

# Bristol Neuroscience Newsletter

May - June 2016



## How the Brain Adapts to Stress

Adaptation to stress is known to require changes in the expression of immediate-early genes in the brain, particularly in the hippocampus—however, the underlying molecular mechanisms controlling the expression of these genes has been unclear. A BBSRC funded project involving UoB, King’s College London and Exeter has revealed that stressful events result in epigenetic modifications within immediate-early genes in hippocampus neurons.

They studied DNA methylation, which acts to suppress expression of genes; results showed that stress results in DNA de-methylation in immediate-early genes, thereby freeing the suppressed expression of these genes in the




hippocampus and facilitating manifestation of adaptive behavioural responses.

The team found that the gene and behavioural responses to stress depended on the concentration of s-adenosyl methionine (SAM), a methyl donor required by the enzyme that methylates DNA. When SAM levels were elevated, a subsequent stressful event did not result in DNA de-methylation but elicited enhanced DNA methylation of immediate early genes, which suppressed their expression and led to


impaired behavioural adaptation.

Stress-related psychiatric disorders like major depression, anxiety and post-traumatic stress disorders are presently among the most debilitating illnesses known.


Saunderson E et al (2016). [Stress-induced gene expression and behavior are controlled by DNA methylation and methyl donor availability in the dentate gyrus](#). *Proceedings of National Academy of Sciences*. 113(17), pp4830-4835

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# EVENTS



Emma Stack, SPHERE



From top: film poster of Keane; Stephen Collishaw; still from *In The Real*

## Philosophy of Biology in the UK

8 June 2016, 9.00 - 17.00

## Focus on Early Diagnosis of Dementia by Magnetic Resonance

9 - 10 June 2016. Keynote: Roy Jones (Bath), Merchant Venture Building

## How to Prepare a Good Research Bid: Medical Faculties

9 June 2016, 10.00 - 16.30. Pam Johnstone, The Hawthorns

## Do Different SPHERE Movement Sensors Agree with the Gold Standard?

## Can Sensors Identify when Someone Is At High Risk of an Imminent Fall?

9 June 2016, 11.00 - 12.00. Emma Stack (SPHERE- Southampton), 0.3 Merchant Venturers Building

## Workshop on Semantic Spaces at the Intersection of NLP, Physics and Cognitive Science

11 June 2016, 9.00 - 17.30. Hans Briegel (Innsbruck); Peter Gärdenfors (Lund); Dominic Widdows (Microsoft), University of Strathclyde

## Epistemic Utility Theory 2016 Conference

13 June 2016, 9.00 - 15 June 2016, 18.00. Dept of Philosophy, Cotham House

## BBSRC 'tales from the inside'

13 June 2016, 13.00 - 14.00. Pugsley Lecture Theatre, Queen's Building

## Psychosis on Screen - Keane

13 June 2016, 18.00 - 20.00. Watershed

## Social change and trends in child and adolescent mental health

14 June 2016, 12.30 - 13.30. Stephan Collishaw (Cardiff), OS6, Oakfield House

## Psychosis on Screen - Every Little Thing

20 June 2016, 18.00 - 20.00. Watershed

## Academia Europaea Annual Conference 2016

26 June 2016, 13.00 - 17.30. Cardiff University

## Psychosis on Screen - In The Real

27 June 2016, 18.00 - 19.45. Watershed

## Psychosis Health Integration Team launch event

27 June 2016, 19.45 - 23.00. Watershed cafe/bar

## GW4 Translational Biomedical Network: Exeter event

30 June 2016, 13.30 - 16.30. Harrison Building Room 101, University of Exe-

ter, Streatham Campus

**Foraging Behaviour in Bumblebees (Associative Learning and Group Foraging)**

12 July 2016, 12.00 - 13.00. Richard Pearce (UoB), Bristol Centre for Complexity Sciences, 1-9 Old Park Hill

**Soapbox Science 2016**

16 July 2016, 10.00 - 17.00. Various venues around Bristol

**GW4 Translational Biomedical Network: Bath event**

18 July 2016, 13.30 - 16.30. University of Bath, 4 West 1.2 and atrium

**9th UK-Korea Neuroscience Symposium**

1 - 2 September 2016. Seoul

**1st Joint UK-Italian Purine Club Meeting**

13 September 2016, 9.30 - 14 September 2016, 17.00

**Reach West**

14 September 2016, 14.00 - 15.00. Richard Martin & Verity Leach (UoB), BRU Seminar Room, Education & Research Centre

**Engage 2016: Building Connections, Sharing Ideas**

15 September 2016, 9.00 - 14.00. Richmond Building, Queens Road

**Perinatal Medicine and the newborn brain**

24 September 2016, 12.45 - 15.20. Chemistry Theatre, Cantock's Close

**Meeting of Minds: a one-day Conference on Epilepsy and Amnesia**

29 September 2016, 10.30 - 17.30. Hadyn Ellis Lecture Theatre, Cardiff University

**Freedom of Mind Festival**

30 September 2016 - 10 October 2016



**FREEDOM OF MIND FESTIVAL**

**Tremors: Public (mis)understanding of the land below ground**

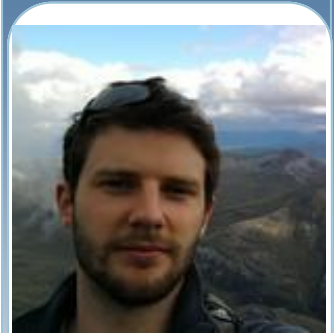
4 October 2016, 16.00 - 17.00. Iain Stewart, Wills Memorial Building

**Feel It Festival: Exploring Pain & Breath through Performance**

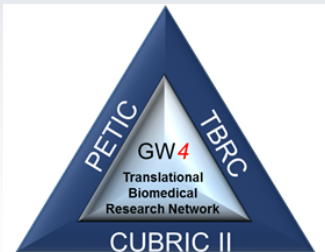
17 - 20 November 2016. St Paul's Church, Bristol

**8th Annual 'Research, Audit & Quality Improvement' Day**

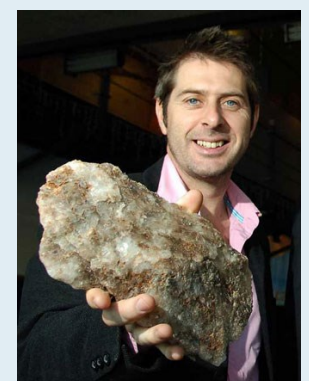
18 November 2016, 9.00 AM - 17.00. Engineers' House, Clifton



Richard Pearce, PhD student, School of Biological Sciences



Top: Verity Leach, Senior Research Associate in Applied Health Research



Bottom: Iain Stewart

**FEEL IT FEST 2016**  
 17-20 NOVEMBER  
 EXPLORING PAIN & BREATH THROUGH PERFORMANCE  
 University of BRISTOL  
 Elizabeth Blackwell Institute for Health Research  
 Live or BREATHE

# NEWS

## RENOIR HIT Achieves Objectives



The [Retinal Outreach, Integration and Research Health Integration Team](#) (RENOIR), led by Prof [Andrew Dick](#) and begun in Dec '12, has successfully built on Bristol Eye Hospital's strengths, particularly in retinal disorders, as part of a strategic ambition to embed translational and clinical research into

service delivery. Expanding their services through a modernised system using outreach clinics has allowed the NHS to deliver evidence based services to more people closer to home, improving patient choice and delivering research that brings new drugs and treatments to people who might not otherwise

have access to them. They have designed and delivered optimal and cost-efficient care through the use of modern imaging developments and IT and recruitment of trained staff. They opened new sites at south Bristol, Worle and Cribbs Causeway and have received excellent feedback from patients.

## Guarantors of Brain Award

Dr [Pamela Sarkar](#), Clinical Research Fellow in Clinical Neurosciences, was granted a Travel Award from [Guarantors of Brain](#)

which allowed her to present *Neuroglial protective capacity of multipotent mesenchymal stromal cells declines with duration of progressive*

*disease in multiple sclerosis* at the 2016 American Academy of Neurology Annual Meeting in Vancouver in April 2016.

## European Parliament Scientific Foresight Unit

Prof [Elek Molnár](#) (pictured left) visited the European Parliament in Brussels to participate in the European Parliament Scientific Foresight Unit's Member of the European Parliament (MEP)-Scientist Pairing Scheme.

The scheme, run by the European Parliament's Science and Technology Options Assessment (STOA)

Panel, aims at promoting a culture of science-based policy-making by helping to create lasting links between scientists and Members of the European Parliament (MEPs). The essence of this project is to establish a structured dialogue between scientists and policy-makers, with the aim to raise awareness about politically relevant, cutting-edge sci-

entific issues and about the importance of science for evidence-informed policy-making.

A total of 33 MEP-scientist pairs (from 18 Member States) have been established and the names of the participating MEPs and scientists have been published on the [STOA website](#).



## Robotics and Avatars to Treat Social Disorders

Researchers from the Universities of Bristol, Exeter, Montpellier and Naples Federico II have developed a system to enable a robot or computer avatar to interact with a patient whilst playing a version of the mirror game, in which two players try to copy each other's motion whilst playing with coloured balls that can move horizontally on a string.

Initially the avatar is like an alter ego, created to look and move like the patient to enhance his or her feelings of attachment. Over time the avatar is slowly altered to become less similar,

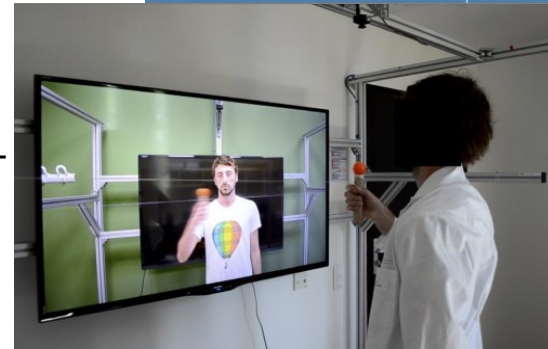
therefore helping with social rehabilitation.

The results show that players sharing similar movement features, or motor signature, interact and co-ordinate better. This can be used for rehabilitation of patients with serious social disorders as an avatar can be created to act like an alter ego, programmed to look and move like the patient to enhance his or her feelings of attachment.

The research used the principles of dynamical systems and feedback control theory to embed the avatar with enough 'intelligence' to

synchronise and respond to the motion of the human player. The team now wish to build on the technology and set-up multiple human-machine interaction for social rehabilitation and make groups of people and avatars interact with each other to perform joint tasks together.

Stowiński P *et al.* (2016). [Dynamic similarity promotes interpersonal co-ordination in joint action](#). *Interface*. Published online 23 March 2016.



*Interpersonal co-ordination between a human and computer avatar. © EuroMov, Center for Research and Technological Development, Montpellier*

## New Chair for Bristol Health Partners Executive

David Wynick, joint Research Director at North Bristol and University Hospitals Bristol NHS Trusts and Professor of Molecular Medicine, has taken on the newly created role of chair of the Bristol Health Partners (BHP) Executive Group. The role is designed to strengthen links between the Executive Group and the Board.

*The Board is working closely with the partner-*

*ship's Executive Group to make sure we're using this group's considerable talents to best advantage. Executive Group members are advocates for the partnership in their organisations and they help the core team implement the vision for the partnership. We want to augment this vital role.*

Chair of the Bristol Health Partners Board and Chief Executive of North Bristol Trust,  
Andrea Young

BHP is a strategic collaboration between the city's three NHS trusts, three clinical commissioning groups, two universities and its local authority. As a voluntary membership organisation, they are able to serve the needs of the local population with regards to illness, life-long health and how to prevent illness in the first place.

**Bristol Health Partners**



# SPOTLIGHT: GRAHAM COLLINGRIDGE



On 1 March 2016 one of the most recognised and prestigious prizes in neurological research, [The Brain Prize](#), was for the first time awarded to three people: [Graham Collingridge](#), Professor of Neuroscience in Anatomy at Bristol, and Profs Tim Bliss (UCL) and Richard Morris (Edinburgh). Presented by the Grete Lundbeck European Foundation, the €1M prize, which will be shared equally between the three, is awarded to one or more scientists who have distinguished themselves by an outstanding contribution to European neuroscience and who are still active in research.

Each member of the trio made ground-breaking advances shedding light on the way nerve connections in the hippocampus are strengthened by repeated stimulation. The process, called long-term potentiation (LTP), persists throughout life and forms the basis of our ability to learn and remember. It also underpins the brain's inherent 'plasticity,' or its ability to re-organise itself in response to experience. LTP is thought to be involved in many brain conditions including autism, schizophrenia, depression, chronic pain, epilepsy and dementia.

Prof Collingridge has developed and applied techniques to identify several of the key molecules that are responsible for LTP. He is particularly known for discovering the role of the NMDA receptor, a protein in the brain that is important for communication amongst nerve cells, in the induction of LTP.

Graham completed his undergraduate degree in pharmacology from Bristol and returned to the University as a Lecturer in 1983. After a four-year stint as Departmental Chair in Pharmacology at Birmingham, he came back to Bristol in 1994 to take up his current position. He has held visiting Professorships at the University of British Columbia and at Seoul National University and served as Editor-in-Chief of *Neuropharmacology* between 1993-2010. In 1997 he was elected a Founder Fellow of the European DANA Alliance; and in 1998 he was elected a Founder Fellow of the Academy of Medical Sciences (UK). In 2001 he was elected a Fellow of The Royal Society, and from 2007 until 2009 he served as President of the British Neuroscience Association (BNA). He is currently the reviews editor for *Molecular Brain* and serves on the scientific advisory board of *Hello Bio*.

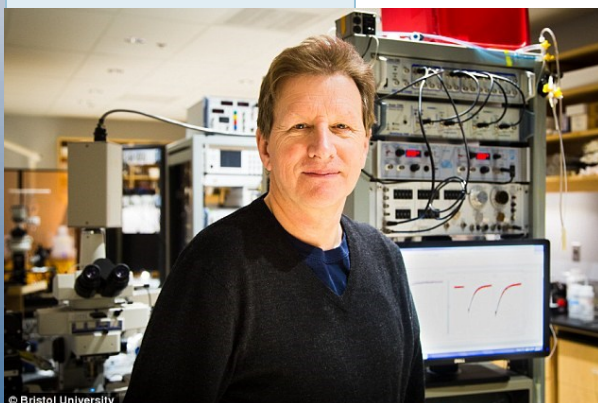
Graham is a founding member of Bristol Neuroscience and sat as its first Chair, alongside Prof [Stafford Lightman](#), in 2003. His time is currently shared

between the UK and Canada, where he holds the Ernest B. and Leonard B. Smith Professor and Chair of the Department of Physiology at the University of Toronto, and is also a senior investigator at the Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital in Toronto.

The Brain Prize will be presented to the winners by HRH Crown Prince Frederik of Denmark at a ceremony on 1 July 2016 in Copenhagen.



GRAHAM COLLINGRIDGE





## Clinical Primer Award

The **Clinical Primer** scheme offered by the **Elizabeth Blackwell Institute for Health Research** is aimed at Medical and Veterinary graduates and are designed to give early career clinicians the chance to experience a research environment for the first time. The award funds a six month bio-

medical research “primer” project.

Several awards were made in 2016, including:

- **Kate Day**, based in the School for Social and Community Medicine, to pursue *Investigating the influence of maternal depression or taking antidepressants during pregnancy on the*

*risk of having a child with an autism spectrum disorder*

- **Robert Spaul**, School of Clinical Sciences, to explore *Neural progenitor cells in premature infant CSF*.

If you have any questions on the scheme email the [EBI](#).

## Hypertension: have we missed something?

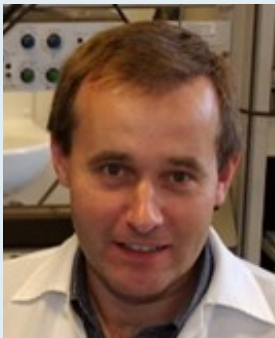
An article published by [Medical News Today](#) on 11 February 2016 highlights the Centers for Disease Control and Prevention aim to prevent a million heart attacks and strokes in the USA by 2017.

Hypertension affects some 70 million Americans, quadrupling the chance of dying from a stroke and tripling the chance of dying from heart disease. Prescription medicines have limited effect in lowering high blood pressure; some patients fail to see the benefit, some suffer from un-

wanted side effects, and some refuse or discontinue treatment. Secondary hypertension that results from a medical condition such as obstructive sleep apnea, adrenal gland tumors or thyroid problems, can result from medications such as hormone treatments, painkillers or recreational drugs. It usually starts suddenly and causes higher blood pressure than primary hypertension.

Over 90% of people with suffer from the latter; it progresses gradually, increases with

age and is affected by hereditary factors. Lifestyle factors also contribute to the disease. Treatment mainly focuses on lifestyle factors or dysfunction of the cardiovascular system. However some research, such as that conducted by Prof [Julian Paton](#) (left) and colleagues, study the relationship between high BP and the brain, and particularly the nerves in the brainstem. Neurogenic hypertension is related to excessive and abnormally high sympathetic activity.

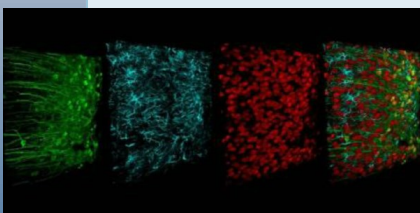


## Neuroscience Festival Round-up

This year's Neuroscience Festival, which was held 18-19 March, was a huge success thanks to the outstanding efforts of organisers and over 180 volunteers.

Approximately 2700 visitors saw the exhibition, ~2000 people attended short talks, and around 650 people were present at the ple-nary lecture. Supported

Highlights of the event are on the [website](#), where talks will soon be available to view, and images have been uploaded to [Flickr](#).



## Recent Funding Successes

Dr **Peter Brennan** (PI) with co-applicants Dr **Emma Robinson**, Profs **Stafford Lightman** (Laboratory for Integrative Neuroscience and Endocrinology) & **Mike Mendl** (Animal Welfare and Behaviour Group): BBSRC, *Can social buffering pheromones be used to reduce stress?*, £482,539, 3 years.

Dr **Emma Robinson** (PI) with Prof Bastian Hengerer (Boeringer Ingelheim): BBSRC, *Investigating the neural circuits and molecular mechanisms which regulate emotional behaviour and cognitive affective bias*. £984,400, 4 years.

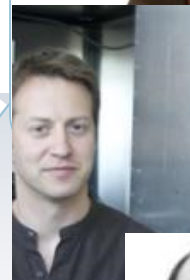
Dr **Jack Mellor** (PI) with co-PI Dr Claudia Clopath (Imperial): BBSRC, *Plasticity of inhibitory synaptic transmission in the hippocampus*. £562,000, 4 years.

Prof **Hans Reul** (PI) & Dr Karen Mifsud: BBSRC project grant, *Role of corticosteroid receptor DNA binding in stress-induced hippocampal gene transcription in relation to glucocorticoid and behavioural responses*, £450,000. Allows the continuation of research to obtain insight into how glucocorticoid hormones act on the brain after acute and chronic stressful challenges. This will help to resolve stress-related psychiatric disorders (e.g. major depression, anxiety and PTSD).

Prof **David Murphy** (PI): MRC, *Regulatory and functional pathways mediating the control of central osmotic defences by hypothalamic transcription factor CREB3L1*, £425,000. The team identified a gene, CREB3L1, as be-

ing increased in expression in the hypothalamus following dehydration. CREB3L1 is a specialised protein that controls the expression of target genes; it is expressed in AVP neurones, binds to the promoter region of the AVP gene, and drives its expression. The aim now is to decipher the detailed molecular mechanisms by which it affects global gene expression in the brain and regulates the crucial hormonal processes that govern water homeostasis.

Prof **Julian Paton** has been awarded an Innovate UK grant and spin out company, Ceryx Medical Ltd, formed. The £550,000 will go towards funding the pre-clinical testing of a prototype physiological pacemaker in large animals.



From top: Peter Brennan, Emma Robinson, Jack Mellor, Hans Reul, David Murphy, Daniel Whitcomb, Steve Fitzjohn, Jo Murrell

## Bristol Teaching Awards 2016

Dr **Daniel Whitcomb**, Lecturer in Translational Neuroscience, has been short-listed for the Students' Award for Outstanding Teaching (Health Sciences) as part of the 2016 Bristol Teaching Awards.

Also nominated are: Dr **Steve Fitzjohn**

(Teaching Fellow in Pharmacology) **Students' Award for Outstanding Teaching (Biomedical Sciences)**

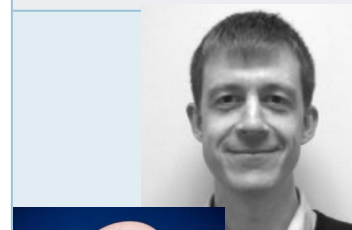
**University Award for Education (Biomedical Sciences):**

- Neuroscience Development Team: Drs Andy Doherty, Jo Howarth & **Clea War-**

**burton**  
- Dr **Emma Robinson**

Dr **Jo Murrell** (Reader in Veterinary Anaesthesia) **Students' Award for Outstanding Supervision of Research Students**

The award winners will be announced at the Awards Ceremony on the evening of 7 June 2016.





## SPOTLIGHT: Prof Alan Roberts FRS



Emeritus Professor **Alan Roberts** (School of Biological Sciences) was elected as a Fellow of the Royal Society in May 2015. He is a distinguished electrophysiologist, neuroanatomist and student of animal behaviour. His sustained investigation of the circuitry that underlies behaviour in amphibian tadpoles has transformed our understanding of a spinal network generating rhythmic movement and its regulation by sensory and descending inputs. Inspired by **Coghill** to work with simple networks in an embryonic vertebrate, his detailed cell by cell analysis provides unique insights into the developmental origins of connectivity and its functional significance.

Alan completed his undergraduate degree at Cambridge. His PhD, gained in 1967, was

pursued at UCLA and the Scripps Institute at the University of California, San Diego. In the same year he accepted a post as Research Fellow in the Department of Zoology, University of Bristol where he worked on crab muscle receptors without impulses and started experiments on *Xenopus* tadpoles. He was appointed to a Lectureship at Bristol in 1970 and to a Personal Chair in 1991.

The young *Xenopus* tadpole provides a very simple model animal with limited behaviour. It can swim either spontaneously or when touched anywhere on the body. A pineal eye detects dimming which speeds up swimming; it stops when the head bumps into solid objects. If the tadpole is held it can make stronger struggling movements.

This simple behaviour is co-ordinated by an extremely basic nervous circuit with very few differentiated classes of neuron. For example, at the time of hatching, the spinal cord appears to have only 8 different classes of neuron but the spinal tadpole can still swim.

The *Xenopus* research team is currently working on a BBSRC-funded project, *Cross-modality integration of sensory signals leading to initiation of locomotion* which aims to complete in 2017.

The **Fellowship of the Royal Society** is made up of the most eminent scientists, engineers and technologists from the UK and the Commonwealth. Past Fellows and Foreign Members have included Isaac Newton, Charles Darwin and Albert Einstein.

## Cool News Item of the Week



An entrepreneur has created a mobility aid to improve the lives of patients with Parkinson's. Neha Shahid Chaudhry, a student at UWE, was inspired to invent a 'smart' walking stick after witnessing her grandfather strug-

gle with the disease for seven years, repeatedly suffering falls when his joints seized up. The device detects when a user's limbs have frozen and they cannot continue walking. Recognising a pause in motion, the stick vibrates to help

the patient regain their rhythm and get moving again. There are an estimated 127,000 Parkinson's patients in Britain who regularly experience joint freezing and abnormal gait symptoms. [More info..](#)

## Three-Minute Thesis Competition

The Bristol Doctoral College, in conjunction with the Bristol Students' Union Postgraduate Network, recently hosted Bristol's third-annual Three Minute Thesis (3MT) competition. This was an opportunity for postgraduate research students across the University to present their research in three minutes in language appropriate to a lay audience.

Amongst the semi-finalists who presented on 27 April 2016, were:

- **Lindsey Sinclair** (Wellcome Trust Research Fellow in SSCM and Neuroscience PhD under Prof Seth Love), *Doomed to dementia? APOE genotype and cognition in adult*

life

- **Amy Burchell** (Clinical Research Fellow and Medicine PhD under Profs Julian Paton and Andreas Baumbach), *Disrupting kidney nerves to treat high blood pressure – can we predict who will respond?*

- **Meera Shah** (Master of Science student under Dr Jo Murrell), *Dogs, Cats and Methadone*

- **Salmi Alsami** (PhD under Dr Guoxing Yu) *Acquisition of Implicit Knowledge of L2 Syntax: Input Modalities and Working Memory*

- **Clara Montgomery** (PhD student under Dr Heather Whitney and Prof Daniel Robert), *Electric bees: why it helps to be positive*

- **Hugo Rego Cam-**

**pello** (under Prof Tim Gallagher), *Cytisine: the end of tobacco addiction*

- **Jane Cowan** (under Dr Nick Scott-Samuel), *Do coloured overlays and lenses help reading?*

Congratulations are extended to Meera Shah who was one of eight finalists who competed to make it to the national semi-finals on 9 May 2016.

3MT is an opportunity to enhance the profile of the postgraduate research being undertaken across Schools and Faculties to the wider community. It is not designed to trivialise or 'dumb down' research, but encourages researchers to consolidate their ideas and crystallise their research discoveries.



## The Naked Scientists

Research Associate at the **Centre for Synaptic Plasticity**, Dr Ullrich Bartsch, was interviewed by UoB BSc (Neuroscience) graduate Connie Orbach on 3 April 2016. Based at the University of Cambridge, *The Naked Scientists* offers regular podcasts on various topics. Entitled *Sleep, memory and schizophrenia*, this episode cov-

ered how sleep plays a pivotal role in making our memories strong and resilient, but the subject is complicated. One of the most debilitating symptoms of schizophrenia is mental memory loss - and does this have something to do with sleep? Sleep has been shown in the past 10 or 20 years to be important for memory

consolidation; and one of the biggest problems in mental health, particularly in schizophrenia, is the treatment of cognitive deficits. Schizophrenia patients will initially start losing their regular sleep pattern before their psychosis kicks in.

The full interview can be heard [here](#).



## Alzheimer's and High Blood Pressure Research



**Alzheimer's Research UK**

The Power to Defeat Dementia

Around 16 million people in the UK suffer from hypertension; it can strain blood vessels and increase the risk of heart attack and stroke. There is also evidence that it can, particularly in midlife, raise the risk of vascular dementia and Alzheimer's disease. However, the mechanism by which high BP influences Alzheimer's disease is largely unknown.

Previous studies have shown that people with high BP tend to have a greater build-up of amyloid protein in the brain, possibly as a result of too much of the protein being made, too little being broken down or a fault in how it's cleared out via the blood vessels.

Prof [Seth Love](#) and his team have been awarded £388k by Alzheimer's Research UK for a 3-year study, which

will allow them to study brain tissue from people with high BP and Alzheimer's. They will study the brain's biochemistry and structure, measure whether high BP had affected blood flow, blood vessel damage, and levels of amyloid. They will use these experiments to build a bigger picture of what damage high BP causes in the brain and how this could drive Alzheimer's.

## Mental Health First Aid for Teachers

Mental health problems are a frequently highlighted as a concern in the teaching profession; a 2015 report found 77% suffered stress, 60% anxiety and 38% depression. A Bristol evaluation, funded by the NIHR, will look at the effectiveness of a training package called Mental Health First Aid (MHFA). The package

aims to equip lay people to recognise the signs and symptoms of mental ill health, and to provide initial help to people in distress, before referring on to specialist help if needed. Dr Judi Kidger and her team will study two aspects: they will train a group of staff in MHFA, who in turn will set up a confidential peer support service for col-

leagues, as there is evidence that school staff do not feel able to talk openly about difficulties they are having. There will also be training for mainstream teachers such as tutors in MHFA for schools and colleges, which specifically aims to equip school staff to support students in distress.

## Empowered Service User Experience for Bristol

Local secondary care mental health services in Bristol have reconfigured and now consist of 14 care-provider partners under the banner *Bristol Mental Health*. A new digital care pathway tool has been devel-

oped by Otsuka Health Solutions along with staff and service users, which aims to enable an empowered service-user experience in the planning and review of their care. A mental health risk pro-

filing tool has also been developed. The risk profiling tool will give each person a risk propensity score which will be used to support clinical decisions about people ready for a step-down in care

or discharge, as well as identifying people who may be more vulnerable to a mental health crisis.

[CLAHRC West](#) will evaluate the acceptability of the new pathway and tools

to the users and evaluate the impact of the tool on the completion of care plans and the involvement of service users in their development.



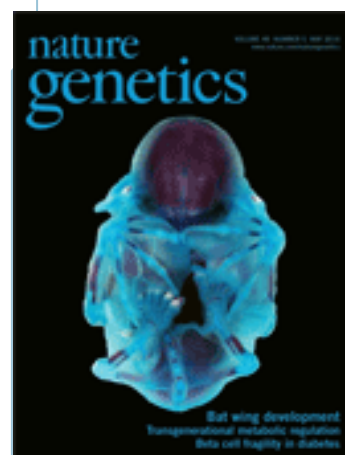
## Autism Genes are in All of Us

Researchers from Bristol, the Broad Institute of Harvard and MIT, and Massachusetts General Hospital have shed light on the genetic relationship between autistic spectrum disorders (ASD) and ASD-related traits in the wider population. The study looked at whether there is a genetic relationship between ASD and the expression of ASD-related traits in populations not considered to have ASD. Their findings suggest that genetic risk underlying ASD, including both inherited variants and *de novo* influences affects a range of behavioural and developmental traits across the population, with those diagnosed with ASD representing a severe

presentation of those traits. ASD are a class of neurodevelopmental conditions affecting about 1 in 100 children. Genome sequencing and analysis has shown that most ASD risk is polygenic; some cases are also associated with rare genetic variants of large effect. The group were able to determine that the genetic risk contributing to autism is genetic risk that exists in all of us, and influences our behaviour and social communication. By using behavioural and cognitive data in the general population to untangle the mechanisms through which different types of genetic risk are operating, a better understanding in terms of expecting what

types of disorders and traits are going to be associated with certain types of genetic risk has been achieved. Collecting and using phenotypic and genetic data in typically developing children can be useful in terms of the design and interpretation of studies targeting complex neurodevelopmental and psychiatric disorders. Based on the genetic link between population-based social communication difficulties and clinical ASD, further research will gain further phenotypic insight into a defined set of genetically influenced ASD symptoms which may help identify and investigate biological processes in typically developing children, which are disturbed in children with ASD.

Robinson EB et al. (2016). Genetic risk for autism spectrum disorders and neuropsychiatric variation in the general population. *Nature Genetics*. 48(5), pp552-555



## Bristol Health and Care Awards

Dr Alan Whone, Consultant Senior Lecturer in Movement Disorder based in the Bristol Brain Centre at Southmead, won the Outstanding Achievement Award at the first Bristol Health and Care Awards held on 10 March 2016. He was honoured for his involvement in pioneering research into a potential treatment for

Parkinson's Disease. He accepted the award on behalf of his patients, whose participation in trials make his research possible. He also thanked the upwards of 50 professionals whose dedication and collaboration to the studies aim to change the perception that it is acceptable to watch those with Parkinson's slowly decline. The image

shows Alan receiving his award from Dr Phil Hammond, better known as Private Eye's MD.



## Chemists Mimic Key Vision Protein



Underlying image © School of Chemistry

Prof [Jonathan Clayden](#) (left) and colleagues at Bristol, Manchester and Hull have created an artificial mimic of rhodopsin, a protein that resides in cell membranes in the retina. The absorption of light by rhodopsin is the first step in the biochemistry of vision.

Using molecular design features taken from some antibiotic molecules that also bind to membranes, the re-

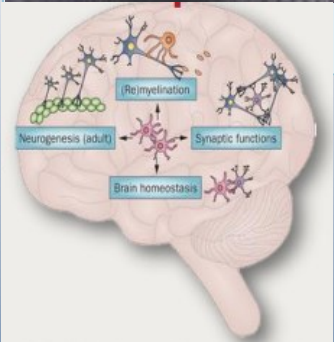
searchers were able to design and build a molecule that finds its way into a membrane and switches between different shapes in response to light of specific wavelengths.

The work revealed that unlike many natural molecules, these artificial structures have similar properties in solution and in membranes, making the prediction of their behav-

our much more reliable.

*...this discovery could lead to new ways of building light-sensitive artificial cells and could allow us to bypass usual communication mechanisms used by cells.*

De Poli et al. (2016). [Conformational photoswitching of a synthetic peptide foldamer bound within a phospholipid bilayer](#). *Science*. Online 31 March '16



From top: Jonathan Clayden, Marcus Munafò, Jeff Brunstrom, image from The Unforgettable Placenta poster © Ashleigh Bignall

## Brigstow Experimental Partnerships

The Brigstow Institute recently announced its 2015-2016 funded partnerships following a call for corn-seed projects:

**Interactive Playable Bottles** brings together Peter Bennett (Computer Science), [Marcus Munafò](#) and [Jeff Brunstrom](#) (both Experimental Psychology) and creative technologists (Understory) to explore how bottles might provide interactive interfaces for engaging with issues of

overconsumption.

**Reclaiming the Road** brings together historians Martin Hurcombe (Modern Languages), Erika Hanna (Humanities) and Nathan Cardon (Birmingham) with an experimental psychologist, Ian Walker (Bath) and a cycling organisation (Lesportif, Bristol) to explore new ways of experiencing urban and rural landscapes from the bicycle saddle.

**Young People with**

**Special Needs Making Music using Technologies** brings together educationalist Marina Gall (Graduate School of Education) with teachers and students from a local special school (Claremont School), Open Up Music charity, the Music Education Council and videographer Malcolm Clare to explore the use of video to provide insight into the musical development of young people with special needs.

## Research Without Borders

Congratulations are extended to [Ashleigh Bignell](#) who beat off over 100 competitors to win second prize at

the [Research Without Borders Exhibition](#) held on 9 May 2016. Her poster, entitled *The Unforgettable Placenta*, ex-

plores the origins of neurological disorders during critical stages of foetal development in the womb.

## NHS Commissioned service for GPs

PI [Ruth Riley](#) and colleagues at Bristol, Keele and UCL have fed back early research findings to help shape the development of a NHS England commissioned service for GPs with mental health problems.

High stress and reduced well-being are common amongst doctors, including general practitioners. Doctors are more likely to experience mental health symptoms and are at greater risk of suicide compared with the general population. Despite this need, evidence suggests that the NHS workforce, including doctors, have insufficient access, and face barriers, to main-

stream healthcare provision. To date, little research has focused on the mental health of the NHS workforce, including doctors working in general practice.

After overwhelming interest from participants, researchers have reported that representatives from the Medical Directorate at NHS England have taken on board some of the emerging barriers and facilitators to help-seeking. GPs frequently report struggling in isolation or breaking down and burning out on the job. Meanwhile, support and provision is often patchy, inadequate and difficult to access due to the stig-

ma of mental illness and concerns about confidentiality. Addressing workforce shortages to enable GPs to take time off work and accessing timely, good quality care and enabling doctors to return to work is therefore crucial in ensuring the mental health needs of doctors are met.

The collaborative study, entitled *Exploring the barriers and facilitators to help-seeking by GPs: Improving access to support* aims to improve understanding of the barriers and facilitators and to identify solutions so that current and future doctors can access suitable care when necessary.



## Colour Constancy in Chickens

[Peter Olsson](#) & [Almut Kelber](#) of Lund with Dr [David Wilby](#) from UoB's [Ecology of Vision Group](#) investigated colour constancy in chickens.

The birds easily learned under white light to choose a food container of a specific orange colour and to avoid food containers with a yellow or red colour. They found that the chickens could easily

find the correct colour in redder illuminations, meaning that they do have colour constancy, just like humans. The birds could recognise the correct orange colour in more strongly changed illuminations if the difference between the orange and the yellow and red colour was also more pronounced. However, their colour constancy was not perfect, as with humans. The chickens remained

colour constant in larger illumination changes than they would experience in their natural environment. Chickens, and very likely other birds as well, can thereby rely on their colour vision in the different environments they move between to find and identify food and mates.

[Olsson P et al. Quantitative studies of animal colour constancy: using](#)



[the chicken as model.](#)  
*Proceedings of the Royal Society of London B.* 283 (1830).

Image © Peter Olsson



## P2X3 Antagonism Reduces Hypertension

Afferent Pharmaceuticals who collaborate closely with Prof [Julian Paton](#), specialise in the development of small molecule compounds targeting the P2X3 receptor for the treatment of poorly managed and common neurogenic conditions. They recently presented data from preclinical research that validates P2X3 as a new therapeutic target for hypertension at the American Thoracic Interna-

tional Conference in May 2016. AF-130 is an orally available compound that selectively blocks the P2X3 receptor, and is Afferent's second-generation P2X3 antagonist.

Data show that aberrant carotid body signalling in two preclinical models of hypertension is caused in part by upregulation and stimulation of P2X3 receptors of the carotid sinus nerve. The carotid body critically

monitors changes in the blood oxygenation and helps the autonomic nervous system to control cardiovascular and respiratory activity. After treatment with the P2X3 inhibitor, they were able to inhibit the aberrant carotid body signalling that leads to hypertension.

Proof-of-concept Phase II Clinical Trials are now planned to continue this work.

[More info..](#)



## Smoking Cessation Aids

£930,000 from EPSRC to develop potential new aids to help smokers stop smoking has been awarded to Profs [Tim Gallagher](#) (PI- shown left) and [Adrian Mulholland](#) (both School of Chemistry) and Dr [Richard Sessions](#) (School of Biochemistry). The funds will use a combination of synthetic chemistry, computational modelling, structural biology and

pharmacology to develop potential new smoking cessation agents.

There are 1.25bn smokers worldwide, 50% of whom will die from smoking-related disease if they continue to smoke. Many want to quit. Effective smoking cessation aids would prevent millions of premature deaths and reduce the huge burden of smoking-related illness. There is enor-

mous demand for effective, safe and cheap smoking cessation therapies.

The three-year project, entitled *Nicotinic Ligand Development to Target Smoking Cessation and Gain a Molecular Level Understanding of Partial Agonism*, will explore promising new compounds for smoking cessation in conjunction with industrial partners.



## Other Interesting Tidbits You Should Know

Dr [Emma Robinson](#) has joined the MRC Industrial CASE studentship panel.

PhD student [Rachel Harris](#) (under Seth

Love and Shelley Allen-Birt) has set up Bristol's first [Science Film Festival](#). A regular volunteer with the [British Science Association](#), Rachel has been heavily involved

with the Early Career Neuroscientist Day (Sept '15) and the Neuroscience Festival (Mar '16), and she is also BN's social media guru.



Tim Gallagher and Rachel Harris

## ELIZABETH BLACKWELL FUNDING

### [EBI Workshops Funding](#)

Support interdisciplinary workshops in health research at new or emerging interface between two or more disciplines. Applications reviewed all year.

### [EBI Catalyst Fund](#)

Pump priming awards support the most promising and ambitious ideas across the widest interdisciplinary boundaries. They will be identified largely through the running of [workshops](#) to explore new possibilities and identify the big questions. Applications reviewed all year.

### [Returning Carers Scheme](#)

To support academic staff across all faculties in re-establishing their independent research careers on return from extended leave (16 weeks or more) for reasons connected to caring (e.g. maternity leave, adoption leave, additional paternity leave, leave to care for a dependant.).

The deadline for applications is 30 April and 31 October each year.

### [EBI Postgraduate Extension Fellowships](#)

Designed to support a small number of postgraduate researchers currently enrolled on one of the University of Bristol Wellcome Trust-funded 4 year PhD programmes ('Dynamic Cell Biology', 'Neural Dynamics' and 'Molecular, Genetic and Lifecourse Epidemiology').

Deadline for applications is 27 June 2016



## FUNDING OPPORTUNITIES

Set up via **Research Professional (RP)**, a full calendar of funding opportunities for Neuroscience research is [available online](#). Subscribing to a calendar will place the entries in your own calendar, which will automatically update according to pre-specified search criteria. Staff and students have **FREE** access to Research Professional online from all computers on the University network. You can create your own personalised funding opportunity e-mail alerts by registering with RP. Find out all about it on the [RED website](#).

### **Guarantors of Brain**

[Salary support for trainee neurologists in basic neuroscience](#)

Closing Date: none

Award amount: unspecified

**\*Research Professional**



Funding opportunities cover travel grants, early-career researcher funds as well as major grants for up to £1M. Have a browse and see what possibilities are out there. This is NOT an exhaustive list– [Research Professional](#) has loads more options listed!



RETA LILA WESTON  
TRUST

CLAHRC West

Collaboration for Leadership in Applied Health Research  
and Care West

Supports young clinicians intending to pursue careers in neurology who wish to combine clinical training with research. Applicants must be eligible for, or be engaged in, neurology higher specialist training in the UK. It is expected that applicants have the intention of securing a career in clinical neurology or related specialities and to secure a definitive training post, research fellowship or lectureship in clinical neurology or related specialities in the UK.

### **Guarantors of Brain** Travel grants

### *Guarantors of Brain*

Closing date: none

Award amount: £400 for UK, up to £800 for abroad

Enable clinical and non-clinical neurologists, psychiatrists, neuroscientists and others to attend scientific meetings or visit laboratories and clinical departments abroad to support their research interests. Applicants must be in doctoral or postdoctoral training, whether clinically qualified or not, and be conducting work in the UK.

### **Reta Lila Weston Trust** Microbiome in neurodegeneration funding

Deadline: unspecified

Award amount: £600,000

Seek proposals for novel research with respect to the microbiome that will accelerate the development of therapeutics, identify preventative strategies for neurodegenerative diseases and neurocognitive decline or understand the resilience against such conditions or decline in elderly individuals as a result of the microbiome.

### **NIHR CLAHRC West** Training bursary scheme

Closing date: 1 February, 1 June and 1 September    Award amount: £600

Gives staff from the local NHS, health and social care sector the opportunity to attend high quality research and evaluation training at half the price. Bursaries are available for 50 per cent of the course fees; the applicant or their employer is expected to fund the remaining 50 per cent. The bursary aims to promote wider engagement and improve skills in research and evidence in the CLAHRC West patch, particularly for those who have not previously had opportunities for this type of training.

You can apply for bursary support towards any course relevant to research and evaluation in health and social care. This includes study days, workshops and short courses (including individual modules) but not MSc or PhD tuition fees.

Preclinical research on model organisms to predict treatment outcomes for disorders associated with intellectual and developmental disabilities (R01)

### Wellcome Trust

#### Clinical Research Career Development Fellowships

Closing date: 13-Jun-16

Award amount: unspecified

Enables medical, dental, veterinary and clinical psychology graduates to continue their research at postdoctoral level and develop scientific independence. It will provide support for up to eight years and the flexibility to balance research and clinical responsibilities.

### National Institute of Mental Health

#### Development and application of PET and SPECT imaging ligands as biomarkers for drug discovery and for pathophysiological studies of CNS disorders (R21)

Closing date: 16-Jun-16

Award amount: US\$450,000

Aims to support the development of novel radioligands for positron emission tomography or single photon emission computed tomography imaging in the human brain, and that incorporate pilot or clinical feasibility evaluation in pre-clinical studies, model development or clinical studies.

### National Institute of Neurological Disorders and Stroke

#### Neurobiology of migraine

Closing date: 16-Jun-16

Award amount: US\$275,000

Support research elucidating the mechanisms underlying migraine; expanding our current knowledge of the role of genetic, physiological, biopsychosocial and environmental influences in migraine susceptibility and progression; and exploring new therapeutic targets and therapies for acute migraine management and longer term prevention.

### US Department of Defense

1. Peer reviewed medical research programme: investigator-initiated research award
2. Peer reviewed medical research programme: technology and therapeutic development award
3. Peer reviewed medical research programme: focused programme award

Closing Date: 23-Jun-16

Award amount: US\$1.5M / US\$3M

1. support research that will make an important contribution toward research and patient care
2. support the translation of promising preclinical findings into products for clinical applications, including prevention, detection, diagnosis, treatment or quality of life

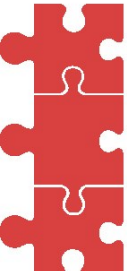
wellcome trust

National Institute  
of Mental Health



NATIONAL INSTITUTE OF  
NEUROLOGICAL  
DISORDERS AND STROKE





# Muscular Dystrophy Canada

- to optimise research and accelerate the solution for a critical question related to at least one topic area through a synergistic, multidisciplinary research programme. Applications should include multiple, distinct research projects led by individual project leaders that address complementary aspects of the overarching challenge. Applicants are strongly encouraged to submit a minimum of four research projects and additional studies are allowed.

Projects must be directly related to the healthcare needs of the military service members, veterans or other beneficiaries least one of the congressionally directed topic areas of interest and address at least one of the following topic areas:

- chronic migraine and post-traumatic headache
- dystonia
- fragile X syndrome
- hydrocephalus
- integrative medicine
- metals toxicology
- non-opioid pain management
- psychotropic medications
- pulmonary fibrosis
- rett syndrome
- sleep disorders
- tinnitus

**British Council**  
Newton Fund



Closing date: 27-Jun-16

Award amount: unspecified

An opportunity to initiate or develop international collaborations through [official development assistance](#) (ODA) funds. The Fund aims to promote the economic development and welfare of either the partner countries or, through working with the partner country, to address the problems of low-income and vulnerable populations.

[Travel Grants](#) for early-career researchers

[Workshops](#) for early-career researchers led by Leading Researchers

[Institutional Links](#) that support collaboration between groups led by Leading Researchers or Established Researchers

Participating countries include: *Brazil, Colombia, Egypt, India, Indonesia, Kazakhstan, Mexico, Philippines, Turkey, South Africa, Thailand*

**Muscular Dystrophy Canada**  
[Respiratory Care and Neuromuscular Disorders](#)

Closing Date: 30-Jun-16

Award amount: CDN\$50,000

Supports proposals related to improving respiratory health for people living with neuromuscular diseases. Projects may involve the following:

- prevention and early intervention strategies
- health services utilisation
- usefulness of and access to therapies and equipment
- cost effectiveness studies
- assessment of educational and clinical interventions
- development and dissemination of standards of care
- advancement of best practices in care and treatment
- assessment of pilot training programmes
- outcome measures
- development of an educational programme module, with a clearly defined assessment component
- natural history studies
- evaluation of diagnostic tests

Lead applicants must hold an affiliation with a Canadian or international recognised academic institution. Other institutions, including those outside of Canada, are considered but may be required to provide additional documentation to support the application.

**Association of British Neurologists**

[Travel bursaries](#)

Closing date: 01-Jul-16

Award amount: £1,000

Aim to support educational and research visits to developing countries all over the world.

**University of Bristol**

[Vice-Chancellor's Impact Awards](#)

Closing date: 04-Jul-16

Award amount: £1,500

Applications are invited from individual researchers or teams who can demonstrate the contribution that their research has made in benefiting society within the following categories:

- Business and Economy
- Policy and Practice
- Society and Culture
- Health and Well-being

**Alzheimer's Research UK**

[Target validation pathfinder grant](#)

Closing Date: 06-Jul-16

Award amount: £50,000



Federation of  
European  
Neuroscience  
Societies

**FENS**

Provides funds for small, translational research projects that show potential for an application to the Dementia Consortium or collaboration with the Drug Discovery Alliance. Researchers who have promising data or projects which are too preliminary to progress with either schemes, would benefit from funding for preliminary validation work or feasibility studies to establish the viability of an approach.

### **Alzheimer's Research UK**

#### [Major project grants](#)

Closing date: 06-Jul-16

Award amount: £1M

Fund high-quality research projects on Alzheimer's disease and related dementias.

### **Federation of European Neuroscience Societies**

#### [Brain prize course stipends](#)

Closing Date: 11-Jul-16

Award amount: €3,500

Support participation in the brain prize course, to be held from 10 to 31 October 2016 in Bordeaux Neurocampus, France. The course aims to give promising young neuroscientists in-depth exposure to the breadth of research on the hippocampus and to provide hands-on training in state-of-the-art methods used to study hippocampal function. PhD students and junior postdocs with excellent qualification and a strong motivation to pursue a career in neuroscience may apply.

### **European Research Council**

#### [Starting Grants](#)

Internal closing date: 12-Jul-16

Award amount: €1.5M

Intended to enable exceptional researchers between 2 and 7 years from PhD completion to become independent research leaders and strengthen their own research team or programme. All research fields are supported. Proposals will be handled through the University's major bids process.

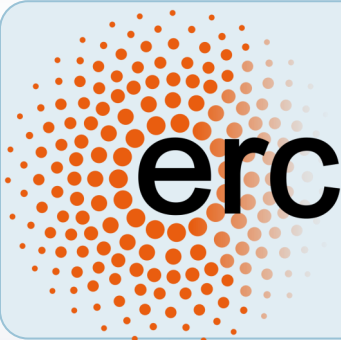
### **Medical Research Council**

#### [Momentum awards – institutional pump-priming awards for dementia research](#)

Closing Date: 18-Jul-16

Award amount: £1M

Support universities engaged in biomedical neurodegeneration or dementia-related research to open up new scientific avenues or to recruit research leaders and rising stars from within and outside the UK. The goal is to build capacity and connectivity of the new research institute. Proposals may consider a broad scope of neurodegenerative diseases such as Alzheimer's disease, vascular dementia, fronto-temporal dementia, Parkinson's disease, Lewy body dementia, Huntington's disease and Creutzfeldt-Jakob disease.



Medical  
Research  
Council

**MRC**

**National Institute of Mental Health****Adult maturational changes and dysfunction in emotion regulation (R01)**

Closing Date: 22-Jul-16

Max award: unspecified

For mechanistic research on how age- and sex-related changes in emotion processing develop over the adult life course and how these changes may interact with and inform the understanding of affective dysregulation in adult mental disorders and Alzheimer's disease. Research that will leverage the already established normative backdrop of generally improved emotion regulation with ageing, as well as research that will expand this evidence base is particularly sought. One aim is to clarify the trajectories of change in emotion processing and linked neurobiological and neurobehavioral factors in ageing adults who experience mood and anxiety disorders. Equally important aims are to advance understanding of the factors involved in normative maturational shifts in these processes and of sources of individual variation therein, and to clarify how such shifts may relate to irregularities in the integrative neural-behavioural mechanisms of affect regulation seen in these adult mental disorders and in Alzheimer's disease. It is anticipated that proposed studies may identify novel targets for mental health interventions or prevention efforts, or provide clues as to which available intervention strategies might be optimally applied to normalise emotion dysregulation or to strengthen emotional resilience at particular stages of the adult life cycle.

**European Academy of Neurology****Research Fellowship**

Closing date: 31-Aug-16

Award amount: €24,500

Support young neurologists who wish to carry out neuroscientific research.

- 1) research training fellowship for 12 months, which leads to completion of a higher degree or a grant application or a peer-reviewed publication
- 2) research experience fellowship for at least six months,

**Department of Health****Health services and delivery research programme – researcher-led  
workstream: 16/52, 16/53**

Deadline: 08-Sep-16

Award amount: unspecified

Supports research into the quality, appropriateness, effectiveness, equity and patient experience of health services. For this round, the emphasis is on large scale studies of national importance, such as research addressing issues of major strategic importance to the NHS, research likely to lead to changes in practice or having the potential to be applied to other conditions. Applicants may submit either a standard outline proposal or an evidence synthesis full proposal.



**Department  
of Health**

The workstream has a continued interest in the following research areas:

- dementia
- surgical and implantable devices
- primary care interventions
- very rare diseases
- long-term conditions in children
- multimorbidities in older people

NIHR will fund HEIs at a maximum of 80% fEC.

### **Medical Research Council**

#### [Clinical research training fellowship](#)

Closing Date: 08-Sep-16

Award amount: salary/research expenses/travel

Enables clinically qualified, active professionals to undertake specialised or further research training in the biomedical sciences within the UK. Applications from basic studies to translational and developmental clinical research are welcome. The fellowship supports clinicians to undertake a higher research degree, while medically qualified applicants with a PhD can undertake early postdoctoral training enabling them to be competitive at the clinician scientist fellowship level.

Veterinarians may apply if they have equivalent qualifications. Postdoctoral applicants may apply if they are clinically qualified individuals who received their PhD five or more years ago and have not been active in academic research since.

### **British Council – Newton Fund**

#### [UK-China PhD Placement Programme](#)

Closing date: 20-Sep-16

Award amount: unspecified

Offers sponsorships for UK and Chinese PhD students and their supervisors to spend a period of study of three to 12 months (for PhD students) and up to three months (for supervisors) at higher education institutions in China or the UK. Funding is provided by the UK on the basis that it will be used to fund programmes that will contribute to the UK's [Official Development Assistance](#) (ODA) commitment.

The focus is on research areas that reflect the common interests and demands of both countries, including:

- health and life sciences
- food and water security
- environmental technologies
- energy
- urbanisation

- education and creative economy for economic development and social welfare

### National Institute of Allergy and Infectious Diseases

[From association to function in the Alzheimer's disease post genomics era \(R01\)](#)

Closing Date: 27-Sep-16

Award amount: US\$1.75M

Supports innovative and collaborative research focused on understanding the structure and function of proteins or protein complexes regulated by different AD genetic variants that have been identified to be associated with the sporadic and late onset AD. Specifically, this FOA seeks to identify and develop more effective and integrated platforms to screen protein functions, protein-protein interaction, protein complexes and their regulation by AD genetic variants prior to any in-depth mechanistic studies. Collaborative research projects that will translate initial genome wide association study discovery into functional and phenotypical insights and ultimately lead to understand the complex biology of AD are encouraged.

### Alzheimer's Research UK

[Network accelerate scheme](#)

Closing Date: 05-Oct-16

Award amount: £250,000

Provides funds for research resources or tools that could be of benefit to biomedical dementia research in the ARUK network and beyond. This could include the generation and validation of reagents, the maintenance or creation of research resources or scientific networking beyond what could normally be covered by network centre grants.

The lead applicant and point of contact must be an ARUK network member, and the application must include at least two network centres. It can also include researchers or institutions outside the UK.

### Alzheimer's Research UK

[Network cooperation grant](#)

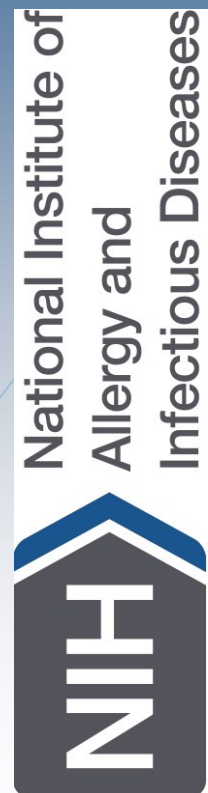
Closing Date: 05-Oct-16

Award amount: £100,000

Supports projects or schemes that further cooperation and collaboration between at least two of the organisation's network centres. The lead applicant and point of contact must be a member of an ARUK network, with each application including at least two network centre as a co-applicant. Applications may include researchers or institutions outside the UK.

### Alzheimer's Research UK

[Pilot project grants](#)







Closing Date: 05-Oct-16

Award amount: £50,000

Provide funding for small, innovative research projects and pilot studies that would lead to a major project or programme application to ARUK or other funding body. The lead applicant and point of contact must be based in a UK academic or research institution, however the application may include researchers or institutions outside the UK.

### **Alzheimer's Research UK**

#### [Preparatory clinical research fellowship](#)

Closing Date: 05-Oct-16

Award amount: £20,000 + salary

Supports clinicians at various stages of training who are planning a career in academic medicine. It provides fellows with the necessary track record and skills to compete for full clinical fellowship Sabbaticals and secondments grants

### **Alzheimer's Research UK**

#### [PhD scholarship](#)

Closing Date: 05-Oct-16

Award amount: £16k pa + £15k travel and costs

Supports a full PhD programme that addresses Alzheimer's disease and related dementias. Applications must be submitted by individual or joint supervisors. The lead applicant and point of contact must be based in the UK, however researchers abroad may be included in the application. If the lead applicant does not hold a tenure appointment, the application must include a co-supervisor who does.

### **European Academy of Neurology**

#### [Clinical fellowship programme](#)

Closing Date: 31-Oct-16

Award amount: €2,550

Enables neurologists in training or recently qualified to gain a clinical observational experience over a period of six weeks at a department with recognised expertise in a specific field. Residents of neurology, with a minimum training in neurology of two years, or certified clinical neurologists, with no more than three years clinical practice since completing their training, may apply. Candidates must come from an EAN member country, fluent in English or in the local language of the host country, and must have an offer accepted by an approved host department. If awarded a fellowship, they are expected to become individual members.

### **Dowager Countess Eleanor Peel Trust**

#### [Peel and Rothwell Jackson postgraduate travelling fellowships](#)

THE DOWAGER COUNTESS ELEANOR PEEL TRUST



Closing Date: 04-Nov-16

Award amount: £30,000

Enable researchers to spend up to one year at a centre of international excellence for the purpose of research, advanced study or the acquisition of a new clinical skill unlikely to be available in the UK. Candidates should be qualified and registered to practise in medicine, nursing or another health profession.

### **Alzheimer's Research UK**

[Sabbaticals and secondments grants](#)

Closing Date: 16-Nov-16

Award amount: £50,000

Support tenure or tenure-track researchers who wish to enrich their research programmes and establish collaborations. The scheme enables researchers to experience new and interdisciplinary areas, which would not be possible through existing funds.

### **Alzheimer's Research UK**

[Equipment grants](#)

Closing Date: 16-Nov-16

Award amount: £100,000

Provide funds for scientific equipment, flexibly defined. Applications for joint funding for even larger pieces are accepted. ARUK would prefer to place equipment within centres of excellence, such as institutions within the ARUK network, where it would enhance a strong dementia research e Joint dementia training research partnerships

### **Great Britain Sasakawa Foundation**

[Butterfield awards](#)

Closing Date: 15-Dec-16

Award amount: £15,000

Aim to encourage and facilitate exploratory exchanges and collaborations between qualified professionals in Japan and the UK, as well as investigation of scientific, clinical, social and economic aspects of medicine in which Japanese and British scientists, practitioners and policy makers may learn from each other. Preference will be given to those who have not previously been involved in a UK-Japan collaborations. Applications from ECRs are welcome. Areas of interest include: health management; public health; health education; stem cell technology; community-based psychiatry; patient and carer involvement; drug testing; cancer; voluntary sector development; architecture and design for healthcare.



## FEATURED PUBLICATION

### Design of a Virtual Player for Joint Improvisation with Humans in the Mirror Game

Zhai C, Alderisio F, Słowiński P, Tsaneva-Atanasova K & Di Bernardo M  
*PLoS ONE*. 11(4), e0154361

Joint improvisation is often observed among humans performing joint action tasks. Exploring the underlying cognitive and neural mechanisms behind the emergence of joint improvisation is an open research challenge. This paper investigates jointly improvised movements between two participants in the mirror game, a paradigmatic joint task example. First, experiments involving movement coordination of different dyads of human players are performed in order to build a human benchmark. No designation of leader and follower is given beforehand. We find that joint improvisation is characterized by the lack of a leader and high levels of movement synchronization. Then, a theoretical model is proposed to capture some features of their interaction, and a set of experiments is carried out to test and validate the model ability to reproduce the experimental observations. Furthermore, the model is used to drive a computer avatar able to successfully improvise joint motion with a human participant in real time. Finally, a convergence analysis of the proposed model is carried out to confirm its ability to reproduce joint movements between the participants.

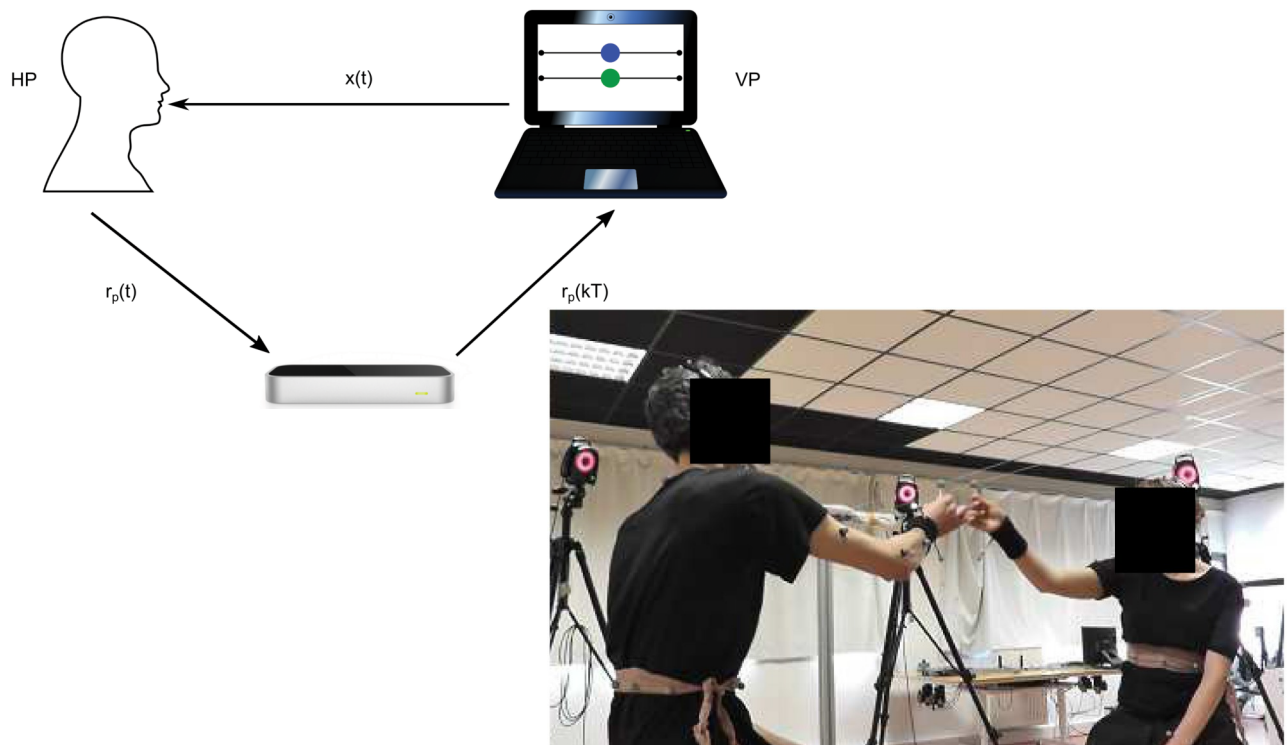


Image captions: (1) The position of the human fingertip  $r_p(t)$  is detected by a leap motion controller, and the sampled position  $r_p(kT)$  is sent to the computer, while the position  $x(t)$  of the VP is generated by implementing the numerical algorithm of the single model. Two circles are shown on the computer screen, which correspond to the end effectors' position of the HP (blue circle) and the VP (green circle), respectively. (2) Two participants face each other and are asked to perform synchronized motion by moving two balls along a string to which they are respectively attached.

# RECENT PUBLICATIONS

Kemp K, Cook A, Redondo J, Kurian K, Scolding N & Wilkins A (2016). Purkinje cell injury, structural plasticity and fusion in patients with Friedreich's ataxia. *Acta neuropathologica communications*. 4(53)

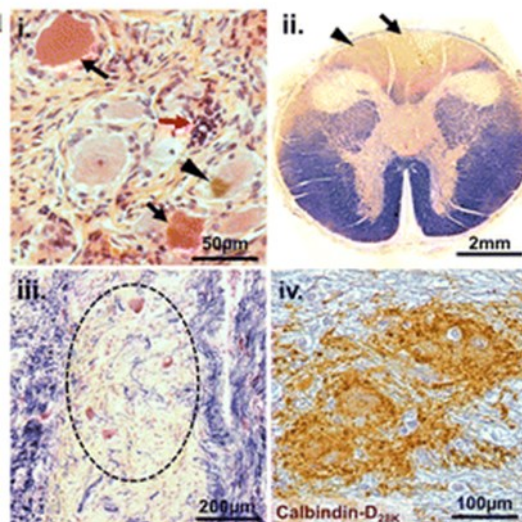


Image caption: Neuronal injury in FRDA. Tissue sections derived from FRDA cases showing pathological lesions. Characteristic FRDA lesions. (i) H&E staining of the dorsal root ganglion showing shrunken neurons with severe eosinophilia of the perikaryon (black arrows), neuronal lipofuscin accumulation (black triangle) and a nest of reactive satellite cells known as a nodule of Nageotte indicating ganglion neuronal cell degeneration (red arrow).

Van Leeuwen F, Dukes A, Tybur JM & Park JH (in press). Disgust sensitivity relates to moral foundations independent of political ideology. *Evolutionary Behavioral Sciences*.

Fluharty M, Taylor AE, Grabski M & Munafò MR (2016). The Association of Cigarette Smoking with Depression and Anxiety: A systematic review. *Nicotine and Tobacco Research*. Published online 19 May 2016.

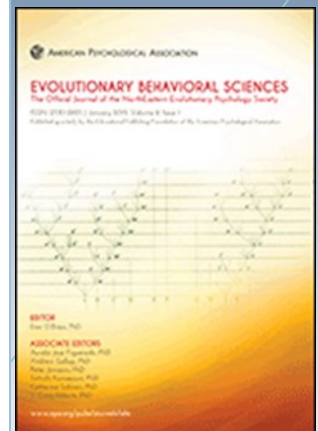
Lerchel S, Heinzell S, Alves G et al. (2016). Aiming for study comparability in Parkinson's disease: Proposal for a modular data set of biomarker assessments to be used in longitudinal studies. *Frontiers in Aging Neuroscience*. 8 (121)

Iosub R, Hawkins S, McCarville C, Kennedy H, Williams K & Watson B (2016). Torsades-de-Pointes Predisposing Risk Factors (TdPPRFs) in a cohort of patients maintained on high dose methadone – a clinical safety case-load analysis: Abstracts of the 24rd European Congress of Psychiatry. *European Psychiatry*. 33, Supplement, ppS301-S302

Martin J, Tilling K, Stergiakouli E, Davey Smith G, Hubbard L, Thapar A, O'Donovan MC & Zammit S (2016). Association of Genetic Risk for Schizophrenia With Nonparticipation Over Time in a Population-Based Cohort Study. *American Journal of Epidemiology*. Published online 10 May 2016

Chen J, Bacanu SA, Yu H et al. (2016). Genetic Relationship between Schizophrenia and Nicotine Dependence. *Scientific Reports*. 6(10), p25671

Treur JL, Taylor AE, Ware JJ, McMahon G, Hottenga J-J, Baselmans BML,





Willemsen G, Boomsma DI, Munafò MR & Vink JM (2016). Associations between smoking and caffeine consumption in two European cohorts. *Addiction*. 111(6). pp1059-1068



Hudson CA, McArdle CA & López Bernal A (2016). Steroid receptor co-activator interacting protein (SIP) mediates EGF-stimulated expression of the prostaglandin synthase COX2 and prostaglandin release in human myometrium. *Molecular Human Reproduction*. Published online 8 May 2016.

McBryde F, Malpas SC & Paton J (in press). Intra-cranial mechanisms for preserving brain blood flow in health and disease. *Acta Psychologica*.



Munafò MR, Larsson Lönn S, Sundquist J, Sundquist K & Kendler K (2016). Snus use and risk of schizophrenia and non-affective psychosis. *Drug and Alcohol Dependence*. Published online 6 May 2016

Hendy E, Marvar P, Cruise T, Walas D, DeCicco D, Vadigepalli R, Schwaber J, Waki H, Murphy D & Paton J (in press). Systemic Leukotriene B4 receptor Antagonism Lowers Arterial Blood Pressure and Improves Autonomic Function in the Spontaneously Hypertensive Rat. *The Journal of Physiology*.



Bishop P, Rocca D & Henley J (in press). Ubiquitin C-terminal hydrolase L1 (UCH-L1): Structure, distribution and roles in brain function and dysfunction. *Biochemical Journal*.

Fitzsimons CP, Herbert J, Schouten M, Meijer OC, Lucassen PJ & Lightman S (2016). Circadian and Ultradian Glucocorticoid Rhythmicity: Implications for the Effects of Glucocorticoids on Neural Stem Cells and Adult Hippocampal Neurogenesis. *Frontiers in Neuroendocrinology*. Published online 24 May 2016

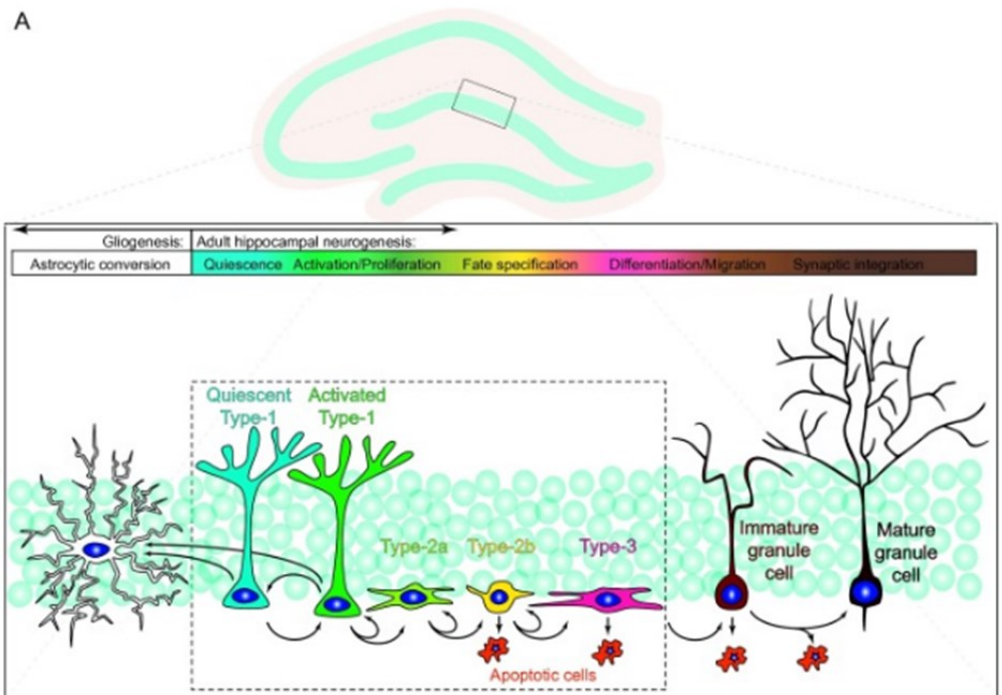
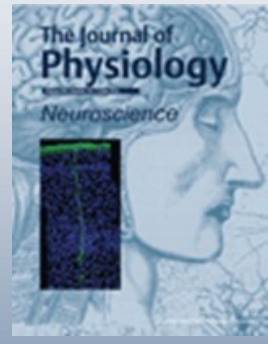


Image caption: Circadian effects of GC on levels of proliferating and quiescent

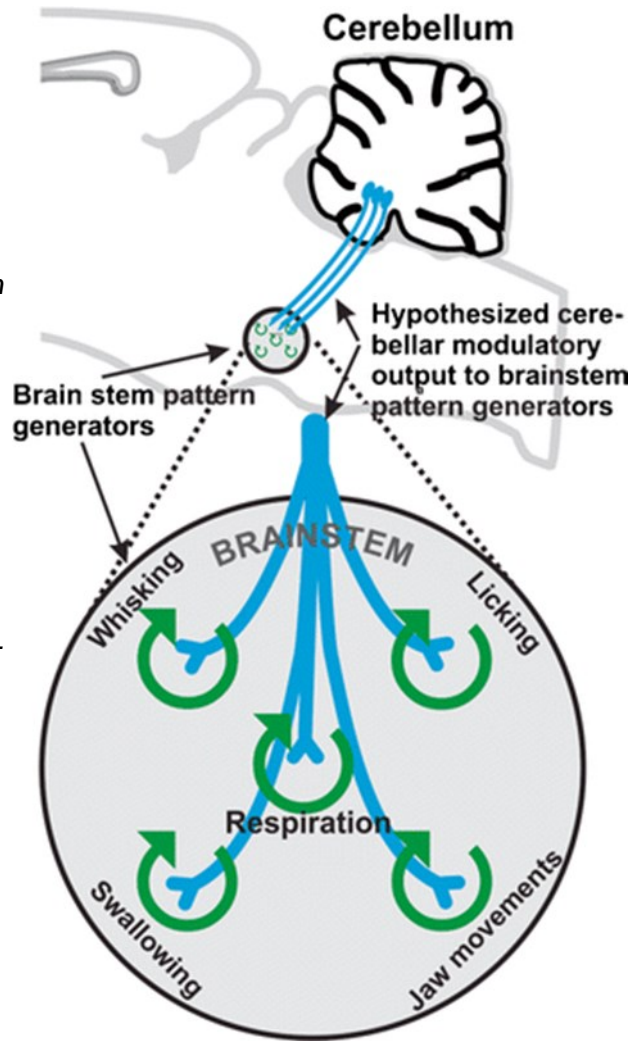


NSPC. (A) Schematic depiction of the adult rodent hippocampus displaying the neurogenic cascade, its main phenotypical phases and the associated cells. The boxed area highlights the main cell-types that determine AHN levels.

Bertamini M, Zito M, Scott-Samuel NE & Hulleman J (2016). [Spatial clustering and its effect on perceived clustering, numerosity, and dispersion](#). *Attention, Perception & Psychophysics*. Published online 3 May 2016

Lang EJ, Apps R, Bengtsson F et al. (2016). [The roles of the olivocerebellar pathway in motor learning and motor control.: A consensus paper](#). *The Cerebellum*. Published online 19 May 2016

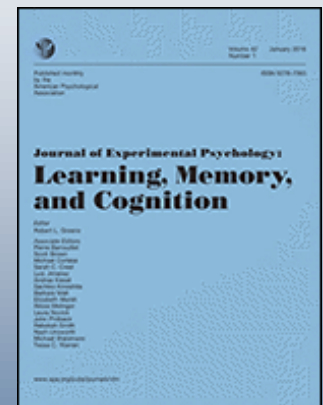
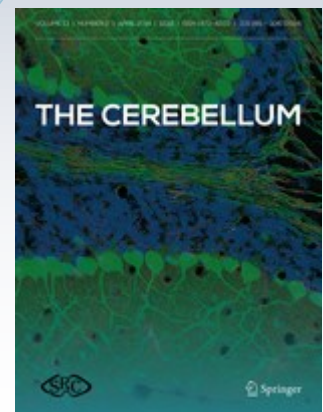
Image caption: Schematic diagram of the hypothesized cerebellar role in coordinating brain-stem pattern generators. The brainstem contains autonomous pattern generators for respiration and orofacial movements, including those involved in fluid licking, which involves the coordination of tongue, jaw, and respiratory movements. Efferent projections from the cerebellar nuclei reach many areas of the brain stem, including areas containing pattern-generating circuits for respiratory and orofacial movements. The hypothesis I put forward is that those efferents include projections that play a key role in optimizing the temporal coordination of brain stem pattern-generating circuits involved in licking movements



Sullivan SA, Hollen LI, Wren Y, Thompson A, Lewis GH & Zammit S (2016). [A longitudinal investigation of childhood communication ability and adolescent psychotic experiences in a community sample](#). *Schizophrenia Research*. 173(1-2), pp54-61

Kent C & Lamberts K (2016). [Stimulus Probability Effects in Absolute Identification](#). *Journal of Experimental Psychology: Learning, Memory, and Cognition*. 42 (5), pp740-748

Agorastos A & Linthorst ACE (2016). [Potential pleiotropic beneficial effects](#)





of adjuvant melatonergic treatment in posttraumatic stress disorder. *Journal of Pineal Research*. Published online 29 April 2016

Abou Ismail U & Mendl M (2016). The effects of enrichment novelty versus complexity in cages of group housed rats (*Rattus norvegicus*). *Applied Animal Behaviour Science*. Published online 29 April 2016

Image caption: type of cage and enrichment items used



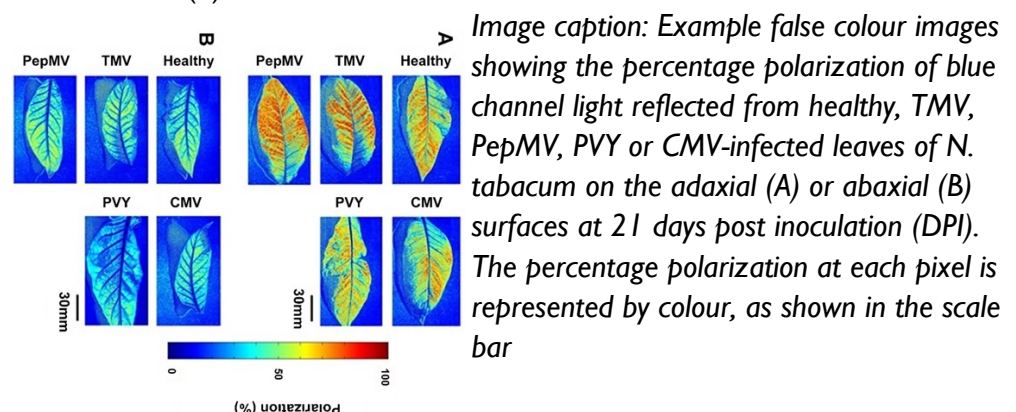
Griffith TJO, Tsaneva-Atanasova K & Mellor J (in press). Control of  $Ca^{2+}$  influx and calmodulin activation by SK-channels in dendritic spines. *PLoS Computational Biology*.

Rossi R, Zammit S, Button KS, Munafo M, Lewis GH & David A (2016). Psychotic Experiences and Working Memory: A Population-Based Study Using Signal-Detection Analysis. *PLoS ONE*. 11(4), e0153148

Bourdeaux C, Thomas M, Gould T, Malhotra G, Jarvstad A, Jones T & Gilchrist I (in press). Increasing compliance with low tidal volume ventilation in the ICU with two nudge-based interventions: Evaluation through intervention time-series analyses. *BMJ Open*.

Teasdale JE, Newby AC, Timpson NJ, Munafo M & White SJ (2016). Cigarette smoke but not electronic cigarette aerosol activates a stress response in human coronary artery endothelial cells in culture. *Drug and Alcohol Dependence*. 163, pp256-260

Maxwell DJ, Partridge JC, Roberts NW, Boonham N & Foster GD (2016). The Effects of Plant Virus Infection on Polarization Reflection from Leaves. *PLoS ONE*. 11(4), e0152836



Gunnell D, Kaspersen S, Pape K, Ose S & Bjorngaard JH (in press). Unemployment and initiation of psychotropic medication: a case-crossover study of 2,348,552 Norwegian employees. *Occupational and Environmental Medicine*.

Farrell SA, Oberauer K, Greaves MH, Pasiiecznik KS, Lewandowsky S & Jarrold CR (2016). A test of interference versus decay in working memory: Varying distraction within lists in a complex span task. *Journal of Memory and Language*. 90, pp66-87

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