Biomedical Research Centre for Mental Health and Dementia Unit
at South London and Maudsley NHS Foundation Trust
and the Institute of Psychiatry, King’s College London

Experimental Medicine Day
Friday 28 March 2014
Institute of Psychiatry, King’s College London
16 De Crespigny Park, London, SE5 8AF

Programme
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<tr>
<td>9:00 – 9:30</td>
<td>Registration</td>
<td>Mezzanine</td>
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<td>9:30 – 9:45</td>
<td><strong>Welcome</strong>                                      Professor Andrew Pickles, Cluster Lead, Experimental Medicine and Clinical Trials, NIHR BRC/U; Chair in Biostatistics, Institute of Psychiatry</td>
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<td>9:45 – 10:45</td>
<td><strong>What can we do to recover therapeutic momentum in psychiatry?</strong>                                  Professor Ed Bullmore, Director, Research &amp; Development at Cambridgeshire &amp; Peterborough NHS Foundation Trust; Vice-President, Experimental Medicine and Head, Clinical Unit Cambridge at GlaxoSmithKline; Professor of Psychiatry and Clinical Director, Behavioural &amp; Clinical Neuroscience Institute at University of Cambridge</td>
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<td>10:45 – 11:15</td>
<td>Morning tea</td>
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<td>11:15 – 12:45</td>
<td>Session 2</td>
<td>Parallel workshops</td>
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<td><strong>Workshop 1</strong> Development of Ketamine as a Rapid Acting Antidepressant</td>
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<td><strong>Chair</strong>                                        Dr James Stone</td>
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<td><strong>Facilitators</strong></td>
<td>Dr Wayne C. Drevets, Vice President, Disease Area Leader in Mood Disorders Janssen Pharmaceuticals of Johnson &amp; Johnson Janssen Research &amp; Development</td>
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<td>Dr Jaz Singh, Senior Director, Experimental Medicine, Mood disorders, Neuroscience at Janssen, Pharmaceutical Companies of Johnson and Johnson, Inc.</td>
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<td>Dr Rupert McShane, Consultant and Honorary Senior Clinical Lecturer in Psychiatry, Oxford Health NHS Foundation Trust</td>
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<td><strong>Room</strong>                                         Sir Robin Murray Lecture Theatre A, Education Hub</td>
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<td><strong>Workshop 2</strong> The CAN-BIND Network: Integrating neuroimaging as part of a biomarker matrix</td>
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<td><strong>Chair</strong>                                        Dr Richard Dobson</td>
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<td>Dr Kenneth Evans, President and CEO of the Ontario Cancer Biomarker Network (OCBN); Associate Professorship, Department of Pathology and Laboratory Medicine, Queen's University; Lecturer, Department of Psychiatry, University of Toronto</td>
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<td>Dr Tim Salomons, Lecturer, School of Psychology and Clinical Language Sciences, University of Reading Ph.D.</td>
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<td><strong>Room</strong>                                         Small Lecture Theatre, 1st Floor</td>
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<td><strong>Workshop 3</strong> A multidisciplinary approach for identification of biomarkers in mental health</td>
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<td><strong>Chair</strong>                                        Dr Valeria Mondelli</td>
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<td><strong>Facilitators</strong></td>
<td>Professor Carmine Pariante, Professor of Biological Psychiatry and Head of Section, IoP</td>
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Experimental Medicine Day, Friday 28 March 2014
Room: Seminar Room 5, Education Hub

Workshop 4: Virtual reality Workshop
Chair: Professor Allan Young
Facilitators: Dr Lucia Valmaggia, Clinical Psychologist Senior Lecturer, Department of Psychology, Institute of Psychiatry
Dr Jessica Fish, Lecturer in Clinical Psychology, Department of Psychology, Institute of Psychiatry
Room: Sir Robin Murray Lecture Theatre B, Education Hub

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<tr>
<td>12:45 – 14:00</td>
<td>Lunch Education Hub</td>
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<td>Poster presentation Seminar room 3</td>
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Afternoon Sessions

Session 3: Chair: Dr Valeria Mondelli Wolfson Lecture Theatre

14:00 – 14:20 | Buccal Naloxone for Opiate Overdose Reversal: First-in-Man Clinical Trial
Professor John Strang, Head of the Addictions Department, Institute of Psychiatry; Academic Director, Addictions Clinical Academic Group, King’s Health Partners

14:20 – 14:40 | In search of brain signatures of mood changes: arterial spin labelling following mood induction in young people
Ms Nina Mikita, PhD Candidate, Institute of Psychiatry, King’s College London

14:40 – 15:00 | Ketamine combined with neuroimaging as a tool to validate the mechanisms of action of novel compounds
Dr Mitul Mehta, Senior Lecturer, Department of Neuroimaging, Institute of Psychiatry

15:00 – 15.30 | Afternoon tea Mezzanine

Session 4: Chair: Professor Allan Young Wolfson Lecture Theatre

15:30 – 16:45 | Panel Discussion

16:45 – 17:00 | Closing remarks
Morning Session

Key note lecture - What can we do to recover therapeutic momentum in psychiatry?

Professor Ed Bullmore

Abstract

The pharmaceutical industry is generally withdrawing investment from psychiatry partly because the return on investment, such as successful delivery of new medicines for depression, psychosis and other major mental health disorders, has been poor in the last 20 years. In this talk Professor Bullmore will rehearse some of the reasons that drug discovery for psychiatry has been challenging and will suggest some strategies that might make a difference in the future. In particular, he will discuss immunopsychiatry as a potential way forward. There is growing evidence that immunological mechanisms are involved in many psychiatric disorders and refocusing development efforts from neuronal targets to immune targets could offer major advantages in terms of accessibility of mechanistically specific peripheral biomarkers and economic repurposing of existing assets and expertise in the pharmaceutical industry.

Room
Wolfson Lecture Theatre

Workshops

Workshop 1. Development of Ketamine as a Rapid Acting Antidepressant

Facilitators
Dr Wayne C. Drevets, Dr Jaskaran Singh, Dr Rupert McShane

Chair: Dr James Stone

Abstract

Dr Singh will present the clinical trials data and clinical issues surrounding the development of ketamine as a rapid antidepressant and consider the critical clinical questions on dose, frequency, patient population and clinical trials. Dr Drevets will then present the preclinical/basic science data that address the neurobiological mechanisms underlying ketamine's rapid antidepressant effect, along with data on other agents that shown rapid antidepressant effects and appear to show neurobiological effects that converge with those of ketamine.

This presentation describes clinical experience with ketamine in an open label NIHR-funded safety study, and in subsequent clinical cases. Over 400 infusions have been given to 40 cases in Oxford. Patients are treated in the recovery bay of the ECT suite alongside patients who are having ECT. This ensures adequate monitoring by staff who are experienced in dealing with treatment resistant depression and the presence of an experienced anaesthetist. Patients continue on their current antidepressants and are monitored using SMS-based mood monitoring (True Colours). The observed response rate of 29% in the formal study exactly matches the response rate at 3 days in randomised trials of ketamine. Dr McShane will describe the safety issues encountered, and his anecdotal experience of strategies for maintaining the benefit in those who respond.

Room
Sir Robin Murray Lecture Theatre A, Education Hub
Workshop 2. The CAN-BIND Network: Integrating neuroimaging as part of a biomarker matrix

Facilitators
Dr Kenneth Evans, Dr Tim Salomons

Chair: Dr Richard Dobson

Abstract
Depression is a complex and heterogeneous disorder with multiple aetiologies. Effective treatment outcomes are limited by the difficulty in matching patients to available treatment options. Identifying molecular, clinical and imaging signatures capable of stratifying depressive illness into biologically meaningful subtypes is therefore a critical step toward improving our understanding of these disorders as well as in developing more targeted therapies. The Canadian Biomarker Integration Network for Depression (CAN-BIND) is an ongoing multidisciplinary, multicentre initiative aimed at identifying these subtypes of depression. In this presentation, Dr Evans and Dr Salomons will discuss how depressed patients are recruited from research clinics across Canada and entered into a standardised treatment program during which they receive comprehensive clinical evaluations (symptom scales, cognitive batteries, detailed medical history and demographics), molecular profiling (DNA, mRNA, miRNA, proteomics), as well as a battery of neuroimaging tests (structural and functional MRI and EEG). The will also review how CAN-BIND data is stored, managed and analysed within Brain-CODE, a large-scale collaborative data platform. Once data collection is complete, CAN-BIND data (raw and processed) can not only be openly shared among researchers, but federated with similar datasets that are being collected across a variety of CNS diseases by the Ontario Brain Institute. A system of common data elements, unified imaging techniques and platforms, as well as common molecular testing protocols and approaches applied across these programs will enhance interdisciplinary comparisons. Preliminary results from CAN-BIND molecular subprojects will be presented along with future directions for international collaboration.

Room
Small Lecture Theatre, 1st Floor

Workshop 3. A multidisciplinary approach for identification of biomarkers in mental health

Facilitators
Professor Carmine Pariante, Dr Steven Kiddle

Chair: Dr Valeria Mondelli

Abstract
Biomarkers hold great promise for aiding diagnosis, tracking progression, tracking treatment response and recruiting subjects to prevention trials of mental health disorders. In this workshop Professor Pariante and Dr Kiddle will examine the process of identifying biomarkers in the lab, integrating complementary markers and assessing their potential utility through the use of statistical approaches.

Professor Pariante will review how and what to measure in the blood of psychiatric patients and how peripheral biomarkers related to clinical features.

Dr Kiddle, a researcher in the BRC for Mental Health Bioinformatics core, will cover regression and classification approaches to biomarker analysis, including the application of machine learning approaches for biomarker assessment. Sensitivity and specificity will be introduced and discussed in relation to clinical utility. The problem of replicability and the importance of avoiding overfitting through the use of independent test data will also be empathised.

Room
Seminar Room 5, Education Hub
Workshop 4. Virtual reality Workshop

Facilitators
Dr Lucia Valmaggia, Dr Jessica Fish

Chair: Professor Allan Young

Abstract
Virtual Reality (VR) is an increasingly affordable and accessible tool for use in experimental medicine. Within the BRC, we are using VR environments to measure and manipulate cognition and behaviour in ways that would otherwise be impractical, difficult to standardise and replicate, and/or lacking sufficient sensitivity. It allows us to effectively take our participants, our lab, and our scientific equipment anywhere in the world (or out of it)! This workshop will include presentations of our ongoing work, as well as our plans for the future. We will also include video demonstrations of the virtual environments we have available, and previews of emerging technologies to which we will soon have access. There will also be time for questions and discussion.

Room
Sir Robin Murray Lecture Theatre B, Education Hub

Afternoon Sessions

1. Buccal Naloxone for Opiate Overdose Reversal: First-in-Man Clinical Trial

Professor John Strang

Abstract
Heroin overdose represents a major cause of death around the world (UNODC/WHO, 2013). In the UK, opiates are the main contributor to drug-related deaths despite being less commonly used than other illicit drugs (ACMD, 2012). Fatal outcome of opiate overdose can be prevented through timely administration of an injection of naloxone in emergency medical care. The MHRA (2013) has expressed recent interest in making naloxone directly accessible to opiate users and their families. However, a regulatory change to over-the-counter status remains unlikely for as long as naloxone is available in injectable form only.

In this presentation, Professor Strang will review how we are developing an injection-free naloxone formulation and have partnered with Pharmaceutical Sciences within King’s to develop a lyophilised buccal naloxone tablet. He will discuss how the first step will be a pharmacokinetic trial in healthy volunteers to establish safety and dose proportionality of buccal naloxone relative to the intravenous and intramuscular injection standards, with key outcomes being Tmax and Cmax.

Professor Strang will further discuss how future efforts will examine pharmacodynamics in dependent opiate users to assess onset of action and clinical effectiveness. In order to maximise patient and public involvement, we are actively involving a group of current and former service users with personal overdose experience in the current planning and design of the study.

Room
Wolfson Lecture Theatre
2. In search of brain signatures of mood changes: arterial spin labelling following mood induction in young people

*Ms Nina Mikita*

**Abstract**

Despite considerable progress in identifying depression in youth, important developmental obstacles in assessing and monitoring mood have yet to be overcome. Traditional clinical approaches used to assess mood work less well in young children, and diagnosis can be hampered by the presence of developmental conditions, such as autism. In this presentation, Ms Mikita will review results from a pilot neuroimaging study performed with 21 healthy adolescents, which was a first step towards meeting the challenge of assessing mood in youth. The study included monitoring participants brain activity after they watched films designed to induce different mood states: neutral, sad and happy. Results included being able to distinguish sad and happy mood states from the neutral condition on the basis of brain activation patterns alone. She will also discuss how this research can pave the way for developing physiological markers of mood states, which could aid with the assessment of depression in cases where the diagnosis is uncertain.

**Room**

Wolfson Lecture Theatre

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3. Ketamine combined with neuroimaging as a tool to validate the mechanisms of action of novel compounds

*Dr Mitul Mehta*

**Abstract**

Pharmacological MRI (phMRI) is a technique used to examine the MRI signal change after drug infusion and can be used in humans and experimental animals. NMDA receptor antagonists, such as ketamine, induce a phMRI response. This response can be blocked by pre-treatment with other compounds and thus may serve as both a brain index for the modulatory effect of other drugs and a mechanistic pharmacological model to investigate the role of glutamatergic hypofunction in relation to psychiatric disorders. The utility of the phMRI approach depends upon assay fundamentals including an appropriate analysis pipeline, test-retest reliability and sensitivity to different doses of ketamine, as well as robust and replicable pharmacological blockade. We sought to validate these fundamentals in two studies to characterise the test-retest reliability and effect size of the phMRI response to two low doses of ketamine and the pharmacological sensitivity to modulation with lamotrigine and risperidone. FMRI time series data were acquired at rest in healthy volunteers and modelling utilised both regional analysis and pattern recognition tools. The response to ketamine was robust and reliable and suitable to test dose-ranging pharmacological blockade. Testing with novel compounds is on-going in healthy human subjects to indicate a "mechanistic" engagement of glutamatergic systems for compounds in early-phase drug development.

**Room**

Wolfson Lecture Theatre
Speaker biographies

Professor Ed Bullmore

Ed Bullmore trained in clinical medicine at the University of Oxford and St Bartholomew’s Hospital in London then worked as a Lecturer in Medicine at the University of Hong Kong, before specialist clinical training in psychiatry at St George’s Hospital and then the Bethlem Royal & Maudsley Hospital London. His research career started in the early 1990s as a Wellcome Trust (Advanced) Research Fellow and was initially focused on mathematical analysis of neurophysiological time series. Since moving to Cambridge as Professor of Psychiatry in 1999, his interest in systems-level analysis of brain function and structure has increasingly focused on using tools drawn from wavelet analysis and graph theory to investigate complex brain networks identified in human neuroimaging data (fMRI, MRI and MEG). Since 2005, he has worked half-time for GlaxoSmithKline as Head of GSK’s Clinical Unit in Cambridge and Vice-President, Experimental Medicine. He is Deputy Director of the Wellcome Trust/GSK funded training programme in Translational Medicine and Therapeutics, Clinical Director of the Wellcome Trust/MRC funded Behavioural & Clinical Neuroscience Institute, and an honorary Consultant Psychiatrist and co-director of CAMEO in Cambridgeshire & Peterborough Foundation NHS Trust. He has published about 270 peer-reviewed articles and his h-index is 67. He has been elected FRCP, FRCPsych and FMedSci.

Dr Richard Dobson

Richard Dobson is a Senior Lecturer and head of Bioinformatics at the NIHR Biomedical Research Centre for Mental Health (IOP) and the South London and Maudsley NHS Trust. Main areas of bioinformatics research have focused on the genomics of complex disease, with a special focus on biomarkers of Alzheimer’s Disease. Research has required the analysis, integration and modeling of complex large molecular datasets. The group has a range of experience which includes the analysis of data produced by expression arrays, SNP arrays, next generation sequencing (NGS) and network and pathway studies. Specific projects include in-silico drug repositioning screening to find new uses of old drugs and development of pipelines for clinical application of NGS in cancer. In collaboration with the Clinical Informatics group, the group has developed expertise in natural language processing (NLP) for mining electronic patient records (eg. for adverse drug reactions) and developed infrastructure to link the records to high throughput omics and imaging data generated by the BioResource. The group are performing development work on Multi-Agent based computer systems using JADE to exploit big biomedical data for clinician aided decision support. The research has required the extensive use of computational approaches such machine learning methods and the creation of software tools as well as the construction and administration of high performance computing infrastructure which has been uniquely developed behind the NHS firewall. Large collaborative projects include the EU European Medical Informatics Framework (EMIF) for which the group lead on integrative biomarker analysis in Alzheimer’s. Other active collaborators include Janssen, GE, SomaLogic (US Biotech),Emerald Logic, Illumina, SAGE Bionetworks, TwinsUK, HipSci, and GENAROAD. He was previously based at the Genome Centre, Queen Mary University of London. Prior to this he held positions at the Wellcome Trust Sanger Institute, Cambridge and Microscience Ltd (Emergent Biosolutions), Reading.

Dr Wayne C. Drevets

Wayne C. Drevets, M.D. is the Scientific Vice President and Disease Area Leader in Mood Disorders in the Neuroscience Therapeutic Area at Janssen Research & Development, of Johnson & Johnson, Inc. Dr Drevets received a B.S. (Biology) degree from Wheaton College and an M.D. degree from the University of Kansas, and completed residency training in psychiatry at Washington University School of Medicine (St. Louis). He then joined the Washington University Department of Psychiatry faculty, ultimately attaining the rank of tenured Associate Professor, where he conducted positron emission tomography (PET) imaging studies of mood and anxiety disorders under the mentorship of Dr Marcus Raichle. He subsequently moved to the University of Pittsburgh, where he acquired additional training in the application of PET to neuroreceptor imaging. In 2001, Dr Drevets joined the National Institute of Mental Health (NIMH) Mood and Anxiety Disorders Program as Chief of the Section on Neuroimaging in Mood and Anxiety Disorders, and in 2008 he additionally became Acting Chief of the NIMH Laboratory on Molecular
In 2009 Dr Drevets became the first President and Scientific Director of the Laureate Institute for Brain Research in Tulsa, OK, a private research institute founded and supported by The William K. Warren Foundation, to lead a multidisciplinary team in studies aimed at investigating interrelationships between neuroimaging, genetic and other biomarkers, illness course, and treatment outcome in psychiatric disorders. He subsequently joined Janssen in the fall of 2012.

**Dr Kenneth Evans**

Kenneth Evans is President and CEO of the Ontario Cancer Biomarker Network (OCBN), a not-for-profit research services organization. OCBN supports academic and industry research teams across a broad range of therapeutic areas in the development of clinical tools for establishing early diagnosis, assessing prognosis and disease progression, and for predicting therapeutic response. Dr Evans leads a number of OCBN’s ongoing biomarker research efforts, including programs in depression, neurodegenerative diseases and a number of types of cancer. Dr Evans also leads the InDOC consortium, which is building and maintaining the Ontario Brain Institute’s Brain-CODE platform. Brain-CODE enables the secure collection, storage and analysis of high dimensional clinical, imaging and molecular data for the purposes of encouraging more integrated approaches to understanding diseases of the CNS. After receiving his doctorate in Psychology from the University of Toronto in 1988, Dr Evans spent 15 years in the pharmaceutical and biotech industries, during which time he led the global clinical development of a number of innovative drugs. Dr Evans holds an Associate Professorship in the Department of Pathology and Laboratory Medicine at Queen’s University and is a Lecturer in the Department of Psychiatry at the University of Toronto.

**Dr Jessica Fish**

Jessica Fish is a BRC-funded lecturer in the Department of Psychology. Her research interests are in the assessment and treatment of cognitive impairment in neurological and psychiatric conditions, and her clinical work is in SLaM’s Neuropsychiatry and Memory Disorders Service at St Thomas’ Hospital.

**Dr Steven Kiddle**

Steven Kiddle studied Mathematics at Warwick University, before going on complete a MSc and PhD in Systems Biology also at Warwick. While there his focus was on molecular biology, statistics and machine learning. Dr Kiddle joined the Institute of Psychiatry two years ago and has studied biomarkers of Alzheimer’s disease. He is particularly interested in early, effective, non-invasive and inexpensive markers, which he studies using neuroimaging endophenotypes. Dr Kiddle is also very interested in integrative analyses, which he will apply and develop as part of his MRC Biostatistics fellowship.

**Dr Rupert McShane**

Rupert McShane is an old age psychiatrist and clinical lead for ECT. He is a member of the RCPsych Special Committee on ECT and the ECTAS Standards Committee. He leads the Cochrane Dementia and Cognitive Improvement Group, the Thames Valley DeNDRoN, the Dementia Clinical Network of the Oxford Academic Health Science Network.
Dr Mitul Mehta

Mitul Mehta is a senior lecturer in the Department of Neuroimaging at the Institute of Psychiatry at King’s College London. His current research focuses on development of functional magnetic resonance imaging paradigms and analysis tools to accurately describe drug effects on cognitive networks in the brain. This includes the development of assays to test the mechanisms of action for novel compounds and he works closely with pharma on a number of projects. His early work at the Institute was supported by a Wellcome Trust VIP Award and he previously held an MRC Training Fellow in the PET Cyclotron Unit at Hammersmith Hospital after completing his PhD in cognitive neuropsychology at the University of Cambridge. His work has been recognised by the British Association for Psychopharmacology who awarded him the Young Investigator’s (Vernalis) Prize, is an elected member of the BAP council and an advisory editor for the journal Psychopharmacology.

Ms Nina Mikita

Nina Mikita is a PhD student at the Department of Child and Adolescent Psychiatry, Institute of Psychiatry. She has a background in experimental psychology, having completed her undergraduate degree at Oxford University in 2011. In her PhD, Nina is investigating mood dysregulation in adolescents with autism spectrum disorders (ASD) using a variety of methods, including physiological reactivity and neuroimaging. She is particularly interested in studying the biomarkers of mood disorders, with an aim to aid the diagnosis of mood problems in populations where self-report may be of limited reliability (e.g. in young children or individuals with ASD).

Dr Valeria Mondelli

Valeria Mondelli is a Senior Clinical Lecturer at the Institute of Psychiatry, KCL and Consultant Psychiatrist in South London and Maudsley Foundation NHS Trust (Psychosis Clinical Academic Group). She obtained her degree in Medicine in 2000 and in General Adult Psychiatry in 2004 at the University of Turin, Italy. She moved to London in 2005 to work at the Institute of Psychiatry, King’s College London, where she completed her PhD in Psychological Medicine in 2009. She has been awarded several prestigious international awards for her academic work, including the NARSAD Young Investigator Award and the Junior Clinical Award from the British Association of Psychopharmacology. Her research interest focuses on the role of stress – and its biological mediators, like hormones and inflammation – in relation to the development of psychiatric disorders, their clinical outcome, and the emergence of metabolic abnormalities.

Professor Carmine Pariante

Carmine Pariante is Professor of Biological Psychiatry at the Institute of Psychiatry, and Consultant Perinatal Psychiatrist in the associated South London and Maudsley NHS Trust. He investigates the role of stress in the pathogenesis of mental disorders and in the response to psychotropic drugs, both in clinical samples and experimental settings. His work focuses on depression and fatigue, with a particular interest in the perinatal period and in subjects with medical disorders. Moreover, he also uses animal and cellular models. Professor Pariante has received numerous awards for his research: for example, from the National Alliance for Research in Schizophrenia and Depression (NARSAD), the American Psychiatric Institute for Research and Education (APIRE), and the British Association for Psychopharmacology. He has recently been awarded the 2012 “Academic Psychiatrist of the Year” Award from the Royal College of Psychiatrists. His dream is that new therapeutic tools targeting the stress system will soon be available to alleviate the suffering of patients with mental health problems.
**Professor Andrew Pickles**

Andrew Pickles is Head of Biostatistics, Director of King’s Clinical Trials Unit and leads the Experimental Medicine and Clinical Trials cluster of themes within the NIHR Biomedical Research Centre for Mental Health. His career has passed through universities in the UK and US and has spanned natural, social and medical sciences. His research in the field of mental health has focussed largely on children, particularly those with autism. Much of his methodological work has dealt with the many and varied impacts of measurement error and how these can be overcome. He was among the originators of the glamm program that has been used in almost 1000 papers.

**Dr Tim Salomons**

Tim Salomons’s research examines the neural mechanisms through which cognition and emotion alter the experience of pain. I am particularly interested in individual differences in the ability to cope with pain and how the mechanisms that underlie these differences can be altered using neurostimulation or psychotherapeutic interventions. I obtained my Ph.D. in Clinical Psychology from the University of Wisconsin- Madison, working in the laboratory of Dr Richard Davidson before joining the Department of Psychiatry at the University Health Network in Toronto as a Research Scientist. I am presently a Lecturer in the School of Psychology and Clinical Language Science at the University of Reading, UK.

**Dr Jaz Singh**

Jaz Singh, M.D. is the Mood Disease Area Early Development/Translational Medicine Leader at Janssen R&D. He is a former Harvard Research Fellow, and spent 3 years as part of a translational strategy team focused on novel mood disorders’ targets at the NIMH, where he served as lead investigator on the definitive follow-up study that established the rapid and robust antidepressant effects of Ketamine in treatment-resistant depression. He has been a Janssen Clinical Leader for 7 years, with a particular interest and focus on clinical trial methodology. He played a leading role in the design, conduct and successful file of the paliperidone adolescent schizophrenia program and the design of paliperidone palmitate 3 month PK study. He was also the Clinical Leader for Risperidone, Project INDIGO, Project TED, JNJ26489112 and exploration of Neuroactive Cytokines in depression. Jaz continues to be an academic leader in the department and authored over thirty five publications. He is focused on mood disorders development projects, is the clinical leader for esketamine and is involved in other glutamate modulating projects (e.g. NR2B) projects, along with an effort to establish human experimental models of mood disorders In addition to these roles, he participates in multiple mood L&A evaluations, the Mood Disease Area Strategy group, Mood Biomarker Group and Integrated Mood Database development.

**Dr James Stone**

Dr Stone studied medicine at the Royal Free Hospital School of Medicine, London. He trained in Psychiatry at Cambridge and at the Maudsley. He was awarded an MRC Clinical Research Training Fellowship in 2005, and obtained his PhD in 2008. Over the last 7 years, he has worked on brain imaging and glutamatergic neurotransmission, and has completed a number of studies investigating the effect of ketamine on brain function. He is currently working as a Clinical Senior Lecturer with the BRC at the Institute of Psychiatry, King’s College London.

**Professor John Strang**

John Strang is Director of the National Addiction Centre (NAC), Head of the Addictions Department at King’s College London and is Leader of the Addictions Clinical Academic Group of the Kings Health Partners AHSC (Academic Health Science Centre). He has also been an addictions psychiatrist for over 30 years, and has led the group at the Maudsley/Institute for many years. Professor Strang has published over 400 scientific papers in the addiction field and is one of only five addictions researchers outside North America to be identified by ISI (the Institute for Scientific Analysis) as a “Highly Cited Author” and he is the only one in Europe who is also a clinician. His published co-edited books include ‘Addiction Research Methods’ and ‘Drug Policy and the Public
Good’. With colleagues, he has been at the forefront of charting the strange clusterings of heroin overdose deaths, and has identified untapped potential for overdose resuscitation interventions by family and friends, to prevent deaths while awaiting ambulance. He recently Chairied the Expert Group producing ‘Medications and Recovery (2012)’

**Dr Lucia Valmaggia**

Lucia Valmaggia’s clinical and research interests include early detection, psychological intervention for psychosis, virtual reality assisted therapy and the influence of social stressors on the onset and course of psychosis.

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**Professor Allan Young**

Allan Young MB ChB, MPhil, PhD, FRCPsych, FRCPC Chair of Mood Disorders, Director of the Centre for Affective Disorders, Department of Psychological Medicine, King’s College London, UK. Professor Young holds the Chair of Mood Disorders at King’s College London where he is also Director of the Centre for Affective Disorders within the Department of Psychological Medicine in the Institute of Psychiatry. He has held academic appointments at the Universities of Oxford, Newcastle upon Tyne (latterly holding the Chair of General Psychiatry at Newcastle), UBC, Vancouver, Canada, where he held the Leading Edge Endowment Fund Endowed Chair in Research in the Department of Psychiatry and was also the Director of the Institute of Mental Health and Imperial College London where he held the Chair of Psychiatry and was Director of the Centre for Mental Health.

Professor Young’s research interests focus on the cause and treatments for severe psychiatric illnesses, particularly mood disorders. He has received research grant funding from the UK Medical Research Council, the Wellcome Trust, the Stanley Medical Research Institute, and the Canadian Institutes for Health Research (CIHR), the National Institutes of Health (USA) and numerous other funding agencies. He has published over 300 peer-reviewed publications and a number of books about psychopharmacology and affective disorders including ‘Bipolar disorders: basic mechanisms and therapeutic implications’ (2nd Ed.) with JC Soares, and ‘Practical management of bipolar disorder’ with IN Ferrier and E Michalak (Cambridge University Press, 2010). Professor Young is a member of a number of editorial boards and is a member of numerous professional and scientific societies. He is currently Treasurer of the International Society for Affective Disorders and Chair of the Psychopharmacology Committee of the Royal College of Psychiatrists.