

DEAR PARTICIPANTS!

On behalf of the Volkswagen Foundation I am pleased to welcome you to our Herrenhausen Conference on “Mental Health throughout Life”!

As the largest private research funder in Germany we would like to establish our Herrenhausen Conferences as a platform for a lively and inspiring dialogue on socially relevant and timely research questions. There can be no doubt, that mental health is not only a scientifically most exciting research field, but also a very pressing social topic. Mental illness exerts a heavy burden on affected individuals and societies as a whole, costing over 500 billion euros annually in Europe alone. For this conference we want to focus on mechanisms of vulnerability for mental illnesses over lifetime, and discuss particularly sensitive and susceptible phases of mental development. In the different sessions we will also look at new research directions and potentially new interdisciplinary co-operations which will be needed to develop new strategies for treatment and prevention at different stages. We are therefore very happy that representatives from different European funding organizations are participating in the meeting as it should be our common goal to develop approaches which will lead to urgently needed breakthroughs. In the final session these issues will be summarized by a plenary discussion led by Philip Campbell, and the results will also be made publicly available.

Dear participants! It is a pleasure to have you here in Hanover and to welcome you to Herrenhausen Palace. I do look forward to interesting debates on the challenges and opportunities as well as the limits and limitations of current research.

Yours sincerely,

Wilhelm Krull

Secretary General, Volkswagen Foundation

APRIL 3-5, 2013

MENTAL HEALTH THROUGHOUT LIFE

2ND HERRENHAUSEN CONFERENCE
ON MENTAL HEALTH

HERRENHAUSEN PALACE

PROGRAM

WEDNESDAY **APRIL 3, 2013**

5:00 P.M. WORDS OF WELCOME
AUDITORIUM **Wilhelm Krull**¹, Secretary General, Volkswagen Foundation

5:15 P.M. **OPENING SESSION**
AUDITORIUM CHAIR **Wilhelm Krull**, Secretary General, Volkswagen Foundation

MENTAL HEALTH EQUITY: A GLOBAL PERSPECTIVE

Pamela Y. Collins, National Institute of Mental Health

THE RISK OF MENTAL DISORDERS THROUGHOUT THE LIFESPAN:
SYMPTOM PROGRESSION, CRITICAL TRAJECTORIES AND CONSEQUENCES
FOR PREVENTION AND EARLY TARGETED INTERVENTION

Hans-Ulrich Wittchen, Technical University Dresden

7:15 P.M. GET TOGETHER
LOUNGE AREA

8:00 P.M. CONFERENCE DINNER AND EVENING PROGRAM
FESTSAAL

¹All academic titles have been omitted.

THURSDAY **APRIL 4, 2013**

9:00 A.M. SESSION 1

AUDITORIUM

EARLY BRAIN DEVELOPMENT

CHAIR **Aribert Rothenberger**, University of Goettingen

PSYCHOSOCIAL INFLUENCES ON EARLY BRAIN DEVELOPMENT

Sir Michael Rutter, King's College London

NEUROBIOLOGICAL CONSEQUENCES OF CHILD ABUSE

Charles B. Nemeroff, University of Miami

THE CONTRIBUTION OF EPIGENETICS TO OUR UNDERSTANDING OF THE DEVELOPMENTAL ORIGINS OF VULNERABILITY FOR PSYCHOPATHOLOGY

Michael J. Meaney, McGill University

10:20 A.M. PANEL AND PLENARY DISCUSSION

10:50 A.M. POSTER SESSION WITH FOCUS ON EARLY BRAIN DEVELOPMENT

LOUNGE AREA AND ADOLESCENCE / COFFEE BREAK

11:50 A.M. SESSION 2

AUDITORIUM

ADOLESCENCE

CHAIR **Andreas Meyer-Lindenberg**, Central Institute of Mental Health, Mannheim

THE TEEN BRAIN: INSIGHTS FROM NEUROIMAGING

Jay N. Giedd, National Institute of Mental Health

HOW YOUR FRIENDS AFFECT YOU:

SOCIAL NETWORKS AND MENTAL HEALTH IN ADOLESCENCE

Mark C. Pachucki, Massachusetts General Hospital/Harvard Medical School

DRUGS, THE ADOLESCENT BRAIN AND MENTAL HEALTH

Sir Robin M. Murray, King's College London

1:15 P.M. PANEL AND PLENARY DISCUSSION

1:45 P.M. LUNCHEBREAK

LOUNGE AREA

2:45 P.M. POSTER SESSION WITH FOCUS ON EARLY BRAIN DEVELOPMENT

LOUNGE AREA AND ADOLESCENCE

3:45 P.M. SESSION 3

AUDITORIUM

ADULTHOOD

CHAIR **Andreas Meyer-Lindenberg**, Central Institute of Mental Health, Mannheim

THE URBAN RISK IS REAL, BUT STILL MYSTERIOUS

Lydia Krabbendam, VU University Amsterdam

NEUROECONOMICS – INVESTIGATING THE BIOLOGICAL FOUNDATION OF HUMAN CAPITAL DEVELOPMENT AND WELLBEING

Bernd Weber, University of Bonn

MENTAL HEALTH AND LABOUR: JOBS FOR PEOPLE WITH MENTAL ILLNESS, AND MENTAL ILL-HEALTH IN THE WORKPLACE – TWO SIDES OF ONE COIN?

Thomas Becker, University of Ulm

5:30 P.M. PANEL AND PLENARY DISCUSSION

6:00 P.M. POSTER SESSION WITH FOCUS ON ADULTHOOD AND INTERVENTIONS /

LOUNGE AREA APERITIF

7:00 P.M. DINNER

LOUNGE AREA

FRIDAY **APRIL 5, 2013**

9:00 A.M. SESSION 4

AUDITORIUM PROMOTING MENTAL HEALTH AND INTERVENTIONS

CHAIR **Helge Frieling**, Hannover Medical School

BEYOND SINGLE MAGIC BULLETS: TRUE HEALTHCARE INNOVATION FOR SERIOUS NEUROPSYCHIATRIC DISORDERS

Husseini K. Manji, Janssen Research & Development, LLC

REWIRING FAULTY CIRCUITS –

THE PROMISE OF DEEP BRAIN STIMULATION FOR PSYCHIATRY

Thomas Schläpfer, University Hospital Bonn

CURRENT PROGRESS IN PSYCHOTHERAPY: THE EXAMPLE OF DEPRESSION TREATMENT

Mathias Berger, University Hospital Freiburg

10:20 A.M. PANEL AND PLENARY DISCUSSION

10:50 A.M. POSTER SESSION WITH FOCUS ON ADULTHOOD AND INTERVENTIONS / COFFEEBREAK

11:50 A.M. FROM BENCH TO BEDSIDE AND BACK:

CONFERENCE SUMMARY AND PLENARY DISCUSSION WITH

Pamela Y. Collins, National Institute of Mental Health

Andreas Meyer-Lindenberg, Central Institute of Mental Health, Mannheim

Husseini K. Manji, Janssen Research & Development, LLC

Sir Michael Rutter, King's College London

HOST **Philip Campbell**, nature

1:10 P.M. CLOSING REMARKS BY WILHELM KRULL

1:15 P.M. LUNCH AND END OF CONFERENCE

SPEAKERS CHAIRS

PAMELA Y. COLLINS

THOMAS BECKER

MATHIAS BERGER

JAY N. GIEDD

LYDIA KRABBENDAM

HUSSEINI K. MANJI

MICHAEL J. MEANEY

SIR ROBIN M. MURRAY

CHARLES B. NEMEROFF

MARK C. PACHUCKI

SIR MICHAEL RUTTER

THOMAS E. SCHLAEPFER

BERND WEBER

HANS-ULRICH WITTCHEN

PETER FALKAI

HELGE FRIELING

ANDREAS MEYER-LINDENBERG

ARIBERT ROTHENBERGER

PAMELA Y. COLLINS

NATIONAL INSTITUTE OF MENTAL HEALTH

Dr. Pamela Y. Collins is the director of the Office for Research on Disparities & Global Mental Health and Associate Director for Special Populations at the National Institute of Mental Health (NIMH). Prior to joining NIMH, she was a professor in the departments of epidemiology and psychiatry at Columbia University, where she conducted research on the mental health aspects of the AIDS epidemic, and through her research worked to improve access to HIV prevention for people with severe mental illness as well as access to mental health care services for people with HIV domestically and internationally. Dr. Collins's research has focused on the HIV prevention needs of ethnic minority women with severe mental illnesses and the contribution of social stigma related to mental illness and ethnicity to women's HIV risk in the United States. Internationally, she has conducted and evaluated the training of healthcare providers in mental health, HIV/AIDS transmission, prevention, and counselling in Latin America and sub-Saharan Africa. Dr. Collins has served as a consultant to the Directorate of Mental Health in South Africa and as a member of its Task Team for Policy Guidelines on HIV/AIDS in Psychiatric Institutions. She serves on the Advisory Group for the Movement for Global Mental Health and is a member of the World Health Organization's Mental Health Gap Action Programme Forum. Dr. Collins was one of the editors of the 2011 Lancet series on Global Mental Health, and she is one of the leaders of the Grand Challenges in Global Mental Health initiative.

MENTAL HEALTH EQUITY: A GLOBAL PERSPECTIVE

Neuropsychiatric disorders account for a significant proportion of the burden of noncommunicable disease in high, middle, and low-income countries. Yet, marked inequities in financing of health services and supply of human resources for mental health care are evident between countries and within countries. Global mental health research requires that investigators address questions of equity while acknowledging the global economic, political, and cultural interconnections that shape the experience of mental illness and the lives of people with mental illness. Consequently, researchers engage with populations affected by poverty, displacement, and migration; they recognize the social consequences of global events on local communities. Within countries, mental health inequities must be examined through the complex relationships of socioeconomic status, culture, sex, gender, genetics, race and ethnicity. A global research perspective can facilitate exploration of the underlying mechanisms that produce difference and disparity in diverse populations. The presentation will discuss these issues.

THOMAS BECKER

UNIVERSITY OF ULM

Thomas Becker graduated in 1982, worked on psychiatric reform in Turin, Italy in 1982-1983 (doctoral thesis), subsequently worked in internal medicine and neurology, started his specialist training in psychiatry in 1987, qualified as a psychiatrist in 1991, worked as senior medical staff and was appointed lecturer (1994) at the Department of Psychiatry of Würzburg University. His research was on neuroradiology findings in patients with psychotic disorders. In 1995, he moved to the Section of Community Psychiatry at the Institute of Psychiatry, King's College London (Humboldt Foundation scholarship) and was involved in mental health services research and European trials. From 1998 to 2002 he worked at the Department of Psychiatry of Leipzig University, where he held a Public Health professorial appointment. He was appointed head of the Department of Psychiatry II of the University of Ulm (at the Bezirkskrankenhaus Günzburg) in 2002. His research interest is in mental health services research, social psychiatry and public mental health.

MENTAL HEALTH AND LABOUR:

JOB FOR PEOPLE WITH MENTAL ILLNESS, AND MENTAL ILL-HEALTH IN THE WORKPLACE – TWO SIDES OF ONE COIN?

Interventions aiming at labour market integration follow the principles of 'first train then place' (gradual) or 'first place then train' (direct job placement). There is strong evidence that in both the US and Europe 'first place then train' or supported employment (SE) interventions are superior in terms of job integration to 'treatment as usual' or traditional vocational rehabilitation. Recent work suggests that SE is effective also in improving clinical and service use outcomes, and that positive effects on psychopathology and service utilisation may be consecutive to job placement (Kilian et al 2012). Results are influenced by socioeconomic context and characteristics of the social security system. There is a high level of interest in workplace mental health (and in effective mental health promotion interventions), and there is evidence of high levels of mental distress in the workforce in modern market economies. In a German study, a stress management intervention in the workplace was effective in lowering perceived stress reactivity and sympathetic nervous system activation in lower and middle management employees (Limm et al 2011). Rothermund et al (2012) presented a mixed methods implementation study of a new model of care, bridging the gap between company-supported mental health care and consultation-liaison psychosomatic care.

The dual task of identifying and implementing effective interventions for job integration among people with mental disorders and of securing mental health in the general workforce is a key challenge to the field of mental health services research.

MATHIAS BERGER

UNIVERSITY HOSPITAL FREIBURG

Mathias Berger received his MD degree from the University of Cologne in 1974. From 1974 to 1982 he was a Resident at the Departments of Psychiatry and Neurology of the University of Cologne, at the Max-Planck-Institute of Psychiatry in Munich and at the Kaufbeuren District Hospital. From 1983 to 1985 he was Deputy Head of the Department of Psychiatry and later Head of the Department of Psychiatry II at the Max-Planck-Institute of Psychiatry in Munich. In 1986 he was appointed Deputy Director and Professor of Psychiatry at the Central Institute of Mental Health in Mannheim. Since 1990 he has been Director of the Department of Psychiatry and Psychosomatics of the University Hospital in Freiburg. He was the President of the German Society of Sleep Research and Sleep Medicine from 1993 to 1994 and the President of the German Society of Psychiatry, Psychotherapy and Neurology from 2002 to 2004. In 1986 Prof. Berger was co-recipient of the Anna-Monika-Foundation award for his research on depression. He is a member of the German Academy of Sciences Leopoldina.

CURRENT PROGRESS IN PSYCHOTHERAPY: THE EXAMPLE OF DEPRESSION TREATMENT

In contrast to the area of psychopharmacological treatment, which is presently characterized by stagnation, the field of psychotherapy for psychiatric disorders has experienced significant progress and innovation over the past few decades. This development is largely due to the fact that traditional gaps and obstacles in the field of psychotherapy have been overcome. The advent and development of specific disorder-tailored psychotherapeutic techniques helped to bridge the gap between competing schools of psychotherapy and these disorder-specific psychotherapies are considered first line-treatment options for several psychiatric disorders, with a large evidence base from randomized controlled trials. Furthermore, the tremendous progress in brain imaging methods revealed that mental disorders are linked to dysfunctional brain circuits and that successful psychotherapy not only improves subjective well-being but is accompanied by a normalization of these dysfunctional brain circuits. A new discipline called "Neuropsychotherapy" focuses on the new bi-directional interactions between cognition, emotions and behaviour on the one hand and neurobiological dysfunctions on the other hand. These interactions argue for a stronger integration of psycho-physiological approaches into current research avenues. It can be hypothesized that by influencing neuronal circuit dysfunctions through biofeedback an improvement of psychopathology may occur. A similarly exciting strategy could aim at improving the effectiveness of psychotherapeutic methods by add-on application of hormones like Oxytocin or drugs like D-Cycloserin. These strategies supposedly enhance psychotherapeutic approaches by either increasing interpersonal confidence or enhancing processes of memory consolidation. The treatment of depression is seen as a stimulating field to subject these current developments to rigorous empirical test.

JAY N. GIEDD

NATIONAL INSTITUTE OF MENTAL HEALTH

Jay N. Giedd, M.D. is a practicing Child and Adolescent Psychiatrist, Chief of Brain Imaging at the Child Psychiatry Branch of the National Institute of Mental Health, and adjunct Professor at the Johns Hopkins Bloomberg School of Public Health in the Department of Population, Family & Reproductive Health. Since 1991 Dr. Giedd has been conducting research on the biological basis of cognition, emotion, and behaviour with a particular emphasis on the teen years. As one of the world's most cited child and adolescent psychiatrists, his longitudinal studies combining brain imaging, genetics, and neuropsychology have had a transformative impact in many realms including psychology, psychiatry, clinical care, the judicial system, parenting philosophy, adolescent medicine, substance abuse, public policy, and education reform. In addition to his over 200 scientific papers and being the recipient of many national and international academic awards, Dr. Giedd's work has been widely covered in the general media, including the May 10, 2004 cover of Time magazine. Dr. Giedd will present data from his 21-year study of over 3,000 subjects on the trajectories and influences of brain development in health and illness. He will explore how the neurobiology of the adolescent brain interacts with family, social, educational, media, and other factors to affect the lives of teens.

THE TEEN BRAIN: INSIGHTS FROM NEUROIMAGING

The adolescent brain has been forged by evolution to have different features than those of a child or an adult, but it is not broken or defective. Phenomenal ability to adapt to environmental demands (i.e. plasticity), dynamic changes in the brain's reward circuitry, and dramatic alterations in how the different components of the brain interact with each other make adolescence a time of great opportunity but also a time of vulnerability. Adolescence is the most common time for the emergence of many psychiatric conditions, including anxiety and mood disorders, eating disorders, psychosis, and substance abuse. Neurobiological maturation drives behavioural changes of increased risk taking, heightened sensation seeking, and a move away from parent to peer affiliation. These behaviours are not inherently bad but may contribute to an increased likelihood for addiction, unwanted teen pregnancy, sexually transmitted diseases, motor vehicle accidents, or violent criminal activity. Neuroimaging investigations are beginning to map trajectories of brain development in health and illness, discern the influences - for good or ill - on these trajectories, and explore how the biological changes interact with the behavioural changes and social context to affect the lives of teens and their families. Dr. Giedd will summarize results from his 21 year ongoing longitudinal brain imaging study encompassing over 9,000 scans from 3,000 youths; discuss the impact of the digital revolution on the way teens learn, play, and interact; and speculate on future directions of adolescent neuroscience research.

LYDIA KRABBENDAM

VU UNIVERSITY AMSTERDAM

Lydia Krabbendam is a tenured professor at the Research Institute LEARN!, VU University Amsterdam.

In addition, she holds a registration as clinical neuropsychologist. Her research focuses on the normal and abnormal development of social cognition in adolescence and early adulthood, in particular psychosis, and on the impact of the social environment on this development. As an example of the latter, she has published about the impact of growing up or living in an urban environment on the development of psychotic symptoms. More recently, she has investigated the mechanisms through which this urban effect may occur by focusing on the effects of experimental exposure to nature or urban settings on indices of cognitive functioning. Krabbendam has (co-) authored over 100 papers in international peer-reviewed journals and is the supervisor (co-promotor) of 10 current and 10 completed PhD theses. She has received large personal grants from the Netherlands Organisation for Scientific Research for her work on the cognitive and neural mechanisms of trust and paranoia (VIDI, 2007) and the relationship between the social environment and cognitive and brain development (VICI, 2011).

THE URBAN RISK IS REAL, BUT STILL MYSTERIOUS

Being raised in the city has been associated with increased risk for mental disorders. For example, research has consistently shown that around one third of all schizophrenia incidences may be related to environmental factors operating in the urban environment (Krabbendam & van Os, 2005). These impact on developing children and adolescents to increase the later expression of psychosis-like at-risk mental states and overt psychotic disorders.

Neuroimaging and neuropsychological studies have begun to elucidate the neural mechanisms underlying the urban effect. A recent functional imaging study suggested that urban upbringing and current city living both have effects on the neural correlates of social stress processing (Lederbogen et al., 2010). In addition, several studies have suggested that experimental exposure to natural settings has positive effects on stress-sensitivity, self-control and other-regarding behaviour. These studies show that it is possible to further investigate epidemiological findings using neuroimaging and neuropsychological methods. Yet, there are many factors in the urban environment that may potentially play a role in association with mental health outcomes. This means that the next step for research is to investigate much more fine-grained aspects of city living, some of which may convey negative effects on wellbeing, while other factors may have positive effects. Given that the percentage of the world population living in cities will only increase, it becomes crucially important to understand the effects of city living on mental health.

HUSSEINI K. MANJI

JANSSEN RESEARCH & DEVELOPMENT, LLC

Husseini K. Manji, MD, FRCPC is Global Therapeutic Head for Neuroscience at Janssen Research & Development, LLC, a division of Johnson & Johnson. Previously, he was Chief, Laboratory of Molecular Pathophysiology & Experimental Therapeutics, NIH, and Director of the NIH Mood and Anxiety Disorders Program. Dr. Manji received his B.Sc. and M.D. from the University of British Columbia. He completed fellowship training at the NIMH and undertook additional training in cellular and molecular biology. His research has focused on investigation of disease- and treatment-induced changes in gene and protein networks that regulate synaptic and neural plasticity. His work has led to the investigation of novel therapeutics for patients with refractory psychiatric illnesses. Dr. Manji has also been involved in medical and postgraduate neuroscience education and has published about the molecular and cellular neurobiology of neuropsychiatric disorders and the development of novel therapeutics. Dr. Manji has received numerous distinguished scientific and academic awards and was inducted into the U.S. Institute of Medicine of the National Academies in 2008. He has served as Chair of the American College of Neuropsychopharmacology, is an advisor to the Society of Biological Psychiatry, and serves on a variety of editorial boards of scholarly journals. He holds voluntary leadership positions in many organizations devoted to the advancement of neuroscience and advocacy for people with mental illness. He is a member of the Howard Hughes Medical Institute – NIH Research Scholars Program Advisory Committee.

BEYOND SINGLE MAGIC BULLETS: TRUE HEALTHCARE INNOVATION FOR SERIOUS NEUROPSYCHIATRIC DISORDERS

A host of cutting-edge approaches – from genomics to data mining, proteomics to biomarkers, pathway modelling to protein engineering, neuroimaging to optogenetics – is revolutionizing the development of novel neuroscience treatments. Nevertheless, although many believe we are in a golden age of neuroscience, scientific breakthroughs have not yet resulted in commensurate therapeutic advances.

Severe neuropsychiatric disorders are characterized by dysfunction in diverse biological systems, including the intricate network of limbic, striatal, and fronto-cortical circuits that mediate mood state, cognition, self-awareness, and insight. Compelling evidence suggests that impaired signalling pathways play a role in the pathophysiology of these disorders, and that mood stabilizers significantly affect signalling pathways regulating neural and synaptic plasticity. It is likely that abnormalities in cellular plasticity cascades also underscore the impaired structural plasticity seen in morphometric studies. These changes in structural plasticity appear to regulate both resilience and the long-term course of illness. In the search for improved therapeutics to treat these illnesses, several promising synaptic plasticity and neurotrophic strategies are being investigated.

Equally important to these scientific advances, however, is the paradigm shift that must accompany future research. The move from a ‘diagnose and treat’ approach to a ‘predict and pre-empt’ model will become increasingly crucial. In this respect, R&D organizations will need to develop novel solutions that encompass meaningful and measurable patient outcomes. These will undoubtedly involve holistic solutions of which medication is one component, but many other modalities and services are brought together to optimize outcome.

MICHAEL J. MEANEY

MCGILL UNIVERSITY

Michael Meaney is a James McGill Professor of Medicine at Douglas Mental Health University Institute of McGill University and Director of the Maternal Adversity, Vulnerability and Neurodevelopment Project and of the Developmental Neuroendocrinology Laboratory. Meaney also joined the Singapore Institute for Clinical Sciences and leads the Integrative Neuroscience Program. Meaney was educated at Loyola College of Montreal and received his PhD from Concordia University (Montreal) with post-doctoral training at The Rockefeller University in New York. Meaney's primary research interest is that of understanding the mechanisms for the stable effects of early experience, particularly maternal care, on gene expression and brain development. The Meaney lab has authored over 320 papers and been awarded a Distinguished Scientist Award from the National Alliance for Research in Schizophrenia and Affective Disorders, the Lougheed Prize (Alberta Heritage foundation for Medical Research), the Klerman Award (Cornell University), the Patricia Barchas Award (Research in Socio-physiology), and the Transatlantic Prize (British Endocrine Society), among others. In 2012 Meaney was awarded the Order of Canada and the Distinguished Scientist award from the American Psychological Association. The Meaney lab was designated a "Mostly Highly Cited Researcher" in Neuroscience by the Institute for Scientific Information.

THE CONTRIBUTION OF EPIGENETICS TO OUR UNDERSTANDING OF THE DEVELOPMENTAL ORIGINS OF VULNERABILITY FOR PSYCHOPATHOLOGY

The quality of the early family environment shapes phenotypic variation and influences vulnerability for a wide range of mental disorders. Our studies attempt to define the mechanisms by which variations in parent – child interactions influence the expression of genes in brain regions associated with mental health outcomes. We focus on epigenetic mechanisms, notably DNA methylation and histone modifications that regulate gene transcription. Studies in rodents show that maternal care directly alters the epigenetic state of genes, such as the glucocorticoid receptor gene in the offspring, providing a basis for stable individual differences in stress reactivity. Translational studies using human tissue show that a history of childhood maltreatment also associates with epigenetic modifications that influence glucocorticoid receptor expression and differences in stress reactivity. More recent studies reveal widespread effects of maternal care on the rodent 'epigenome' to such an extent that effects appear to occur across the genome. Studies in humans using genome-wide approaches support this conclusion and suggest that epigenetic states at specific genomic regions emerge as a function of gene – environment interdependency. A major issue in the emerging field of 'translational epigenetics' is that of its application as a potential 'marker' of vulnerable states associated with childhood experience.

SIR ROBIN M. MURRAY

KING'S COLLEGE LONDON

Robin Murray is professor of psychiatric research at the Institute of Psychiatry, King's College and indeed has spent most of his working life there, apart from one year at the National Institute of Mental Health in the USA. His particular interest lies in psychosis, and he and his colleagues have contributed to the understanding that environmental factors such as obstetric events, heavy cannabis use and migration increase the risk of developing schizophrenia-like psychoses. He is also involved in testing new treatments for psychotic illnesses, and cares for people with psychosis at the South London and Maudsley NHS Trust. He has written numerous articles, not all of them boring! According to ISI ScienceWatch, he is the second most frequently cited psychiatrist outside the USA; he has supervised 52 PhDs. and 35 of his students have become professors. He was elected a Fellow of the Royal Society in 2010 and received a knighthood in 2011.

DRUGS, THE ADOLESCENT BRAIN AND MENTAL HEALTH

Adolescence is a time of exploration, including for many exploring the effect of drugs; especially cigarettes, alcohol, and cannabis. While cigarette smoking has generally declined in the developed world, and drinking has not changed dramatically, the use of cannabis became steadily more common in the last quarter of the 20th century. In the last decade, the use of cannabis slightly declined in Europe but the starting age fell. It is relatively safe; but as it is so commonly used, any small risk of adverse effects can be important. Since 2002, nine cohort studies have shown that regular use of cannabis carries a small but significantly increased risk of developing psychotic illnesses like schizophrenia. The risk of psychosis appears to be higher in those with a family history of the disorder, in those with a psychosis-prone personality, and in those who start using cannabis in early adolescence. In accord with the latter, animal studies suggest that the impact on the brain may be greater and more prolonged in juvenile animals. The risk increases with the frequency of use and with the potency of the cannabis used. In this respect, it is interesting that high potency cannabis such as the "skunk" widely available in UK contains about 14-18% tetrahydrocannabinol (THC) as opposed to about 4-5% in resin (hash); it also contains much less cannabidiol (CBD) than resin. We and others have carried out experimental studies showing that intravenous injection of THC can produce an acute psychotic state; this can be partially prevented by pre-treatment with CBD. Imaging studies also have shown that CBD appears to produce opposite effects to THC. There is also some evidence that some individuals are more susceptible to cannabis-related psychoses than others; current research focuses on the genes COMT and AKT1. There is less evidence concerning the effect of cannabis on other mental illnesses; but one recent follow-up study has suggested that heavy use of cannabis in adolescence may cause permanent loss of up to 8 points of IQ.

CHARLES B. NEMEROFF

UNIVERSITY OF MIAMI

Charles B. Nemeroff is the Leonard M. Miller Professor and Chairman of the Department of Psychiatry and Behavioral Sciences, and Director of the Center on Aging at the University of Miami Miller School of Medicine. He is past president of the American College of Psychiatrists and the American College of Neuropsychopharmacology. His research has focused on the neurobiology of mood and anxiety disorders with a focus on the long term consequences of child abuse and neglect and how these changes increase vulnerability for psychiatric disorders in adulthood. He has published more than 950 research reports and reviews, and 15 books. He is a member of the Institute of Medicine of the National Academy of Sciences (USA).

NEUROBIOLOGICAL CONSEQUENCES OF CHILD ABUSE

Genetic, brain imaging and neurotransmitter studies have revealed the long-term consequences of child abuse and neglect and examined how these changes increase vulnerability to mood disorders in adulthood. Exposure to trauma during childhood increases the risk of certain psychiatric disorders beyond the risk associated with adult violence exposure. We have demonstrated a number of long-term neurobiological consequences of child abuse and neglect, including structural and functional brain imaging changes, neuroendocrine and immune alterations. In particular, alterations in the hypothalamic-pituitary-adrenal (HPA) axis, a major mediator of the stress response, contribute to the long-term effects of early life trauma. However, not all exposed individuals demonstrate altered HPA axis physiology, suggesting that genetic variations influence the psychiatric consequences of trauma exposure. Variants in the gene encoding the CRR1 receptor, FKBP5 and others interact with adverse early environmental factors to predict risk for stress-related psychiatric disorders. Studies of the CRF system thus suggest molecular targets for new drug development, biological risk factors, and predictors of treatment response. In addition, the effect of abuse may extend beyond the immediate victim into subsequent generations as a consequence of epigenetic effects transmitted directly to offspring and/or behavioural changes in affected individuals. Recognition of the biological consequences and transgenerational impact of trauma has critical importance for both treatment and research as well as public health policy.

MARK C. PACHUCKI

MASSACHUSETTS GENERAL HOSPITAL

Mark C. Pachucki is a sociologist whose research investigates the roles that life circumstances and social networks play in shaping health. Traditionally, social science and medicine have had difficulty considering how the structure and meanings of relationships between people relate to well-being. Yet by understanding how people are connected, we gain insight into how physical and mental health change at the interpersonal and population level over time. Dr. Pachucki was recently appointed as a Robert Wood Johnson Health & Society Scholar at University of California. He is currently on the faculties of the Morgan Institute for Health Policy and the Center for Child and Adolescent Health Research and Policy at Massachusetts General Hospital.

HOW YOUR FRIENDS AFFECT YOU: SOCIAL NETWORKS AND MENTAL HEALTH IN ADOLESCENCE

The roles that our peers play in shaping mental health during adolescence matter a great deal. Peers inform hundreds of daily decisions about health behaviours in the moment – among them eating and exercise patterns, drinking, drug use, and unsafe sexual behaviour. Through peer reinforcement these choices can be transformed over time into lifelong habits. Identifying peers on the basis of patterns of daily interactions between adolescents can help parents, teachers, and health professionals to target more effective health interventions. I discuss new research on social network dynamics and chart the recent shift toward computational social science for understanding mental health and informing prevention strategies.

SIR MICHAEL RUTTER

KING'S COLLEGE LONDON

Sir Michael Rutter has been a consultant psychiatrist at the Maudsley Hospital since 1966. He became the first UK Professor of Child Psychiatry at the Institute of Psychiatry from 1973-1998 and is now Professor of Developmental Psychopathology. He set up the MRC Child Psychiatry Research Unit and the Social, Genetic and Developmental Psychiatry Centre. His research has included studies of school and family influences on children's behaviour; autism; and ERA adoptee studies on the effects of severe deprivation. He has a special interest in the interplay between genetic and psychosocial risk factors and in resilience. He is a Fellow of the Royal Society and a Founding Fellow of the Academia Europaea and the Academy of Medical Sciences. He has received numerous international honours and has published around 500 scientific papers and over 50 books.

PSYCHOSOCIAL INFLUENCES ON EARLY BRAIN DEVELOPMENT

Four main topics are considered. First, does 'experience-expectant' biological programming, as shown for the visual cortex, apply to other brain systems? How does 'experience-adaptive' programming differ? How do both differ from the changes in brain structure and function that derive from later experiences that do not involve a sensitive period? Do these reflect brain plasticity changes? Second, how do the effects of 'pure' psychosocial deprivation on brain growth differ from the effects of subnutrition, and what are the processes involved at the neural level? Third, what is involved in the biological embedding of experiences – such as through epigenetic effects or effects on the HPA axis. Do these account for psychological and psychopathological effects, and do they differentiate between sensitizing and steeling effects? Fourth, gene-environment interactions (GxE) involve chronic early adversity more than later experienced acute stressors. The implication is that the biological causal pathways involved in G and in E effects are close together, and that they extend over a long time frame. What are the biological pathways and how do they operate? Findings on the four topics will be used to consider the challenges for the determination of clinical implications.

THOMAS E. SCHLAEPFER

UNIVERSITY HOSPITAL BONN

Thomas E. Schlaepfer, MD is the Vice Chair of Psychiatry and Psychotherapy at the University Hospital Bonn, Germany, where he is also Dean of Medical Education; he holds a joint appointment as Associate Professor of Psychiatry and Mental Hygiene at the Johns Hopkins University, Baltimore, MD. He is a fellow of the American College of Neuropsychopharmacology (ACNP) and chair of the Task Force on Brain Stimulation of the World Federation of Societies of Biological Psychiatry. He received his medical training at the University of Bern, Switzerland. He worked as Assistant Professor of the Department of Psychiatry and Behavioural Sciences at the Johns Hopkins University School of Medicine, Baltimore, Maryland. Since 1997, he has been Associate Professor of the same department, as well as the Department of Mental Hygiene at the Johns Hopkins University School of Medicine in Baltimore. Dr. Schlaepfer focused the research of his group on translational, functional neuroimaging and clinical effects of neuromodulation interventions (including repetitive transcranial magnetic stimulation, vagus nerve stimulation, magnetic seizure therapy and deep brain stimulation) for treatment resistant major depression. After the first human application in the year 2000, his group developed the clinical use of magnetic seizure therapy (MST) for depression and more recently the hypothesis-guided therapeutic use of deep brain stimulation of parts of the human reward system (Nucleus Accumbens and Medial Forebrain Bundle) in the same disorder. In light of the significance of neuroethical issues of brain stimulation treatments for psychiatric patients Dr. Schlaepfer established the interdisciplinary consortium "Deep Brain Stimulation in Psychiatry Guidance for Responsible Research and Application" aiming to generate ethical guidance in this field.

REWIRING FAULTY CIRCUITS – THE PROMISE OF DEEP BRAIN STIMULATION FOR PSYCHIATRY

The introduction of Deep Brain Stimulation for treatment resistant disorders might very well lead to the most significant development in clinical psychiatry of the last forty years – possibly offering a rise of hope for patients to whom medicine had hitherto little to offer. Furthermore, translational research on neuromodulation will allow us to glean something about the underlying cause of patient's illnesses before figuring out a treatment that addresses the source of the problem. Major depression offers perhaps the best example of the rapid progress being made in understanding the biology of mental illness. Studies on the underlying neurobiology of major depression have typically focused on the description of biological differences between patients and healthy subjects such as alterations of monoaminergic or endocrine systems. Psychotropic drugs work by altering neurochemistry to a large extent in widespread regions of the brain, many of which may be unrelated to depression. We believe that more focused, targeted treatment approaches that modulate specific networks in the brain will prove a more effective approach to help treatment-resistant patients. In other words, whereas existing depression treatments approach this disease as a general brain dysfunction, a more complete and appropriate treatment will arise from thinking of depression as a dysfunction of specific brain networks that mediate mood and reward signals. A better understanding of defined dysfunctions in these networks will invariably lead to a better understanding of patients afflicted with depression and perhaps contribute to a de-stigmatization of psychiatric patients and the medical specialty treating them.

BERND WEBER

UNIVERSITY OF BONN

Bernd Weber is a neuroscientist at the Center for Economics and Neuroscience at the University of Bonn. After graduating from medical school in 2003, he worked as a research associate and in 2005 started as head of the neuroimaging platform at the Life&Brain Science Center at the University of Bonn, which hosts two MR scanners. His research interests include plasticity of the human brain in pathology and health with a focus on social and economic decision making. In 2008 he became a research associate and research professor at the German Institute of Economic Research in Berlin (DIW). He is co-founder and member of the board of directors of the Center for Economics and Neuroscience in Bonn and co-editor of the first Journal of Neuroscience, Psychology and Economics. In 2010 he received a Heisenberg-Professorship of the German Research Foundation (DFG) at the University of Bonn.

NEUROECONOMICS – INVESTIGATING THE BIOLOGICAL FOUNDATION OF HUMAN CAPITAL DEVELOPMENT AND WELLBEING

Personality traits, economic preferences and cognitive abilities are very important determinants of economic and social success. In recent years it has been shown that these cognitive and non-cognitive skills do have predictive value for important economic outcomes. On the other hand, there is growing knowledge about inter-individual variability in the underlying neurophysiological processes related to these skills. These biomarkers allow us to acquire complementary information on inter-individual heterogeneity. While recent research suggests that, e.g., the use of functional imaging methods does provide additional information for surveying measures on the prediction of behaviour changes, larger studies that investigate the actual value of biomarkers for providing additional predictive values for a broader range of economic outcomes and their use in mental disorders are completely missing.

Within this talk, the neurobiological basis of economically relevant will be discussed. The aims will be two-fold: i) to show important biological influences on relevant determinants of economic and social success and ii) to discuss their predictive value above and beyond classical measures from social science. Only with such a combined approach will it be possible to investigate the value of biomarkers as predictors for social and economic outcomes and mental well-being.

HANS-ULRICH WITTCHEN

TECHNICAL UNIVERSITY DRESDEN

Hans-Ulrich Wittchen is (since 2000) chairman of the Institute of Clinical Psychology and Psychotherapy and the Center of Clinical Epidemiology and Longitudinal Studies at the Technische Universität Dresden, and honorary professor at various universities. Trained in medicine and psychology at the University of Vienna, he received his Ph.D. and his habilitation at the University of Munich. He worked in several clinical research positions at the Anton Proksch and Ludwig Boltzmann Institute for Addiction Research (Vienna), the Central Institute of Mental Health and the University of Mannheim, the World Health Organization, the National Institute of Mental Health, and the Max Planck Institute of Psychiatry in Munich. His research combines in a unique way the psychological sciences and neuroscience with epidemiological approaches as a “cornerstone methodology” in the field of disorders of the brain, with emphasis on the developmental pathways of anxiety, depressive substance use disorders as well as neurological and somatic disease. Major contributions to the field are particularly “symptom progression models”, comorbidity concepts, the development of novel diagnostic tools for mental disorders and their relationship to somatic disease and neurological disorders as well as treatment and translational research with emphasis on cognitive-behavioural interventions and long-term management strategies

Professor Wittchen received several awards and honours such as the Medvantis Research Award 2005. He has published more than 450 peer reviewed articles, and he ranks (ISIhighlycited.com) among the top 100 most highly cited researchers in Psychology/Psychiatry/Neurosciences.

THE RISK OF MENTAL DISORDERS THROUGHOUT THE LIFESPAN: SYMPTOM PROGRESSION, CRITICAL TRAJECTORIES AND CONSEQUENCES FOR PREVENTION AND EARLY TARGETED INTERVENTION

Epidemiological studies over the past 3 decades have revealed three major results: (1) every year, about 1/3 of the population is affected by mental disorders – some for just a few weeks or months, some persistently. (2) Projections of the lifetime risk reveal that up to age 65 every second person in the general population is affected by a mental disorder at some point in their life. (3) The majority of people affected have an onset of their condition in childhood or adolescence. For many, these data on the size and associated burden of mental disorders are puzzling at first sight. However, one might ask, why should we expect that our brain as the most complex organ of the body is less frequently affected by disease and dysfunction? These results have considerably changed our concepts and models of mental health and mental disorders. The talk presents a developmental perspective of mental health, presents novel symptom-progression and trajectory models, and discusses the value of novel approaches of prevention and early targeted intervention.

PETER FALKAI

UNIVERSITY OF MUNICH

Peter Falkai has been working in the field of psychiatry for 25 years. He submitted his MD thesis in 1987, specialized in psychiatry in 1992, and completed his postdoctoral thesis (habilitation) in psychiatry in 1995. In 1996 he was appointed Professor of Medical Psychology and vice-chairman of the Department of Psychiatry, University of Bonn, Germany, where he functioned as senior medical director from 1997 to 2002. From 2002 to 2006 Prof. Falkai was appointed full professor and chairman of the Department of Psychiatry and Psychotherapy at the University of Saarland, Germany. From 2006 to 2012 he functioned as full professor and chairman of the Department of Psychiatry and Psychotherapy at the University of Göttingen, Germany. He is currently full professor and chairman of the Psychiatric Department of the Ludwig-Maximilians-University München, Germany. Prof. Falkai's main research interest is focused on the neurobiology of psychotic disorders, namely schizophrenia, allowing the use of techniques ranging from functional imaging to gene expression in human post-mortem tissue. He has managed to obtain state funding for numerous research projects. In addition to authoring many scientific publications (Hirsch-Index: 43), Prof. Falkai acts as Editor of The European Archives of Psychiatry and Clinical Neuroscience (EAPCN) and holds positions on the editorial boards of other national and international psychiatric journals. He has been involved in creating treatment guidelines for schizophrenia for the World Federation of Biological Psychiatry (WFSBP) as well as for the German Society of Psychiatry, Psychotherapy and Nervous Diseases (DGPPN), where he has been chairman since 2011.

HELGE FRIELING

HANNOVER MEDICAL SCHOOL

Helge Frieling is the head of the Molecular Neuroscience Laboratory at Hannover Medical School, where he also holds a chair in Molecular Psychiatry. He is the deputy director of the Department of Psychiatry, Socialpsychiatry and Psychotherapy. After finishing his studies in medicine at the University of Greifswald, where he also finished his MD thesis in the Department of Anesthesiology and Intensive Care Medicine, he started as an intern at the Department of Psychiatry and Psychotherapy at the University of Erlangen-Nuremberg (Head: Prof. J. Kornhuber). Within the group of Stefan Bleich, Helge Frieling started to investigate epigenetic alterations in different psychiatric disorders, especially alcohol dependence and eating disorders. He was the first to describe genome-wide and gene specific alterations of DNA methylation in anorexia nervosa. In 2006 Helge Frieling moved to Paris to work as a post-doc at the INSERM Centre de psychiatrie et neuroscience at the St.Anne's hospital in the group of Prof. Marie-Odile Krebs and Prof. Thérèse Jay. In 2009 he finished his residency and specialized in Psychiatry and Psychotherapy. In the same year he was habilitated and received his *venia legende* from the University of Erlangen-Nuremberg. Also in 2009 he moved to Hannover and was appointed to the chair for Molecular Psychiatry. In his current studies, Helge Frieling focuses on the etiological mechanisms of different mental disorders and the use of epigenetic markers to predict treatment outcome and the occurrence of treatment emergent side effects in affective and eating disorders.

ANDREAS MEYER-LINDENBERG

CENTRAL INSTITUTE OF MENTAL HEALTH, MANNHEIM

The arrival of the human genome sequence and the mechanisms by which the environment modifies its biology continues to revolutionize medicine. As a Psychiatrist and Neuroscientist Professor Meyer-Lindenberg is intrigued by the potential benefits of applying this information to psychiatric disorders since the genetic contribution to many psychiatric disorders is considerable. He uses neuroimaging methods to characterize the impact of genetic variation on functional brain circuits important for functions such as working memory, episodic memory, regulation of emotion and social cognition to understand the mechanisms translating genetic effects into risk for mental illness. As risk factors for mental disorders are also strongly associated with the particular characteristics of an individual's living conditions, his research has recently aimed at understanding social risk factors such as urban environments and migration in the context of social stress processing and elucidating which brain mechanisms are involved in the interaction between social environment and genetic factors. The identification of such correlates can contribute to the understanding of psychiatric disorders, help to develop effective, personalized treatments for these illnesses and, prospectively, aid in their prevention. To this end Professor Meyer-Lindenberg is also involved in numerous national and international research projects aimed at shedding light into these often chronic, disabling disorders and improving the lives of affected patients.

ARIBERT ROTHENBERGER

UNIVERSITY OF GOETTINGEN

1944 born in Wörrstadt, Germany. 1966-1971 medical school (University of Mainz). 1972 doctorate. 1972-1983 clinician and researcher at the Universities of Essen and Ulm. 1980/1982 board qualification as neurologist/child and adolescent psychiatrist. 1983-1994 clinical and scientific work at the department of child and adolescent psychiatry, Central Institute of Mental Health, Mannheim. 1985 post doctoral thesis in child and adolescent psychiatry, University of Heidelberg. 1986 Hermann Emminghaus Award for research in Child and Adolescent Psychiatry. 1987 appointment as professor. 1992/1994 board qualification as psychotherapist and supervisor (behaviour therapy). Since 1994 director of the clinic of child and adolescent psychiatry, University of Göttingen. As a Child and Adolescent Psychiatrist Prof. Rothenberger is basically interested in the successful psychosocial development of youngsters including different levels of behaviour (e.g. sensory motor, cognitive, emotional, social) and their interaction with environmental conditions. In this context his research focuses on the relationship between brain development and behaviour, including developmental psychopharmacology in animals and humans, structural and functional neurobiological correlates and endophenotypes of child psychiatric disorders like Tourette syndrome and Attention deficit/Hyperactivity Disorder as well as developmental psychopathology. Since the before mentioned disorders are chronic and in many cases lifelong, he cooperates with other disciplines in order to disentangle the role of early brain development in child psychiatric disorders and to investigate how natural/spontaneous compensatory neuronal mechanisms, may be understood in order to develop better treatment programs like neurofeedback to improve mental health throughout life.

INFORMATION

CONFERENCE VENUE

Herrenhausen Palace
Herrenhäuser Straße 5
30419 Hanover
Germany

CONTACT

Anna Böhning (Event Management)
Henrike Hartmann (Funding Department)
0049 (0)511 / 83 81-279
mentalhealth@volkswagenstiftung.de

CONFERENCE WEBSITE

www.contoo.de/c/mentalhealth