on the meaning of past episodes, in other words, our ability to "create a self". These functions may be impaired in neurological or psychiatric conditions and consequently have a detrimental impact on the self.

The aim of this symposium is to organize a gathering of researchers interested in the issues of self and self-norratives where they will be able to share recent findings about the nature of the self and ways of investigating it experimentally, from both theoretical and pathophysiological perspectives.

The authors are invited to indicate their preference for poster or oval presentation and send their obstract () invited to 300 works, with surbors and atflications to fabrice bernationity-strasbourg to

neurex

Coming Events

The Cognitive Thalamus

December 12th – 13th, 2013 Location: Maison de la Région I place Adrien Zeller Strasbourg – France



Organizers: Jean-Christophe Cassel & Anne Pereira de Vasconcelos

Registration, poster submission and more info on www.meurex.org or contact: Pascale.Piguet@unibas.ch



Partners: Program Interneg IV Upper Rhine "Transcending barders with every project". CNRS, INSERM, Université de Strasbourg, Région Alsace. Déportement du Bas-Rhin. Déportement du Haut-Rhin. Communauté Urbaine de Strasbourg, Berndein Center Frei burg, Universität Freiburg, Universität Basel, Kanton Bosel Stadt, Kanton Bosel-Landschoft, Confédération Helvétique.



The Thalamus is the largest diencephalic structure. It is made of about 60 nuclei and is now well known for, among numerous functions, playing a key role in various aspects of cognition. Thalamic lesions, as seen after stroke, traumatic brain injury, in Korsakoff syndrome or in other pathologies affecting thalamus integrity, are associated with a panel of cognitive dysfunctions including amnesia, aphasia, alterations in executive functions, attention, perseveration, etc. Beyond the traditional view considering the thalamus as an ensemble of nuclei relaying information from various subcortical areas to the cerebral cortex, and vice versa, particularly with respect to sensory and motor information, additional thalamic functions have been proposed more recently.

A Neurex meeting entitled "The Cognitive Thalamus" will take place on the December,

12th-13th 2013

in Strasbourg, Maison de la Région, 1, Place Adrien Zeller

This meeting proposes to focus on more recent views pointing to a specific role of some of the thalamic nuclei in dynamic interactions between limbic structures (i.e., hippocampus) and cortical areas implicated in cognitive functions. There will be a particular emphasis onprocesses underlying memory functions.

We would like to express our gratefulness to the organizers Anne Pereira de Vasconcelos & Jean-Christophe Cassel as well as to all the scientists who kindly accepted to participate in this event. Full program available on www.neurex.org

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The Neurex

for Welcome/

Coming back

Veurex

of researchers"

The objective of this program is to

encourage and support the research

work performed by young teams in

All details on www.neurex.org. S.K.

our academic laboratories.

March, 31st, 2014.

The dead-line for applying is

upport Program for Welcome

Coming back of researchers

"Support program

Bench to Bedside Basel, February 7th, 2014

The 2014 session of the Bench to Bedside will take place at the ZLF, Basel on the 7th of February 2014. Program, information and registration (from Dec. 2013) on http://www.neuronetwork.unibas.ch/ P.P.

NeuroTime Erasmus Mundus Joint Doctoral program:

The Second Edition is now running... The Third Edition is already on the starting blocks!



The NeuroTime program is an Erasmus Mundus Joint Doctorate program initiated by Neurex in 2011 and founded by the European Commission. It is coordinated by the University of Strasbourg.

The Second Edition of the Erasmus Mundus Joint Doctorate program was launched this October. For this new Edition, eight students are enrolled in the program and will perform their PhD studies between the six universities of the consortium: the University of Strasbourg, the University of Amsterdam, the Albert-Ludwig's University of Freiburg, the University of Basel, the Hebrew University of Jerusalem and the University of Bangalore.

In Strasbourg, the kick-off meeting took place on October 1st at the Institute of Cellular and Integrative Neuroscience (INCI, CNRS UPR3212) and was followed by a get together with Pretzels and Alsatian soda... local specialties often new for the students coming from all over the world (Bangladesh, India, Mexico, Montenegro, Netherlands, Panama and Turkey)!

Applications for the 3rd Edition of the program (starting in October 2014) are now already open and candidates holding a Master in Natural Science (or associated fields) can apply to one (or more) of the nine proposed collaborative projects.

Information can be found on our website at http://www.neurotime-erasmus.org/.

Neurex' Support Programs Laureates and Running calls

Neurex supports the start-up "Polyneuron Pharmaceuticals"

In the framework of its Program "Support to start-ups", the scientific committee of Neurex has attributed at the beginning of October a financial support to the startup Polyneuron Pharmaceuticals. The goal of the startup is to synthesize and test therapeutic molecules for the treatment of the autoimmune mediated disease "anti-MAG neuropathy". Polyneuron Pharmaceuticals will develop a new class of drugs to treat autoimmune mediated diseases that affect the nervous system. This new class of drugs attacks selectively one disease-causing autoantibody, without affecting the rest of the immune system. Congratulation to the team and we wish all the success for their project.

Neurex supports collaborative **Postdoctoral projects**

postdoctoral grants.

The selected collaborative projects are the following:

- AND ELECTRO-ENCEPHALOGRAPHY.

This collaborative project will run between Prof. Markus HEINRICHS (Department of Psychology, Laboratory for Biological and Personality Psychology, ALUFreiburg) and Prof. Daria KNOCH (Department of Psychology, Social and Affective Neuroscience, University of Basel).

- Health, Freiburg).
- HAVIOR AND MEMORY IN RATS.

This collaborative project will run between Dr. Robert D. KIRCH (Neuroelectronic Systems Lab, Dept. of General Neurosurgery, University Hospital Freiburg, Freiburg) and Prof. Jean-Christophe CASSEL (LNCA, University of Strasbourg - CNRS, Strasbourg).

A call was launched recently by Neurex for cross boarder collaborative fellowships. During its last meeting (October 7th), the scientific committee of Neurex evaluated the projects and attributed 4

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→ LINEAGE SPECIFICATION IN THE NERVOUS SYSTEM, THE OTHER SIDE OF PLASTICITY.

This collaborative project will run between Dr. Angela GIANGRANDE (IGBMC, ILLKIRCH / Strasbourg) and Prof. Heinrich REICHERT (BIOZENTRUM, University of Basel).

→ THE NEUROBIOLOGICAL BASIS OF INTER-GROUP BEHAVIOR IN HUMANS – INSIGHTS FROM NEUROIMAGING, NEUROPHARMACOLOGICAL MODULATION,

→ HOW TEMPORAL EXPECTANCY TRANSLATES MOTIVATION INTO EFFORT.

This collaborative project will run between Prof. Anne GIERSCH (INSERM U1114, Cognitive Neuropsychology and Pathophysiology of Schizophrenia, Psychiatry Department, University of Strasbourg) and Prof. Marc WITTMANN (Institute for Frontier Areas of Psychology and Mental

→ THE EFFECTS OF HIGH-FREQUENCY STIMULATION IN THE STRIATUM ON COGNITIVE BE-

We wish them a fruitful collaborative research.

Dr. Pascale Piguet

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This newsletter can be downloaded from our website http://www.neurex.org.

If you wish to regularly receive it in a paper format, please send a mail to: info@neurex.org

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Bi-annual.

Partners: Program Interreg IV Upper Rhine «Transcending borders with every project», CNRS, INSERM, Université de Strasbourg, Région Alsace, Département du Bas-Rhin, Département du Haut-Rhin, Communauté Urbaine de Strasbourg, Bernstein Center Freiburg, Universität Freiburg, Universität Basel, Kanton Basel-Stadt, Kanton Basel-Landschaft, Confédération Helvétique.



Coming events

NOVEMBER 2013

- 26th-28th Neurex Meeting «Understanding the neural basis of diurnality» Strasbourg, France
- 28th Neurex Workshop
 «The Chonobiotron: a platform dedicated to biological rhythms» Strasbourg, France

DECEMBER 2013

- 2nd CNIB lecture
 FMI, Basel, Switzerland
 Alexandre Pouget,
 University of Geneva
 «Probabilistic decision making and drift diffusion models»
- 5th-6th Neurex Meeting
 «Multiple Sclerosis»
 Basel, Switzerland
- 6th Neurex Controversy «Multiple Sclerosis»
 Basel, Switzerland
- 9th CNIB lecture
 FMI, Basel, Switzerland
 Christian Machens,
 Fundação Champalimaud, TBA
- 12th 13th Neurex Meeting
 «The Cognitive thalamus»
- Strasbourg, France 12th-13th - Symposium «Meditation & Time» Freiburg, Germany

JANUARY 2014

- 13th-14th Neurex Workshop «The self: from autobiographical memories to the life story. Theory and psychopathology» Strasbourg, France
 28th - Meet&Match (Neurex /BioValley)
- FEBRUARY 2014
 - 7th Symposium
 «Bench to Bedside»
 ZLF, Basel, Switzerland

Freiburg, Germany

Info & links

NEUROSCIENCE FEDERATIONS & LABORATORIES IN THE UPPER RHINE VALLEY

The Neurex network includes the 3 neuroscience federations of Basel (NNB, Neuroscience Network Basel), Freiburg (Neurag) and Strasbourg (Neuropôle) plus additional research units performing research in the NS. For a detailed description of the institutes making up the neuroscience landscape in Neurex, you may download our supplement to newsletter 26 on www.neurex.org.

Neuropôle

http://neurochem.u-strasbg.fr

NEURAG

http://www.neurag.uni-freiburg.de

NNB

http://www.neuronetwork.unibas.ch

NEWSLETTERS

Unibasel

http://www.unibas.ch/Section newsletter
A.L.UNi Freiburg

http://www.studium.uni-freiburg.de/ newsletter

Unistrasbourg

http://www.unistra.fr/index.php?id=1180

Computational Neuroscience: Bernstein newsletter

http://www.nncn.uni-freiburg.de/ Aktuelles-en/BernsteinNewsletter-en

This description is not definitive, but lists the events which are ready or in preparation. Please check again on www.neurex.org or in the next newsletter for additional events.

