



Institute of Psychiatry, Psychology & Neuroscience

Academic Psychiatry

Divisional Digest

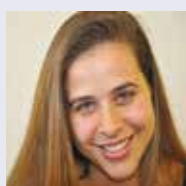
Issue 6 | March 2020

Welcome to the sixth edition of the Academic Psychiatry Divisional Digest. Thank you for all your numerous contributions.

Any feedback for future editions would be greatly appreciated.

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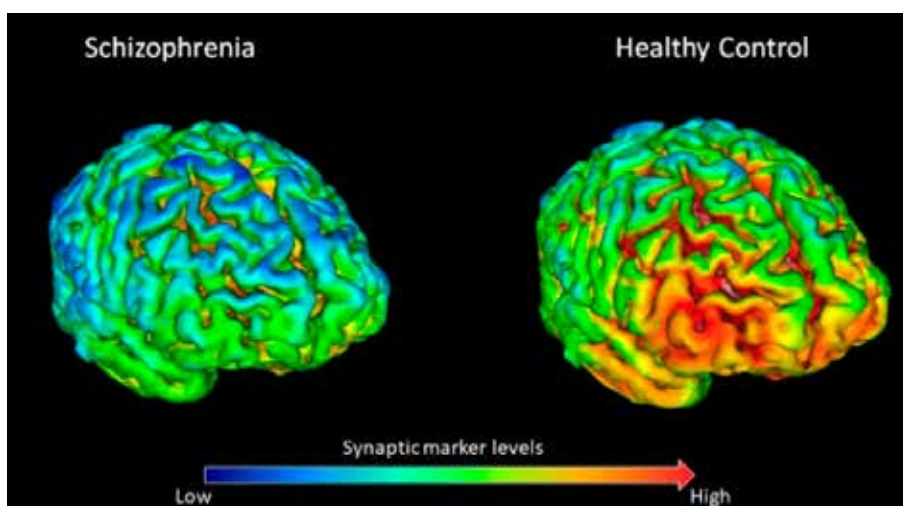
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New study finds evidence for reduced brain connections in schizophrenia



Advances in scanning have allowed researchers for the first time to show lower levels of a protein found in the connections between neurons in the living brains of people with schizophrenia.

Combined image of brain scans SV2A Credit E Onwordi at MRC London Institute of Medical Sciences (LMS) resize.

The researchers who conducted the scans at the psychiatric imaging facility at the Medical Research Council (MRC) London Institute of Medical Sciences, say these changes could underlie the cognitive difficulties seen in schizophrenia and provide targets for research into new treatments.

It was first hypothesised in the early 1980s that schizophrenia was caused by dysfunctional synapses – where the nerve signals are transmitted between neurons in

the brain. However, researchers had only been able to study this indirectly, such as in post mortem brain samples, or animal and cell models in the lab.

In this study, published in Nature Communications, the researchers detected this in living brains for the first time by utilising a tracer that emits a signal which can be picked up by a PET brain scan. After being injected, the tracer binds specifically to a protein found in synapses called SV2A (synaptic vesicle glycoprotein 2A), which has been shown in animal and post-mortem studies to be a good marker of the density of synaptic nerve endings in the brain.

They scanned 18 adults with schizophrenia and compared them to 18 people without schizophrenia.

They found that levels of the synaptic protein SV2A were lower in the front parts

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of the brain - regions of the brain involved in planning - in people with schizophrenia.

“Our lab at the MRC London Institute of Medical Sciences is one of the few places in the world with this new tracer”, said Professor Howes, “Which means we’ve been able for the first time to show there are lower levels of a synaptic protein in people with schizophrenia. This suggests that loss of synapses could underlie the development of schizophrenia. We need to develop new treatments for schizophrenia. This protein SV2A could be a target for new treatments to restore synaptic function.”

Dr Ellis Onwordi, who conducted the research, said: “Schizophrenia is a highly debilitating disorder, and the therapeutic options are too limited for many patients. To develop better treatments in the future we need studies like this to shine a light on how the extraordinarily complex wiring of the human brain is altered by this disease.”

“Having scans that can characterise the distribution of the approximately 100 trillion synapses in the living brain, and find differences in their distribution between people with and without schizophrenia, represents a significant advance in our ability to study schizophrenia.”

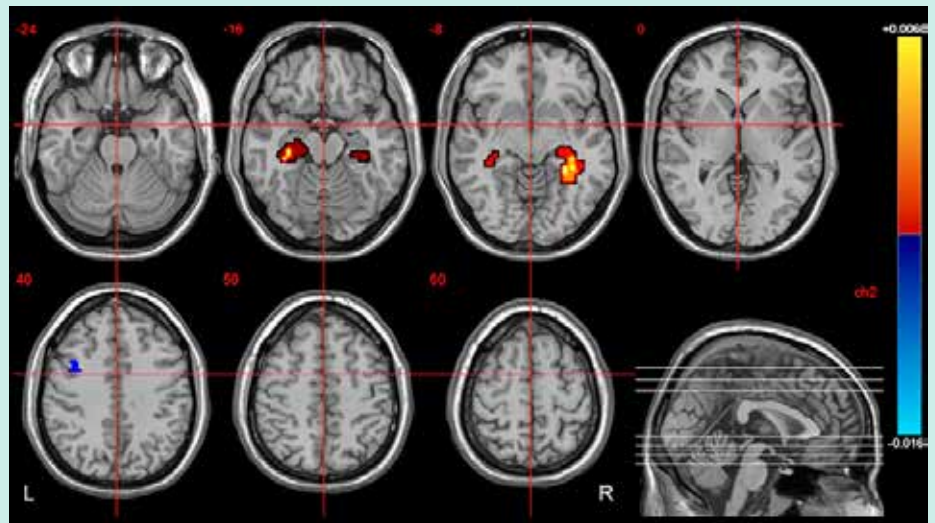
The people with schizophrenia who were scanned had all received antipsychotic medication, so the researchers wanted to exclude this as a factor in the synaptic dysfunction. They gave antipsychotic drugs, haloperidol and olanzapine, to rats for 28 days and found it had no effect on the levels of the protein SV2A.

Professor Howes said: “This is reassuring as it’s suggesting that our antipsychotic treatments aren’t leading to loss of brain connections.”

“Next we hope to scan younger people in the very early stages to see how synaptic levels change during the development of the illness and whether these changes are established early on or develop over time.”

Dr Oliver Howes
Professor of Molecular Psychiatry

New insight into how cannabidiol takes effect in the brains of people with psychosis



Published in *Psychological Medicine*, the research used fMRI scans to examine the brain activity of 13 people with a diagnosis of psychosis under the influence of a single dose of CBD or placebo and 16 controls whilst they were undertaking a memory task. The researchers showed that, during the task, there was a different pattern of activity in the prefrontal and mediotemporal brain areas of people with psychosis under placebo compared to the activity seen in those without psychosis. When those with psychosis were given one dose of CBD, the activation in these brain areas became more like the activation seen in controls.

Senior author on the study, Professor Sagnik Bhattacharyya, from the Psychosis Studies department said: “Our study provides important insight into which areas of the brain CBD targets. It is the first time research has scanned the brains of people with a diagnosis of psychosis who have taken CBD and, although the sample is small, the results are compelling in that they demonstrate that CBD influences those very areas of the brain that have been shown to have unusual activity in people with psychosis.”

CBD is one of over 100 chemical compounds known as cannabinoids that are found in the cannabis plant. There has been recent interest in the use of cannabidiol (CBD) as an alternative to current antipsychotic medicines as it could prove to be more tolerable

generally and more effective for a subset of people who do not respond to available antipsychotics. Its use has been associated with a decrease in symptoms of psychosis and changes in brain activity during verbal memory tasks in patients at high risk of psychosis.

The study also showed that activity in the striatum and the activity in hippocampus were more co-ordinated in people with psychosis, indicating there was a greater functional connectivity between these two areas in this group compared to controls. After one dose of CBD this functional connectivity was reduced in people with psychosis and became more similar to that seen in the controls. Those people with psychosis continued on their existing antipsychotic treatment throughout the study.

The results indicate that CBD has a moderating effect on the altered pattern of brain activity in the prefrontal, mediotemporal and striatal areas in people with psychosis. The study also showed that psychotic symptoms did show a decreasing trend after the dose of CBD but researchers highlighted that no definitive conclusions could be drawn about this effect as the study did not look at sustained use of CBD and the sample size was small.

Dr Sagnik Bhattacharyya
Professor of Translational Neuroscience and Psychiatry

Balancing effect with side effects in antipsychotic treatment of schizophrenia

Antipsychotics form the mainstay of treatment for patients with schizophrenia, but some newer so-called second-generation drugs are associated with a range of side effects that are known to put individuals at risk of diabetes and cardiovascular disease. A study published in *The Lancet Psychiatry* has demonstrated that different antipsychotics have marked differences in how they affect body weight, levels of glucose, cholesterol, and other fats in the blood. This is the first time antipsychotics have been ranked according to these metabolic side effects.

By analysing 100 randomised controlled trials that examined 18 different antipsychotics and placebo in the treatment of schizophrenia, the study analysed the level of metabolic side effects and their relationship to changes in the symptoms of schizophrenia. There was a large variation in the level of metabolic side effects. Two antipsychotics in particular, clozapine and olanzapine, were shown to have a strong association with increases in body weight and BMI, and glucose and cholesterol levels. In contrast, some antipsychotics, such as lurasidone and cariprazine, were associated with improvements in glucose and cholesterol levels. The research also investigated which patient characteristics might predict a high level of these metabolic side effects and indicated that being non-white, older and male were risk factors for developing a high level of these side effects when taking antipsychotic medication. Metabolic dysregulation was associated with improvements in psychotic symptom severity.

Lead researcher, Dr Toby Pillinger, said: "Antipsychotic drugs all work on the same chemical system in the brain – dopamine – but they vary in their actions at other chemical systems, which may influence the risk of metabolic side effects. Our research showed a dramatic variation in metabolic side effects between different antipsychotics. Those with the worst side effects produced, in only a few weeks, metabolic changes within the blood that are associated with an increased risk in cardiovascular disease of up to 76%. Interestingly, we showed that these side effects appear to be linked to an improvement in symptoms of schizophrenia, so it may be that for some drugs to be effective, metabolic side effects are unavoidable. This complements previous research showing that people with schizophrenia treated with antipsychotics that have increased metabolic side effects paradoxically have better cardiovascular outcomes and live longer, possibly because improvements in their mental health from medication allows them to look after themselves and implement better self-care in the long-term. We believe the results of the study should be reflected in treatment guidelines to help doctors and patients choose the best drug treatment. Drug choice should weigh up treatment benefits for symptoms against the risk of metabolic and other side effects."

Dr Toby Pillinger
NIHR Academic Clinical Fellow

Dr Oliver Howes
Professor of Molecular Psychiatry



ADVANCE Programme

A research team led by Professor Gail Gilchrist at the National Addiction Centre, King's College London was awarded funding to develop and test a perpetrator intervention to be delivered by staff trained in substance use treatment for men. They developed the evidence-based ADVANCE intervention that targets intimate partner abuse and substance use together to reduce abuse and improve relationships for men in substance use treatment who "opt" to change their behaviour. The intervention comprises an individual session with substance use staff followed by 13 weekly group sessions. Female current or ex-partners are also offered support.

The ADVANCE intervention was piloted in substance use treatment services with 104 men in three areas of England. Men evaluated the intervention highly, reporting they had learnt new skills that they had used to change their behaviour. One male participant said "I've been using the techniques and the information I've learnt here and put it into practice. I'm much calmer. It's not just me: my kids have noticed, and my wife has noticed." The group facilitators were positive about benefits to participants, saying it's "life-changing" in some cases.

Following the feasibility trial, funding has recently been awarded by the National Institute of Health Research (NIHR) to conduct a large randomised controlled trial among men in substance use treatment services in Scotland, England and Wales. To find out more please visit our website www.kcl.ac.uk/ADVANCE and subscribe to our blog (blogs.kcl.ac.uk/advance/).

The research team includes King's College London, University of Edinburgh, University of Bristol, University of Manchester, University of York, Rochester Institute of Technology (USA), RESPECT (the UK membership organisation for work with domestic violence perpetrators) and an Independent Consulting Psychologist.

Dr Gail Gilchrist
Professor in Addictions Healthcare Research

High volumes of mental health-related tweets associated with crisis referrals

Anna Kolliakou and Robert Stewart from Psychological Medicine and colleagues from KCL have found that referrals to two mental healthcare providers in London for patients requiring urgent help were significantly greater on days with a higher than average number of tweets discussing topics around mental health.

They compared the number of tweets containing keywords associated with two important health disorders - depression and schizophrenia - with recorded referrals for “crisis episodes” to SLaM and C&I. Between January 2010 and December 2014, 48,691 and 32,689 crisis episodes were recorded by SLaM and C&I, respectively. On days with a higher than average number of tweets mentioning depression, schizophrenia or showing support for either illness, the authors observed 5-15% increases in the number of mental health-related crisis episodes referred to SLaM or C&I.



The authors suggest that further research is needed to determine the potential factors underlying these associations and whether social media platforms can be monitored by healthcare services to identify vulnerable groups and predict times of higher risk.

Dr Anna Kolliakou
Clinical Informatics Interface and Network Lead

Dr Robert Stewart
Professor of Psychiatric Epidemiology and Clinical Informatics

IoPPN Addictions to study parents who use drugs



A team of researchers from the Addictions Department, led by Dr Polly Radcliffe, joined the University of Stirling in launching the “Relations Study” which explores the experiences of UK parents who use drugs and the services they use. The study will explore how parental drug use is managed in practice by interviewing, observing, and spending time with parents and families as well as health and social care service providers.

The team will ethnographically examine 30 families affected by parental drug

use, as well as staff and service providers who work with drug affected families across 12 selected community services. The study will complete approximately 190 interviews and focus groups over the course of 12-21 months of fieldwork.

Researchers will also review and examine policies about the treatment and management of parents who use drugs to compare how policies differ in different agencies and countries (England/Scotland). Stakeholders, service users and policy makers will be invited to join two “Learning Alliances” in Scotland and England to inform the study and to feedback on early findings.

The Relations Study was awarded £2.5 million from the Economic and Social Research Council. Professor Anne Whittaker, University of Stirling, is the studies Chief Investigator. The IoPPN team includes Dr Polly Radcliffe (Principal Investigator), Dr Landon Kuester (Research Fellow), and Dr Jan Flaherty (Research Fellow).

For information about the Relations Study, please contact:

Email: Relations@kcl.ac.uk

Twitter: @kclRelations

Diversity & Inclusion - Updates

- The IoPPN has been conferred an Athena SWAN Silver Award until April 2023.
- Race equality has been represented by the Race Equality Network (REN) at IoPPN alongside the Race Equality Working group focused on specific issues related to race.
- The IoPPN Code of conduct has now also been finalised and an online version will shortly be made available where individuals can view the Code, sign it electronically and also view who has signed it previously. All IoPPN staff who manage or supervise students and/or staff will be strongly encouraged to sign the Code of Conduct once the website goes live.
- The IoPPN 2019 Athena SWAN application is being made available online (to all IoPPN).
- The Inspiring People Initiative was launched on the 4th February 2020.
- The D&I Achievements Log (D&IAL) meetings have now taken place with all the departments, the three Divisional Vice Deans and the IoPPN Central Team.
- All completed D&IALS will be listed on the Intranet, with a summary that can be shared for best practice across departments.

The Importance of Open Research at King's College London

It is increasingly recognised that robust advances in science and research rely on transparency and reproducibility. However, these are often undermined by a research culture that emphasises novelty over verification and unduly uses publication- and grant-funding track records to determine career progression. The situation is further compounded by the widespread use of questionable research practices (e.g., selective reporting, low statistical power, p-value hacking and HARKing or hypothesizing after the results are known), the consequences of which have been demonstrated in a series of large-scale failures to adequately reproduce findings across multiple research fields (i.e., the so-called “reproducibility crisis”).

However, change is happening. Researchers, institutes and stakeholders are engaging in mass self-examination, leading to a push for a research culture that recognises and rewards transparent and reproducible research. To facilitate this shift, a root-and-branch approach is needed; one that supports training and appropriate incentives for researchers. At King's College London, two initiatives have been setup taking this approach: The RIOT Science Club and The King's Open Research Group Initiative.

The RIOT Science Club is a weekly lecture series in Reproducible, Interpretable, Open & Transparent



Science, with slides and recordings made publicly available on our OSF or YouTube page. The aim is to provide examples of good practice, training and ways to overcome barriers to practising rigorous research. Following its success since it started in February 2019, the RIOTS Club Team has grown along with its ambitions, which include an expansion to different campuses (starting with St. Thomas'), developing learning materials, and running a summer school to train researchers in use of the programming language R.

The King's Open Research Group Initiative (or KORGI) is an action-oriented committee composed of an interdisciplinary mix of senior academics and experienced research staff that seek to change policy and procedures to promote transparent, accessible and reproducible research. Its inaugural meeting was November 2019, where thirty plus attendees agreed a three-point first-year plan. First, to help formulate KORGI's strategic objectives and potentially guide the future KCL research strategy, a short survey was circulated to assess knowledge/application of Open Research practices across KCL. Second, to support appropriate incentives, a piloted certification initiative is planned that incorporates Open Research practices

in the recruitment of research-related positions (a preliminary proposal here). Third, a one-day conference will be held on 11th June 2020 (Greenwood Theatre, Guys Campus) to bring together a KCL-wide audience to hear from world-leading experts and stakeholders (e.g., Wellcome, Jisc, INCF) with the view of raising awareness about the necessity for Open Research and to foster cross-department collaboration.

What next? To engender Open Research at King's College London, The RIOT Science Club and KORGI or similar initiatives are necessary but not sufficient engines for change. More support for these is required, particularly from higher levels of the institution, both in terms of raising awareness and funding. This is completely possible and there is a potential cost of inaction. For example, eleven universities – Aberdeen, Bristol, Edinburgh, Keele, Newcastle, Oxford Brookes, Reading, Royal Veterinary College, Sheffield, Surrey, and UCL – have joined the UK Reproducibility Network, a network with leads at 40 plus UK research institutions that are working together with researchers, universities, and stakeholders to incentivise transparent and reproducible research, efforts which are supplemented by a network of Open Research Working Groups in nearly 20 universities. As a world leading institute, King's College London must find itself well placed alongside a growing number of universities that are making Open Research part of their agenda.



Professor Sir Simon Wessely appointed to ESRC Council



The Board of UK Research and Innovation (UKRI) has appointed Professor Sir Simon Wessely as a member to the Economic and Social Research Council (ESRC).

Sir Simon Wessely, Regius Professor of Psychiatry at King's College London, joins two other new members of the ESRC's Council which comprises representatives from the academic community as well as individuals from business and the public sector.

Members of the council work with Executive Chair Professor Jennifer Rubin to shape the ESRC's strategy and to support UKRI's overall mission to maintain the UK's world-leading position in research and innovation. ESRC Council members also provide Professor Rubin, and UKRI more widely, with input, intelligence and feedback from their communities and stakeholder groups.

Personal Tutoring

Professor John Marsden has been appointed as Senior Tutor for Academic Psychiatry. John's role is to provide a point of contact and support for personal tutors across the division.



Do contact John if you have any questions about the work of a personal tutor, or how best to respond to a student who needs support.

Resource material for personal tutoring is also on the intranet (<https://www.kcl.ac.uk/campuslife/services/tutor>).

King's Awards 2019



The King's Awards is the annual celebration of the wonderful achievements of staff over the last academic year.

Professor Trudie Chalder and Team from the Department of Psychological Medicine received **Excellence in Innovation and Impact** award.

Our Division also had many more colleagues shortlisted for awards: Dr Stephani Hatch and Team, Department of Psychological Medicine - Most Outstanding Commitment to London and Local Communities; Dr Gareth Owen, Senior Clinical Research Fellow, Department of Psychological Medicine -Most Significant Contribution in Serving the Needs & Aspirations of

Society; Dr Jenny Kravariti and Team, Department of Psychosis Studies - Reggie the Lion Student Experience; Dr Sadie Boniface, Research Fellow, Addictions Department -Most Innovative Teacher; Professor Ulrike Schmidt, Professor of Eating Disorders and Head of Department, Psychological Medicine- Most Outstanding Contribution to the Research Staff Experience; Dr Cerisse Gunasinghe, Post Doctoral Research Associate, Department of Psychological Medicine- Most Significant Commitment to Widening Participation or Social Mobility; Professor Colin Drummond and Team, Addictions Department- Excellence in Innovation and Impact.

IndigoGold MSc Dissertation Awards



IndigoGold is a business consultancy company that promotes an Innovation Award for MSc dissertations on Work and Organisational Psychology. For the 2019/20 edition, the programme leaders from a variety of MSc were invited to submit their nominations.

The work presented by Emily Cooke received the award for 2019/20 as a recognition for its unique combination of innovation, research quality and practical application. The innovation award involves a cash prize of £1,000.

Divisional Bites

- **Dr Cathy Davies** was awarded Psychosis Studies PhD of the Year 2019 Prize & King's Elsevier Outstanding PhD Thesis Prize 2020.
- **Dr Faith Borgan's** JAMA Psych paper (Borgan et al., 2019) was recognised by Faculty 1000 Prime as being of special significance in the field by two independent reviewers. Her PhD was also nominated for the Tadion Rideal prize in molecular science by King's College London.
- **Dr Charlotte Pretzsch** was awarded IoPPN Academic Psychiatry Emerging Career Research Prize of the Year 2019.
- **Dr Alexis Cullen and Dr Dan Joyce** received the 2019 Brain & Behavior Research Foundation Young Investigator Grant (NARSAD).



Highly Cited Researchers 2019



The annual list identifies researchers with multiple papers ranking in the top 1% by citations for their field and year, demonstrating significant research influence among their peers. This year's list continues to recognise researchers whose citation records position them in the very highest strata of influence and impact. King's College London has 38 entries in this year's list, with 31 of those working at the IoPPN (15 from our Division).

Addictions

- Ann McNeill, Professor of Tobacco Addiction
- Dr Brendon Stubbs, NIHR Clinical Lecturer

Child & Adolescent Psychiatry

- Edmund Sonuga-Barke, Professor of Developmental Psychology, Psychiatry & Neuroscience
- Katya Rubia, Professor of Cognitive Neuroscience

Old Age Psychiatry

- Dag Aarsland, Professor of Old Age Psychiatry

Psychological Medicine

- Carmine Pariante, Professor of Biological Psychiatry
- Paola Dazzan, Professor of Neurobiology of Psychosis

Psychosis Studies

- Sir Robin Murray, Professor of Psychiatric Research
- Philip McGuire, Professor of Psychiatry & Cognitive Neuroscience
- Oliver Howes, Professor of Molecular Psychiatry
- Dr Paolo Fusar-Poli, Reader of Psychiatry & Youth Mental Health
- Dr Ilaria Bonoldi, Honorary Clinical Research Fellow
- Dr Joaquim Radua, Honorary Research Associate
- Professor David Mataix-Cols, Honorary Senior Research Fellow
- Dr Jim Van Os, Visiting Professor of Psychiatric Epidemiology

RCPsych Awards for Dr Shubulade Smith & Dr Derek Tracy



DR SHUBULADE SMITH

At the 2019 Royal College of Psychiatrists Awards, Dr Shubulade Smith was awarded Psychiatrist of the Year, and Dr Derek Tracy won Psychiatric Communicator of the Year.

Dr Smith, who is a Visiting Senior Lecturer in the Department of Forensic and Neurodevelopmental Sciences a Consultant Psychiatrist at the South London and Maudsley NHS Foundation Trust, received the award during a ceremony on Friday 8 November.

Dr Smith is a consultant psychiatrist with 26 years' experience in psychiatry

– including 19 years at consultant level. Dr Smith was voted a BMA pioneering consultant and nominated as a Woman of the Year in 2002 for the development of her “One Stop Shop”, a medication review and physical monitoring clinic for people with mental health problems. She is known nationally and internationally for her work in the hormonal and reproductive effects of antipsychotic medications. Committed to improving quality by eliminating inequality in mental healthcare, Dr Smith was awarded a CBE for services to forensic psychiatric intensive care in June 2019.

Also receiving an award was Dr Derek Tracy, who was awarded Psychiatric Communicator of the Year. “I am hugely honoured to receive this award, and am particularly grateful to my KCL students, who every week push me to be a better educator and communicator”.

Dr Tracy is a PhD student at the Psychosis Studies Department, and Clinical Director at Oxleas NHS Foundation Trust, London. He is also on the editorial board of the British Journal of Psychiatry.



DR DEREK TRACY

The judges felt that Dr Tracy successfully engages “a wide range of audiences across a wide range of media”. He has a wonderful ability to transmit enthusiasm and excitement for the subject matter of psychiatry and has become an unofficial ambassador for the College in sharing information and breaking down barriers and stigma against mental health. His roles extends beyond, working with two charities engaging those with mental health difficulties and a wider public in mental health education, de-stigmatisation, instilling hope and positivity. Dr Tracy's title of Communicator of the Year is well deserved.

King's College Graduation 2020

The Psychosis Studies Department was represented by Professor Sukhi Shergill, Dr Teresa D'Oliveira, Dr Stefania Tognin, Dr Kelly Diederer and Dr Derek Tracy at the Graduation Ceremony held at the Royal Festival Hall in January. Professor Shergill was presented the KCL IoPPN Supervisory Excellence Award.



LGBTQ+ History Month at King's!

On Thursday 6th February, the IoPPN hosted a one-day event on **LGBTQ+ Mental Health**. This one-day event was a chance to hear about recent LGBTQ+ mental health research and discuss the implications for improving support for LGBTQ+ people. It was open to all, including NHS staff and service-users, university staff and students and those working for LGBTQ+ organisations.

There were a variety of talks on gender minorities, sexual minorities and mental health in both University and NHS settings.



20th Maudsley Forum

8–11 September 2020

KING'S
College
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The annual Maudsley Forum is an exciting opportunity for psychiatrists and psychologists to learn about the most recent advances in clinical and academic psychiatry, with an emphasis on how research informs evidence-based clinical practice. During this intensive 4-day conference, lectures will be delivered by world's leading academics from the Institute of Psychiatry, Psychology and Neuroscience and the South London and Maudsley NHS Foundation Trust. Small-group workshops will allow participants to discuss clinical and academic issues of interest in depth.

This event is CPD certified and equivalent to 19 CPD points

For any enquiries about the event, please email events.ioppn@kcl.ac.uk