

# Bristol Neuroscience Newsletter

March-April 2016



## Bristol Neuroscience: Future Directions

With the arrival of a new VC and PVC for Health, Bristol Neuroscience (BN) is taking a proactive approach to reviewing its strategy. In response to feedback from the Bio-medical Review we are looking to focus our priorities over the coming 2-5 years.

Over the course of a few weeks a sub-group comprising [Richard Apps](#), [Iain Gilchrist](#), [Matt Jones](#), [Bridget Lumb](#), [Hans Reul](#) and [Neil Scolding](#) set up a series of meetings and with help from [EBI](#), conducted a survey of PIs across BN. This aimed to establish what these strategic priorities should be and served as the basis for drafting a brief document outlining BN's immediate and future priorities and shape, which was submitted to the PVC Health, John Iredale.

The majority of our research is fundamental in nature, but has implications for a wide range of brain disorders including neurodegenerative diseases, psychiatric disorders, multiple sclerosis, stress and pain. Five areas of particular strength cut across University research theme boundaries, reflecting the inherently interdisciplinary nature of modern neuroscience:

- ⇒ **Autonomic neuroscience**- cardiorespiratory
- ⇒ **Sensorimotor systems**- reflex and voluntary motor control; movement disorders and biomimetic robotics
- ⇒ **Stress**- glucocorticoid function, mood, cognition and chronic pain
- ⇒ **Synaptic and network plasticity**- molecular mechanisms, learning and memory
- ⇒ **Vision**- animal, human and artificial systems

A unifying USP is our ability to drive an integrated, multidisciplinary approach, taking discoveries at the cellular level to *in vivo* recording in animals and humans to study Brain health and the neural basis of behaviour.

### Key features of BN include :

- **Clinical**: South West Dementia Brain Bank; Bristol Brain Centre; Functional neurosurgery; MS & regenerative neurology; Health Integration Teams in Dementia, Movement Disorders and Pain.
- **Methodological**: Whole animal (systems) neurophysiology; Small and large animal imaging (TBRC) including longitudinal investigations and human studies (CRICBristol); Wellcome Trust human movement labs; Computational

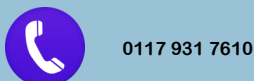
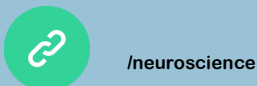
and theoretical neuroscience; epigenetic and genomic technologies (e.g. ALSPAC)

- **Training**: Early Career Researcher Day; Wellcome Trust PhD Programme in Neural Dynamics; MScs in Molecular Neuroscience, Clinical and Theoretical Neuropsychology, highly popular BSc programmes in Neuroscience and Psychology (including a year in industry); extremely competitive neurosurgical and neurology higher specialist training programmes
- **Societal**: Bristol Neuroscience Festival (our 10th anniversary celebration in 2013 was the largest outreach event the UoB has ever hosted, attracting over 3000 members of the public including 600 school children). BN is organising its second festival this March.

We aim for Bristol to be amongst the top five UK neuroscience research institutions by 2020. We believe this realistic ambition can be achieved by a combination of relatively modest geographical and organisational re-arrangement, and highly targeted investment and strategic recruitment.

Watch this space for future updates on the process!

[The BN Steering Group](#)



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Sally Lowell, Edinburgh

## Surgical Trials Showcase 2016

**18 March 2016**  
9.00 - 17.00

**M-Shed**



Matteo Carandini, UCL



Fernando Cervero, McGill

# Events

## Brain Awareness Week 2016

14 - 20 March 2016

## Too many choices? Variability and unpredictability during differentiation of pluripotent cells

15 March 2016, 13.00. Sally Lowell (MRC Centre for Regenerative Medicine, Edinburgh), C42 Biomedical Sciences Building

## South West Public Health Scientific Conference 2016

16 March 2016, 9.30. Mercure Bristol Holland House Hotel and Spa, Redcliff Hill

## Brigstow Afloat

16 March 2016, 17.00-20.00. Watershed/Floating Harbour

## Bristol Neuroscience Festival

18 - 19 March 2016. Wills Memorial Building

## Surgical Trials Showcase 2016

18 March 2016, 9.00-17.00. M-Shed

## Centre for Health Sciences Education Launch and Workshop

24 March 2016, 9.00 - 3.00. Judith Squires (UoB) Lecture Theatre 1 & 2, Southwell Street

## Positron Emission Tomography within the GW4 Alliance

8 April 2016, 13.00. Chris Marshall (Director, Wales Research and Diagnostic PET Imaging Centre), Level 7, Queen's Building, BRI

## The cerebellum- the amazing 'little brain'

11 April 2016, 13.00. Richard Apps (UoB), E29 Biomedical Sciences Building

## Mental Files Theory of Mind

13 April 2016, 15.00. Josef Perner (Universität Salzburg), Physics Building, Frank Lecture Theatre

## From vision to navigation in mouse cortex

18 April 2016, 13.00. Matteo Carandini (UCL), E29 Biomedical Sciences Building

## Integrating Hebbian and homeostatic plasticity

19 - 20 April 2016. The Royal Society, 6-9 Carlton House Terrace, London

## Academy of Medical Sciences: poster and presentation prize event for ECRs

22 April 2016, 14.00 - 17.00. University of Bath

## "Introduction to the Media" event

25 April 2016, 12.30 - 16.30. Wellcome Collection, London

## A core brain system in assembly of cognitive episodes

27 April 2016, 15.00. John Duncan (Cambridge), 12a Priory Road, 2D1 Lecture Theatre

## Pain hypersensitivity and CNS excitability: mind the gap

9 May 2016, 13.00. Fernando Cervero (McGill), E29 Biomedical Sciences Building

## 'Research without Borders', an exhibition of postgraduate research excellence

9 May 2016, 14.30 - 16.00. At-Bristol Science Centre

## Computer assisted therapy for auditory hallucinations: the AVATAR clinical trial

# Bristol's Festival of Neuroscience

Part of

**BRAIN AWARENESS WEEK**

**Public exhibition and talks at the  
Wills Memorial Building**

**University of Bristol**

*Queen's Road BS8 1RJ*

**18<sup>th</sup> – 19<sup>th</sup> March 2016**

There will be interactive exhibitions and hands-on activities for all ages.

'Brilliant brains show' with At-Bristol.

Opportunities to meet scientists and discuss their work.

'Best of Bristol Neuroscience' lectures  
School Brain Art competition  
and much more....

**Public Lecture by Prof Bruce Hood**

**"The Domesticated Brain: How the Changing  
Social Environment Turned Us into Children"**

**Victoria Rooms**

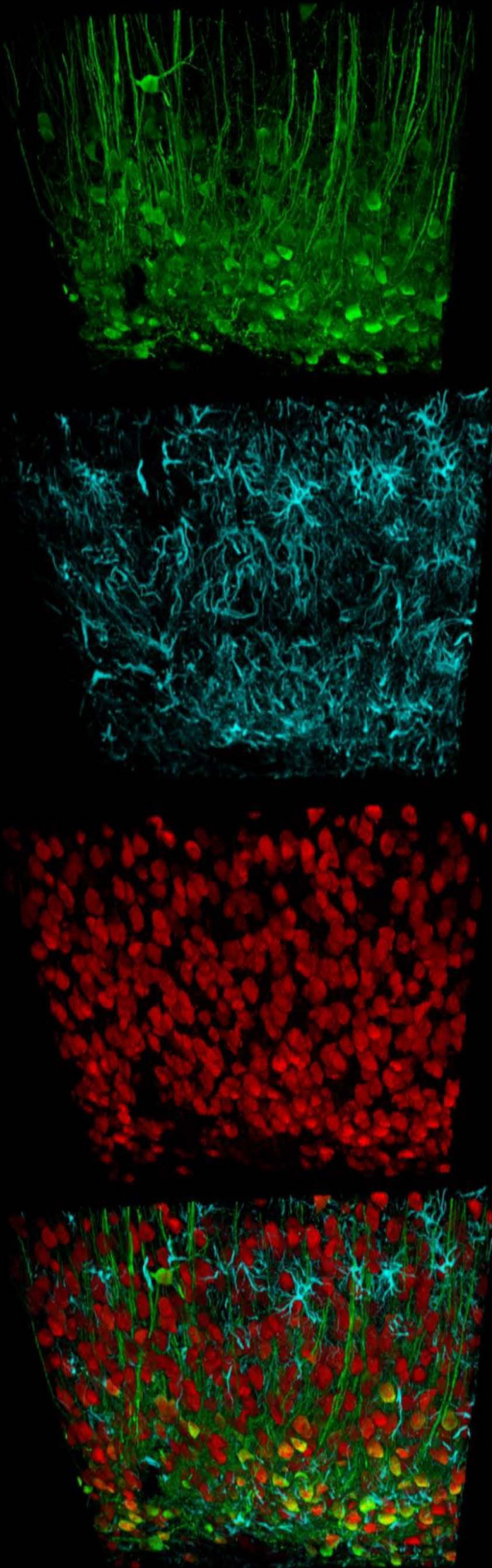
*Queen's Road, Queens Road*

*Bristol BS8 1SA*

**18<sup>th</sup> March 2016, 18:30-20:00**

For more information: [www.bristol.ac.uk/neuroscience/bnf](http://www.bristol.ac.uk/neuroscience/bnf)

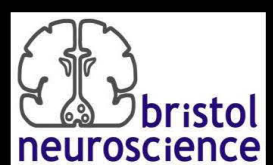
For enquires email: [bnf-2016@bristol.ac.uk](mailto:bnf-2016@bristol.ac.uk)



'Brain mesh' – images of different types of stained cells in the cortex



University of  
**BRISTOL**





24 May 2016, 12.30. Tom K J Craig MBBS PhD FRCPsych (King's College), OS6 Oakfield House

**Human Pain Channelopathies**

24 May 2016, 16.00. David Bennett (Oxford), Theatre 2, University Hospitals Bristol Education Centre, Upper Maudlin Street, BS2 8AE

**Synaptic Function and Dysfunction in Brain Diseases**

1 - 4 June 2016. Coimbra, Portugal

**Focus on Early Diagnosis of Dementia by Magnetic Resonance**

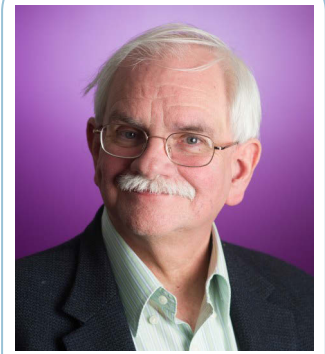
9 - 10 June 2016. Roy Jones (Bath), Merchant Venture Building

**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, Glasgow

**9th UK-Korea Neuroscience Symposium**

1-2 September 2016. Seoul, Korea



Tom K J Craig, King's



Roy Jones, Bath

# News

## The Sleeping Newborn Brain

Newborn children spend much of their lives sleeping. The brain's activity at this time helps control its development. An [Elizabeth Blackwell Institute for Health Research Catalyst Fund](#) was awarded to Dr [Mike Ashby](#) and colleagues Dr [Jade Thai](#), Dr [Karen Luyt](#) and Dr [Adam Smith-Collins](#) in order to understand the link between sleep and healthy development of the newborn brain.

The team are particularly intrigued by the predisposal of abnormal brain development in premature babies which can cause cognitive and behavioural difficulties later in life. Their research is addressing the question of whether brain activity during sleep might be affected by premature birth, and if this could be a factor in shaping how the brain grows. By assessing brain activity in newborn children and investigating

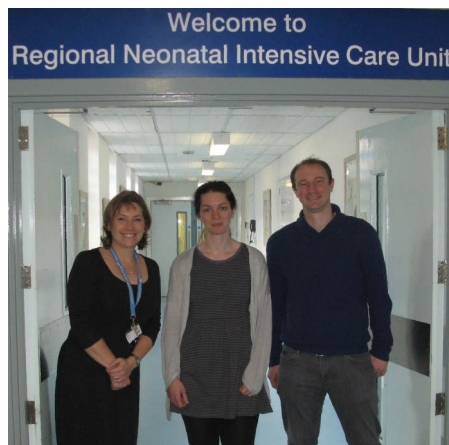
the signals that underlie brain activity during sleep, the group hopes to generate new predictors of brain development and offer insight into the idea of using sleep to restore healthy brain growth.

The award enabled the team to study sleeping brains of twenty prematurely born infants using functional MRI, during which time they also collected other data (such as high density EEG and ECG recordings) with the aim of identifying ECG-based markers of sleep state that could inform analysis of resting state connectivity from fMRI data. Analysis is on-going in collaboration with Dr [Alin Achim](#), an expert in pattern recognition techniques.

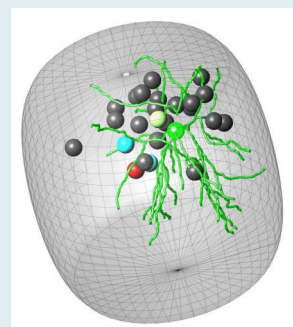
The research group has secured additional resources during and for con-

tinuation of this work, including a fully-funded MRC-DTG PhD studentship, a Wellcome Trust Neural Dynamics PhD rotation student and an MSc in Biomedical Engineering student.

*I-r: Karen Luyt, PhD student Christine Cross & Mike Ashby outside the Neonatal Intensive Care Unit at St Michael's Hospital*



*The pilot data collected during this EBI-funded project has provided the basis for further applications to investigate neonatal sleep mechanisms*



An example of a connectivity map generated using 2-photon stimulation and patch clamp electrophysiology to detect and measure synaptic connections  
© Mike Ashby



Dr Fiona Hayes

## Research for Health Challenge

The [Elizabeth Blackwell Institute for Health Research](#) has introduced a [Research for Health Challenge](#) scheme to encourage healthcare practitioners and UoB researchers to work together to develop innovative thinking around clinical problems. This a challenge-led scheme where we consult with healthcare workers, managers and commissioners

to collect information about problems they encounter in their practice that could potentially be solved via innovative research at University of Bristol.

### Challenge

[Fiona Hayes](#) (GP, Student Union)

*Is there any direct correlation between anxiety disorders in young people and*

*time spent using screen technology?*

### Solution

[Suzanne Gage](#)

(Experimental Psychology) & [Rosie Cornish](#) (Social & Community Medicine)

*Assessing the association between screen time and anxiety in UK adolescents: a prospective longitudinal study using the ALSPAC cohort*

## Recent Appointments

- Dr [Kathreena M Kurian](#) (pictured left) BSc, MD, MBBS, FRCPath(Neuro) Consultant Neuropathologist at Southmead, has recently been appointed an Honorary Reader in Brain Tumour

Research within the School of Clinical Sciences

- Dr [Thelma Lovick](#) has been appointed as an Editorial Board member for [Frontiers in Neuroscience: Autonomic Neuro-](#)

[science](#).

- Dr [Jack Mellor](#) has been appointed to the [Medical Research Council's Neuroscience and Mental Health Board](#).



## Recent Awards

Dr [Thelma Lovick](#) has been awarded a Research Council [EPSRC-NIHR Healthcare Technology Cooperative partnership award](#) via the IMPRESS (Incontinence Management and Prevention through Engineering and Sciences) network's Proof of Concept Competition. Seed funding of

£3,000 was received to conduct a six month study entitled *Pelvic nerve stimulation for urge incontinence*.

Professor [Julian Paton](#) received a gift award from Afferent Pharmaceuticals, California, USA, for £181,671 for use in pre-clinical studies.

Dr [Thelma Lovick](#) organised a Brazil/UK postgraduate student/early career investigator workshop, held in Ribeirao-Preto, Brazil entitled "Understanding the Female Brain". This was supported with funding obtained from RCUK/CONFAP.



Dr Thelma Lovick

## Update on Recent News

An item in the Nov/Dec '15 issue highlighted work on protein IR25a, which has a key role in entraining the brains of fruit flies to react to small changes in temperature. It has been

pointed out that Dr Edgar Buhl did the electrophysiology work on this project and that, as with all research projects, outcomes are very much a team effort.

Ref: Chen C, [Buhl E](#), Xu M et al. (2015). [Drosophila Ionotropic Receptor 25a mediates circadian clock resetting by temperature](#). *Nature*. Published online 18 November 2015.



Dr Edgar Buhl

## Cognitive Behavioural Therapy for Depression

The use of antidepressants, which many people don't respond to, can be enhanced by Cognitive Behavioural Therapy (CBT), a talking therapy which helps people with depression change the way they think in order to improve how they feel and change what they do; it teaches skills to help patients better manage their mood. It is known that CBT is effective in reducing depressive symptoms and improving quality

of life. This study showed when CBT was given, in addition to usual care that included antidepressants, it was effective in reducing depressive symptoms and improving quality of life over the long term for patients whose depression had not responded to medication. Over the course of 46 months, 43% in receipt of CBT had improved, reporting a 50% reduction in symptoms, compared with 27% who continued with their usual care alone. They

also found this type of 'high intensity' CBT was cost effective.

Wiles NJ *et al.* (2016). Long-term effectiveness and cost-effectiveness of cognitive behavioural therapy as an adjunct to pharmacotherapy for treatment-resistant depression in primary care: follow-up of the CoBaT randomised controlled trial. *The Lancet Psychiatry*. 3(2), pp137-144



## Collaborative Doctoral Training Programme

Known as the *GW4 BioMed MRC Doctoral Training Partnership*, the new £4.6M programme will train PG research students in three main areas: neuroscience & mental health; infection, immunity & repair; and population health. Funded by the MRC it will fund more than 50 postgraduate

research students across four institutions over the next three years.

There will be a strong emphasis on addressing national priorities in areas such as quantitative and interdisciplinary skills and *in vivo* methodology. The training programme will have three

strands in its curriculum: research skills; professional and career development skills; & opportunities to broaden horizons. Students will be encouraged to undertake placements, research visits, public engagement internships, and will have the opportunity for clinical experience.



Gerda Gasiunaite— BPS poster

## Clinical Research and Imaging Centre

The Clinical Research and Imaging Centre (CRIC) has a new online facility. The page displays a comprehensive [list of publications](#) that have been drawn from research that has taken place

at CRIC Bristol, many of which link to the online article.

CRIC is a joint venture between the [University Hospitals Bristol NHS Foundation](#)

[Trust](#) and the University of Bristol. Facilities include a Siemens 3Tesla Magnetom Skyra MRI scanner, a two-room sleep laboratory and four clinical investigation suites alongside a laborato-

## British Pharmacological Society Poster Prize

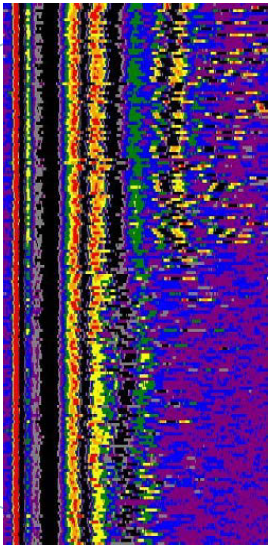
PhD student Gerda Gasiunaite (Phys/Pharm/Neuro) was awarded a [British Pharmacological Society \(BPS\) Poster Prize](#) at [Pharmacology 2015](#), the BPS's conference, held in London in Dec

'15. More than 1,000 scientists from around the world attend this annual meeting each year. Her poster, entitled *Galanin receptor dimerisation investigated by the BRET technique*, presented

data showing the cellular interaction between subtypes of galanin receptor, which are important in pain processing. Gerda's supervisors are Profs [David Wynick](#) and [Eamonn Kelly](#).







## Wellcome Trust PhD Studentship Renewal

Thanks to a Wellcome Trust renewal, 3 4-year programmes will run again:

- *Molecular, Genetic and Lifecourse Epidemiology*, led by George Davey Smith
- *Dynamic Molecular Cell Biology*, led by Pete Culen, seeks to train the next generation of cell

biologists to examine the dynamics of living cells, tissues and organisms, and their role in human health and disease, using outstanding imaging facilities

- *Neural Dynamics*, led by Richard Apps, aims to train a new generation of neuroscientists who are able to combine

experimental and mathematical/computational approaches to study the dynamics of neural systems.

These programmes will help train a cohort of students across a range of biomedical science disciplines.

## Studying Chronic Pain Related to Syringomyelia

Syringomyelia is a progressive inherited neurological disease of the neck spinal cord in Cavalier King Charles Spaniels (CKCS), which may cause neck pain and affects around 70 per cent of CKCS over six years old. Researchers at the Vet School and the Royal Veterinary College aim to find a pain-free method of detecting neck pain of neurological origin in the dogs. Funded by [Dogs Trust](#), the

study hopes to improve the welfare of CKCS by enabling vets to more easily recognise when dogs are suffering from chronic pain related to syringomyelia. The study involves owner-completed questionnaires and assessment of the dog's neck skin sensitivity with a pain-free electronic pressure device while monitoring the dog's behavioural response. [Heather Williams](#), the vet-

erinary surgeon who is co-running the study alongside Drs Nicolas Granger and [Jo Murrell](#), is keen to reduce the numbers of dogs affected by this condition, and improve treatments for affected dogs. Early detection of neuropathic pain in dogs could prompt earlier investigation and treatment, and be used as a tool to monitor the progress in dogs already being treated.



## Bristol Brain Centre Opens at Southmead

The new Bristol Brain Centre, which brings together expertise from North Bristol NHS Trust and UoB, opened at Southmead Hospital on 25 November 2015. The centre is the first of its kind in the country to bring together research teams in the areas of multiple sclerosis, dementia and movement disorders, such as Parkinson's. It is located on the top floor of Elgar House, which has been completely

refurbished thanks to £1.5million of funding from Southmead Hospital Charity, the University of Bristol and the dementia charity BRACE. Based at the centre are:

- **Bristol & Avon MS Service:** A dedicated service for people with multiple sclerosis
- **MOVE-hit@NBT:** A health integration team for Parkinson's and other movement disorders, which aims to fully inte-

grate all aspects of clinical care, translational research and education

- **The ReMemBr Group:** working to improve the lives of people with dementia through research and clinical services
- **BRACE:** An independent charity that raises funds for scientific research into dementia and supports researchers in South West England and South Wales.



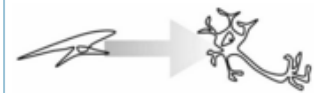
## Human Cell Transformation Breakthrough

Pluripotent stem cells can be used to treat many different medical conditions and diseases. In the 9 years since the first artificial cells were created, scientists have only been able to discover a handful of further conversions for human cells. A computational algorithm called *Mogrify* was developed over 5 years by former PhD student Dr Owen Rackham and Prof Julian Gough, using data collected as a part

of the FANTOM international consortium. The algorithm can be used to predict the cellular factors for cell conversions, thus bypassing the need to create stem cells. The system was tested on two new human cell conversions, and succeeded first time for both. The speed with which this was achieved suggests *Mogrify* will enable the creation of a great number of human cell types in the lab. The ability to produce cell types will lead directly to

tissue therapies of all kinds. This represents a significant breakthrough in regenerative medicine, and paves the way for life-changing medical advances within the next few years.

Rackham OJL et al. (2016). [A predictive computational framework for direct reprogramming between human cell types](#). *Nature Genetics*. 48, pp331–335.



### Dermal Fibroblast to Neuron

*Mogrify* provides a landscape of cell types with the associated transcription factors to navigate from one part of the landscape to another

## Ants' Responses to Social Interactions

PhD student Edmund Hunt and colleagues tracked the movement patterns of lone rock ants exploring an arena outside the nest, both when the arena was clean and when it contained chemical information (e.g. pheromones) left by previous nest-mates. They discovered the relationship between the duration and average speed of an ant's movements, and also established that movements

mostly fluctuated around a constant average speed. The average speed increased in anticipation of a longer movement, suggesting that movement durations were somehow determined in advance. This was the case both when chemical information was absent and when it was present, suggesting ants probably only fully respond to social information in between movements. Such intermittent responsiv-

ity to aspects of the social environment during movement may have implications for the way we understand other complex adaptive social systems, including human ones.

Hunt ER et al. (2016). [Ants determine their next move at rest: motor planning and causality in complex systems](#). *Royal Society Open Science*. Published online 13 January 2016.



A rock ant  
(*Temnothorax albipennis*)  
© Edmund Hunt

## Drugs and Memory Encoding

Researchers have uncovered a fundamental mechanism that explains the interaction between brain state and the neural triggers responsible for learning, which could lead to new ways of boosting cognitive function to counteract the effects of diseases such as Alzheimer's, as well as enhancing memory in healthy people. Study lead Dr Jack Mellor, in collaboration with Eli Lilly & Co., iden-

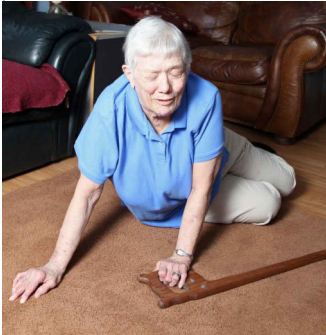
tified fundamental processes occurring at the connections between nerve cells involving regulation of calcium ions acetylcholine. This neurotransmitter is released in the brain during learning and is critical for the acquisition of new memories. Currently, the only effective treatment for the symptoms of cognitive or memory impairment is through the use of drugs

that boost the amount of acetylcholine release. These studies suggest certain drugs that act on specific acetylcholine receptors may be highly attractive as potential treatments for dementia and other cognitive disorders; mimicking the effect of acetylcholine at specific receptors facilitates changes in the strength of connections between nerve cells.

Tigaret CM et al. (2016). [Coordinated activation of distinct Ca<sup>2+</sup> sources and metabotropic glutamate receptors encodes Hebbian synaptic plasticity](#). *Nature Communications*. 7, #10289.

Dennis SH et al. (2016). [Activation of Muscarinic M1 Acetylcholine Receptors Induces Long-Term Potentiation in the Hippocampus](#). *Cerebral Cortex*. 26(1), pp414-26.





## Dementia Drug Improves Parkinson's Symptoms

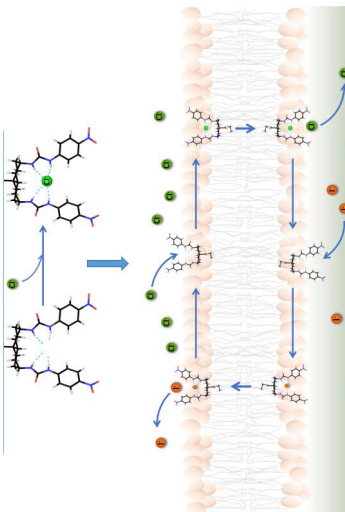
Parkinson's affects 127,000 people in the UK and approximately 7M worldwide. 70% of people with Parkinson's will fall at least once a year, with over a third experiencing falls repeatedly, resulting in fractures, broken bones & hospital admissions. PI Dr [Emily Henderson](#) confirmed that with the degeneration of dopamine-

producing nerve cells, people with Parkinson's often have issues with unsteadiness when walking. As part of the condition they also have lower levels of acetylcholine which helps concentration, making it extremely difficult to pay attention to walking. Rivastigmine works to treat dementia by preventing the breakdown of acetyl-

choline, however this study shows that it can also improve regularity of walking, speed, and balance.

Henderson EJ *et al.* (2016). [Rivastigmine for gait stability in patients with Parkinson's disease \(ReSPonD\): a randomised, double-blind, placebo-controlled, phase 2 trial.](#) *The Lancet Neurology.* 15(3), pp249-258.

## New Therapy for Anion-Transport Diseases

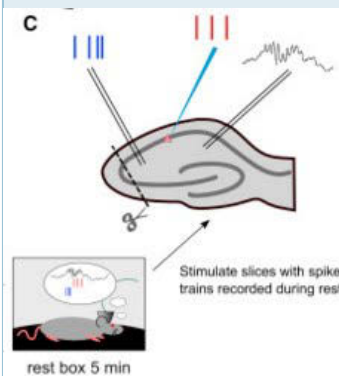


First steps towards new treatments for inherited diseases such as cystic fibrosis, one form of Bartter's syndrome and two forms of myotonia which are linked to defective movement of anions, such as chloride, across cell membranes, have been taken. These disorders are caused by the loss of chloride channels which

allow the ions to stream across cell membranes. Drug-like molecules that transport anions across cell membranes are almost unknown in nature, and attempts to make them in the laboratory have previously met with limited success. To develop anionophores, Prof [Tony Davis](#), Dr [David Sheppard](#) and colleagues synthesised mole-

cules with two distinct parts: one is designed to bind lipids, the other to form a cage-like structure to hold a chloride ion and protect it from lipids. They work by binding a chloride ion on one side of the cell membrane, shielding the ion from lipids as it is shuttled across the cell membrane, and then releasing it on the other side.

The crystal structure in the absence and presence of a bound Cl ion and the anionophore's mechanism. Cl ions on one side of the cell membrane are exchanged for iodide ions as the anionophore shuttles anions across the cell membrane.



Spike patterns from CA1 and CA3 cells as well as SWRs detected *post hoc* were used as the basis for slice stimulation protocols.

## Sleeping Brain Activity Consolidates Memory

Research at the [Centre for Synaptic Plasticity](#) led by Dr [Jack Mellor](#) provides further evidence for the benefits of a good night's sleep. Bad nights of sleep lead to impaired mental function in both healthy people and those affected by schizophrenia or Alzheimer's disease. Patterns of brain activity that occur during the day are replayed at fast-forward speed during sleep. This replayed activity happens in the hippocampus, where the microscopic connec-

tions between nerve cells that are active are strengthened- a process deemed critical for consolidating memories. Therefore, by selecting which daytime activity patterns are replayed, sleep can sort and retain important information. It seems that the successful replay of brain activity during sleep is dependent on the emotional state of the person when they are learning. This has major implications for how we teach and enable people to learn effec-

tively.

Sadowski JHLP *et al.* (2016). [Sharp-Wave Ripples Orchestrate the Induction of Synaptic Plasticity during Reactivation of Place Cell Firing Patterns in the Hippocampus.](#) *Cell reports.* 14(8), pp1916-29

Atherton LA *et al.* (2015). [Memory trace replay: the shaping of memory consolidation by neuromodulation.](#) *Trends in Neuroscience.* 38(9), pp560-570

## Alzheimer's Disease Drug Trial

RADAR (Reducing pathology in Alzheimer's Disease through Angiotensin targeting) is investigating if a drug normally used to treat hypertension has additional properties that could slow down the progression of Alzheimer's disease (AD) in people with and without hypertension. This multi-centre clinical trial will explore if losartan, a blood pressure drug that first became available in 1995, can complement current treatments for AD. Re-

searchers believe losartan can slow down the progression of AD by improving brain blood flow and altering chemical pathways that cause brain cell damage, brain shrinkage and memory problems in AD.

Lead by Professor [Pat Kehoe](#) with colleagues from Cambridge, Queen's University Belfast, UCL and North Bristol NHS Trust, the study is a double-blinded placebo-controlled randomised trial which is looking to recruit

approximately 230 participants, together with a similar number of carers, from across the UK. People with AD who have high or normal blood pressure can take part if they meet certain eligibility criteria and RADAR will use brain imaging to measure whether losartan reduces the rate of brain shrinkage that is known to occur in AD. It will also be using questionnaires on memory performance and quality of life – important indicators of whether the drug might be helpful.



## Awards to Support Translational Research

A total of £650,000 has been awarded to UoB from the MRC to support translational research. The award, which will be managed by the [Elizabeth Blackwell Institute for Health Research](#), will provide flexible funding for early stage translational projects, to enable the development of academic-industry collaborations, and allow impact development. Two schemes are currently open for the receipt of out-

line proposals:

**TRACK Awards** will fund initial pilot studies to demonstrate the concept of a proposed solution to a health, clinical or product development need. They will support health related research projects which have translational/commercial potential but need to undertake an additional, specific piece of work before seeking proof of concept.

### **Confidence in Concept**

**Awards** will fund larger proof of concept studies which provide robust evidence to funders of the feasibility of a proposed solution to a health, clinical or product development need. They are intended to accelerate the translation of discovery research into new therapies, diagnostics and medical devices by supporting preliminary work or feasibility studies.



## Preventing Self-harm / Suicide in Adolescents

Self-harm is relatively common among adolescents. It causes distress to the young people concerned, as well as to their family and friends, and is associated with poor mental health and future substance abuse. Many young people also experience suicidal thoughts. Dr [Becky Mars](#) was awarded an [Elizabeth Blackwell Institute Early Career Fellowship](#) which allowed her shape a

proposal for a post-doctoral fellowship with NIHR for an e-health intervention for young people at risk of self-harm. It would provide information, advice and support to vulnerable young people online or via a smartphone app, digital solutions having the potential to engage a wide audience of young people, especially those who might be reluctant to seek help

through more traditional channels. A second, successful fellowship proposal submitted to the American Foundation for Suicide Prevention aims to use existing data from the ALSPAC birth cohort to examine why some young people act on suicidal thoughts whereas others do not, and will test hypotheses relating to recently developed theories of suicidal behaviour.



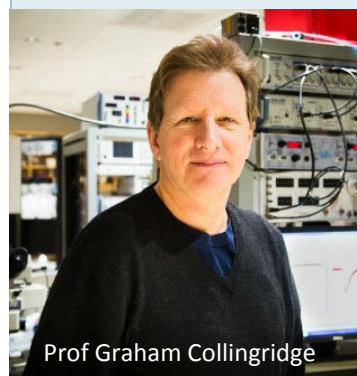
Dr Becky Mars, SSCM



Whitney HM *et al.* (2016). Flower Iridescence Increases Object Detection in the Insect Visual System without Compromising Object Identity. *Current Biology*. 26, pp.1-7



Commonly known as the 'mint-sauce worm' due to its bright-green colour, *S. roscoffensis* is found in shallow water on sheltered sand beaches at certain sites on the Atlantic



Prof Graham Collingridge

## Flowers Avoid Confusing Bees

When looking for nectar, bees need to be able to spot a flower from a distance and recognise which coloured flowers contain food. Researchers including Dr [Heather Whitney](#) and colleagues at Cambridge found that iridescence makes flower petals more obvious to bees, but too much iridescence con-

fuses the ability to distinguish the colours that help bees focus on the most food-filled flowers. The study found that flowers use a more subtle iridescence which creates an ideal signal for bees which doesn't interfere with their capability to distinguish subtle colour variations, causing them to make mis-

takes in their flower choices. This colour recognition is vital for both the bees and the plants, which rely on the bees to pollinate them. We tend to assume that colour is used for camouflage or sexual signalling, but animals and plants have a lot more to say to the world and to each other than we realise.

## Social Sunbathing in the Mint-sauce Worm

Professor [Nigel Franks](#) and colleagues made direct comparisons between videos of real worms and computer simulations of virtual worms with different patterns of behaviour. This showed that individual worms (*Symsagittifera roscoffensis*) interact with one another to co-ordinate their movements. Adult worms survive entirely on the nutrients produced by photosynthesising symbi-

otic algae living in their bodies, hence their renown as the 'plant-animal'. They sunbathe on beaches when the tide is out and bury themselves in the sand as the sea returns. The study shows how with increasing density they form small flotillas, and then circular mills. The authors hypothesise that these interactions eventually lead to mat-like biofilms observed on sandy beaches. These social

structures may help the worms to achieve safety in numbers and the right conditions for their unusual way of life, in effect becoming a super-organismic seaweed in a habitat where macro-algal seaweeds cannot anchor themselves. They appear to be an ideal model for understanding how individual behaviours can lead, through collective movement, to social assemblages

## The Brain Prize

Professors [Graham Collingridge](#), Tim Bliss (UCL) and Richard Morris (Edinburgh) are this year's winners of [The Brain Prize](#). Worth €1M, the prize is awarded annually by the Grete Lundbeck European Brain Research Foundation in Denmark. It recognises one or more scientists who have distinguished themselves by an outstanding contribution to neuroscience. The research focused on a brain mechanism, Long-Term Potentiation (LTP), which underpins the

life-long plasticity of the brain. Their discoveries have revolutionised our understanding of how memories are formed, retained and lost. They have independently and collectively shown how synapses between brain cells in the hippocampus can be strengthened through repeated stimulation. The work has revealed some of the basic mechanisms behind the phenomenon and has shown that LTP is the basis for our ability to learn and remem-

ber. The strength of the connections can change in response to experience. LTP exemplifies this inherent plasticity, which underlies the brain's remarkable capacity to reorganise itself after damage (e.g. stroke, blindness). Deficits and disorders in the capacity to alter synaptic strength are involved in many brain-related conditions including autism, schizophrenia, stress, anxiety, depression, chronic pain, epilepsy and addiction.



# 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.

## [TRACK & Confidence in Concept Scheme \(CiC\)](#)

Provide funding to support health related translational projects which are at the stage of concept development (TRACK) and proof of concept (CiC). Applicants successful at outline stage can submit a full application.

Deadline for outline proposals is 15 March 2016 at 9:00



# FUNDING OPPORTUNITIES

## **ERA-Net Neuron II**

[European research projects on external insults on the nervous system](#)

Closing Date: 14-Mar-16

Award amount: unspecified

Aim to facilitate multinational, collaborative research projects that will address important questions relating to external insults to the central nervous system. The call will accept proposals ranging from understanding basic mechanisms of disease through proof-of-concept clinical studies in humans to neurorehabilitation. Research proposals should cover at least one of the following areas:

- fundamental research investigating consequences of external insults to the central nervous system on a biological and functional level
- clinical research, including the exploitation of novel or existing clinical data sets, to develop new strategies for diagnosis, therapy, and technology-driven neurorehabilitation

## **International Balzan Prize Foundation**

[Balzan prizes](#)

Closing Date: 15-Mar-16

Award amount: CHF750,000

**\*Research Professional**

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](#).

**\*Research Professional**

Deadlines Calendar							<< April 2016 >>
Closing dates for all funding opportunities matching your query							
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Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
28	29	30	31	1	2	3	
				Postdoctoral study grants -			
4	5	6	7	8	9	10	
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	General call for research p		Health services and deliver	Faculty research awards -			
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					Conference committee awd	Colvin prize - Brain & Beha	

Nominations are invited which recognise individual achievements in the broad areas of literature, the moral sciences and the arts, medicine, and the physical, mathematical and natural sciences. The focus areas this year include ***molecular and cellular neuroscience, including neurodegenerative and developmental aspects***. Half of the award amount should be used for research projects, preferably involving young scholars or scientists.

**International Society for Neurochemistry**

[Travel awards](#)

Closing Date: 15-Mar-16

Award amount: US\$1,650

Allow society members to attend ISN meetings to present an abstract. Applicants must be the first and presenting authors of a submitted abstract, who are members, or are applying for membership alongside their travel award application. Priority is given to younger investigators who are within eight years of their first doctoral degree, research students and persons who have not previously received support and do not hold a permanent position.

**British Science Association**

[Media Fellowships](#)



Closing date: 18-Mar-16      Award amount: unspecified

Provide a unique opportunity for practising scientists, clinicians and engineers to spend two to six weeks working at the heart of a media outlet such as the Guardian, BBC Breakfast or the Londonist.

To be eligible you must be:

- a practising scientist, social scientist, clinician or engineer and have a minimum of 2 years' experience in your field following your highest degree. PhD students are eligible although we don't recommend it due to the heavy workload.
- employed, and based, part or full time in the UK or Ireland
- work at any level in an academic or research institution, industry, civil service or any other similar organisation
- have your employers/funders consent to be released on full pay for the period of the Fellowships. Annual leave may be used for part of the placement.

### **Alzheimer's Society**

#### [Clinician and healthcare professionals training fellowships](#)

Closing Date: 18-Mar-16      Award amount: £225,000

Enable practising professionals working in dementia health and care services to undertake study towards a higher research degree, usually a PhD, and to combine research and practice. Applicants should be working in dementia clinical and health services.

### **Alzheimer's Society**

#### [Junior fellowships](#)

Closing Date: 18-Mar-16      Award amount: £225,000

Support postdoctoral researchers who have shown exceptional promise at the start of their research career. Applicants must have submitted their PhD at the point of application or be within four years since the date of PhD viva.

### **Alzheimer's Society**

#### [PhD studentships](#)

Closing Date: 18-Mar-16      Award amount: £85,000

Fund new PhD studentships in the cause, cure, care or prevention of dementia. Students with at least a 2.1 degree are welcome to apply. Studentships must not already have commenced.

### **Alzheimer's Society**

#### [Project grants](#)

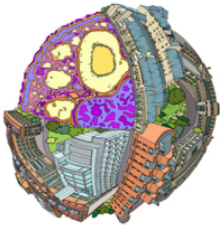
Closing Date: 18-Mar-16      Award amount: £400,000

Support research into the cause, cure, care or prevention of any form of dementia. Principal investigators should have a contract of employment with the host university that exceeds the planned finish date of the research by at least 12 months.

### **Alzheimer's Society**



**BrisSynBio**  
 biomolecules to biosystems  
 from understanding to design



Medical  
 Research  
 Council  
**MRC**

### Senior fellowships

Closing Date: 18-Mar-16

Award amount: £400,000

Support postdoctoral researchers or other successful researchers who wish to build on a number of successful years of dementia research, and who demonstrate ambition and potential to be independent investigators. Applicants must be within three to 10 years of their PhD viva.

### BrisSynBio

#### Second-wave and pump priming projects

Closing date: 28-Mar-16

Award amount: £275,000

Second-wave: To build capacity in core BrisSynBio activity. Grants are intended to support a team of 2 or more PIs and three or more PDRA years. The project should be ambitious and directly aligned with BrisSynBio Strands and Themes or the Second-wave Strategy.

Pump-priming projects: To build the portfolio of BrisSynBio activity and to foster further grant applications (to all sources) to sustain BrisSynBio beyond 2019. Grants are intended to support proof-of-concept projects. Any configuration of years, PDRA's, consumables, access to equipment, travel etc will be allowed.

### Medical Research Council

#### Senior clinical fellowship

Closing Date: 06-Apr-16

Award amount: unlimited

Enables medically and other clinically qualified professionals, with an effective track record of internationally competitive independent research, to make the transition to research leadership. Applications are welcome across all areas of MRC's remit and may range from basic studies with relevance to mechanisms of disease, to translational and developmental clinical research.

MRC is also offering awards under this scheme in collaboration with the Motor Neuron Disease Association, named Lady Edith Wolfson fellowships which enable clinicians to pursue research into the pathogenesis and treatment of MND.

### Brigstow Institute

#### Seed-corn Fund

Closing date: 06-Apr-16

Award amount: typically £5k, up to £10k considered

Aim is to provide support that gives people with brilliant ideas a chance to work with others to experiment with those. Applications are invited from academics at any and every stage of their career. For new partnerships, we are keen to fund those working across disciplines, those working on co-produced research with external partners, and/or those working on ambitious co-produced, interdisciplinary research.

For existing partnerships, we look to fund those who are already working in interdisciplinary teams but wish to experiment with co-produced research with external partners,

or those working on co-produced projects who see the value of bringing in new disciplinary perspectives.

**National Institute for Health Research: Research Design Service South West**  
[Grant Applications Workshop](#)

Closing date: 11-Apr-16

Award amount: free attendance at workshop

Work with people developing grant applications for applied health research providing, in particular, methodological advice and related support. Aims are to increase the number of high-quality applications to open, national, peer-reviewed funding competitions, and run a workshop for researchers who are developing proposals with the intention of applying for a grant. The workshop covers the full range of issues inherent in developing a successful grant application (NOT methodology). The workshop will be particularly useful for people wishing to apply to NIHR streams, however, it is relevant for those applying to other funders.

**Department of Health**

[Horizon scanning research and intelligence centre](#)

Closing Date: 12-Apr-16

Award amount: £10M

Aims to designate and fund a single NIHR horizon scanning research and intelligence centre that will act as a centre of excellence in provision of advanced notice to national policymakers of key new emerging health technologies. These might require evaluation and consideration of clinical and cost impact, or modification of clinical guidance typically around two to three years prior to launch on the National Health Service. Organisations looking to apply must have a track record of world class research-based horizon scanning of value to the NHS in England and of methodological research in this area, ideally published in peer-reviewed publications.

**Department of Health**

[Health services and delivery research programme – researcher-led workstream](#)

Closing Date: 14-Apr-16

Award amount: £50,000

Supports research into the quality, effectiveness and accessibility of health services, including evaluations of how the NHS might improve delivery of services. This includes research to identify cost-effective models of specialist palliative care and evaluation of other promising service innovations to provide joined up, person centred care to those at the end of life. The workstream has a continued interest in dementia; primary care interventions; very rare diseases; long-term conditions in children; multimorbidities in older people.

**National Institutes of Health**

[Mechanistic basis of diffuse white matter disease in vascular contributions to cognitive impairment and dementia](#)

Closing Date: 19-Apr-16

Award amount: US\$500,000

Supports hypothesis-testing research which explores cellular and molecular mechanisms that underlie diffuse white matter disease of vascular origin including multifocal, small

Research Design Service  
South West



Department  
of Health

National Institute  
on Alcohol Abuse  
and Alcoholism



NIH...Turning Discovery Into Health®

and silent brain infarcts that may contribute to cognitive impairment and dementia. Funding also aims to promote research using methods that can address mechanisms of pathological events in vessels and tissue that were previously poorly accessible and poorly studied, such as periventricular white matter, basal ganglia, brainstem, deep cerebellum or subcortical white matter.

#### National Institute on Alcohol Abuse and Alcoholism

##### [Targets of low dose alcohol in the brain \(R21\)](#)

Closing Date: 21 Apr 16

Award amount: US\$275,000

Solicits applications that define molecular and cellular targets mediating alcohol effects at concentrations of 10mM and below. The aim is to advance the mechanistic understanding of alcohol-sensitive circuitry. This FOA is intended to support investigations of novel scientific ideas at the early stages of development and exploratory or feasibility studies that are high risk high reward. The studies may also include development of novel ideas that will break new ground or extend previous discoveries toward new directions. Areas of interest include:

- determining the dynamic responses or neurochemically defined neuronal activity with high temporal and spatial resolution to low doses of alcohol in real time in vivo
- defining the specific types of neurons and associated neural pathways that are most sensitive to alcohol
- investigating how changes in neural pathways and circuits orchestrate the sensitivity to low dose alcohol

#### Above and Beyond and University Hospitals Bristol

##### [Research Capability Funding](#)

Closing date: 26-Apr-16

Award amount: £20,000

Aim to promote high quality biomedical research in UH Bristol. Applications are welcomed from any medical or non-medical UH Bristol employee, or university academic (Universities of Bristol and the West of England) holding an honorary contract with UH Bristol. Funds can be used to:

- Fund Research Sessions/PAs (for medical and non-medical staff) to allow time to prepare NIHR research grant applications;
- Fund the generation of preliminary or underpinning data to support an NIHR application (pump-priming)

#### Medical Research Council

##### [Senior non-clinical fellowship – transition to leadership](#)

Closing Date: 27-Apr-16

Award amount: unlimited

Provides non-clinical researchers with a track record of excellence in their scientific field with the opportunity to transition into research leaders. Proposals from basic studies with relevance to mechanisms of disease to translational and developmental clinical research are welcome. It is not available to individuals who hold a tenured academic position. Applicants are encouraged to consider the opportunities to establish collaborative networks and for cross-sector development as the award will support a period of research overseas, at a second UK institution or within industry if appropriate. In addition, applicants should demonstrate that their skills and experience match those of the transition to leadership career stage at the time of their application.

**Above  
+ Beyond**  
For Patients. For Health. For Bristol.



**International Society for Neurochemistry**[Conference committee awards](#)

Closing Date: 30-Apr-16

Award amount: US\$20,000

Supports the organisation of small conferences on specialised neurochemical topics, and sponsors neurochemistry symposia within meetings of other scientific societies or groups. Proposed conferences or symposia should be international, preferably inter-continental, as reflected by the composition of the organising committee, the list of prospective invited speakers and the countries of origin of the expected attendees. Applicants must be members of the ISN, or apply for membership alongside their funding application.

ISN provides funds of up to US\$20,000 for a small conference, at least 60 per cent of which is to be used to facilitate the attendance of young neurochemists. Symposium funding is worth up to US\$7,000, which may be used to cover travel, registration and accommodation expenses of speakers.

**National Institute of Neurological Disorders and Stroke**[Small vessel vascular contributions to cognitive impairment and dementia biomarkers development projects \(UH2/UH3\)](#)

Closing Date: 10-May-16

Award amount: US\$3,750,000

Supports research that evaluates and further develops candidate predictive, diagnostic, target engagement and progression candidate biomarkers of small vessel cerebrovascular disease in human vascular contributions to cognitive impairment and dementia and vascular or Alzheimer's mixed dementias. Biomarkers development projects that will study biomarkers as individual projects and concurrently establish the interactive consortium and then work together as a consortium to perform collaborative cross-project multidisciplinary studies to further evaluate and develop the most promising biomarker candidates to the point of being ready for large scale multisite clinical validation studies including towards FDA qualification of small vessel VCID biomarkers for phase two and phase three clinical trials. This FOA is only for studies related to human biomarkers.

**Department of Health**[Health technology assessment programme](#) – commissioned call: 15/33

Closing Date: 19-May-16

Award amount: unlimited

Invites expressions of interest for primary research in two stages, under the commissioned funding stream of its health technology assessment programme. Proposals are sought on the topic of promising pharmacological therapy for the treatment of resistant bipolar depression. This is a joint funding opportunity with the efficacy and mechanism evaluation programme. Applicants wishing to submit studies focussed on the efficacy of interventions for the treatment of bipolar disorder or mechanistic studies added onto submission to this HTA funding opportunity should apply via the EME programme.

**Department of Health**[Health technology assessment programme](#) – commissioned calls: 16/11, 16/12

Closing Date: 19-May-16

Award amount: unlimited

Proposals for one stage evidence synthesis under the commissioned funding stream of its health technology assessment programme. Proposals are sought on treating mental

health problems associated with a history of complex traumatic events.

**Department of Health**

[Health technology assessment programme: commissioned calls](#)

Closing Date: 19-May-16

Award amount: unlimited

Expressions of interest for primary research in two stages, under the commissioned funding stream of its health technology assessment programme. Proposals are sought on the following topics:

- topiramate for posttraumatic stress disorder
- remotely delivered behavioural intervention for tics in children and adolescents with Tourette syndrome
- treatment for persistent anxiety disorder in adolescents after an inadequate response to low intensity psychological therapy

**Medical Research Council**

[Research grants - population and systems medicine](#)

Closing Date: 25-May-16

Award amount: £1M (80% FEC)

Suitable for focused research projects that may be short- or long-term in nature. In addition, they can be used to support method development and continuation of research facilities and may involve more than one research group or institution. Any UK-based researcher who can demonstrate that they will direct the proposed research and be actively engaged in carrying it through is eligible to apply. The minimum academic qualification required is a graduate degree. Less experienced researchers should apply in collaboration with a more senior colleague. Applications can include industry partners.

**Medical Research Council**

[Programme grants - population and systems medicine](#)

Closing Date: 25-May-16

Award amount: unlimited

Provide large and long-term renewable funding. A programme is defined as a coordinated and coherent group of related projects that may be developed to address an interrelated set of questions across a broad scientific area. Any UK-based researcher who can demonstrate that they will direct the proposed research and be actively engaged in carrying it through can apply. The minimum academic qualification required is a graduate degree.

**Medical Research Council**

[New investigator research grant – neurosciences and mental health](#)

Closing Date: 01-Jun-16

Award amount: unspecified

Aims to support for researchers who are capable of becoming independent PIs. Applicants are expected to combine their time with a portfolio of other activities and should hold a PhD or a master's degree. There is no preferences on years of postdoctoral experience. Applicants may request support for the following: a salary commensurate with the time attributed to the project (capped at 50% of total contracted working time); support for additional research or technical costs; consumables and equipment; travel costs; data preservation, data sharing and dissemination costs.



**National Institute of Mental Health**[Neural mechanisms of multidimensional emotional and social representation \(R01\)](#)

Closing Date: 03-Jun-16

Award amount: US\$500,000

Aims to incorporate a multidimensional perspective into studies of the neural mechanisms underlying emotional and social representations. Encourages investigators to take on the challenge of investigating how diverse multidimensional emotional and social cues are represented across integrated and temporally dynamic brain circuits. Applications that incorporate innovative approaches designed to move affective and social neuroscience beyond single region-based, modular and static models of brain function and behaviour are sought. Further, this FOA encourages research that will support strategic objectives one and two of the NIMH strategic plan for research by:

- identifying neurobiological mechanisms and precise spatio-temporal interactions across brain networks that contribute to emotional and social behaviours;
- determining the normative neurodevelopmental trajectories involved in processing multi-modal emotional and/or social cues;
- determining how disruptions in neurodevelopment or dysfunctions in neurobiological systems contribute to alterations in the emotional and/or social behaviours associated with mental illnesses.

**GW4**[Building Communities Initiator Funds and Accelerator Funds](#)

Closing date: 06-Jun-16

Award amount: unspecified

The Building Communities programme is designed to build new, high-quality GW4 research communities or help existing collaborations to build on their work and secure long term sustainable funding.

**Alzheimer's Research UK**[Clinical research fellowship](#)

Closing Date: 06-Jul-16

Award amount: £20,000

Supports clinical or basic research on Alzheimer's disease and related dementias. Prospective fellows acting as lead applicants must have secured a prospective supervisor as co-applicant, however, prospective supervisors without a nominated candidate may apply directly and are required to be a senior established investigator.

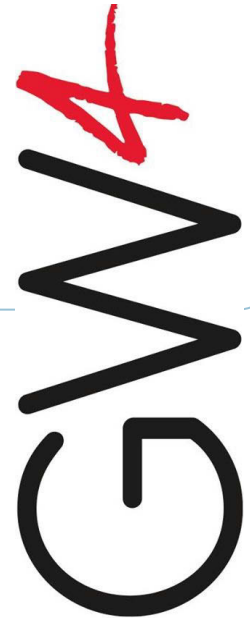
**European Academy of Neurology**[Research fellowship](#)

Closing Date: 31-Aug-16

Award amount: €2,000 per month + €500 travel

Supports young neurologists who wish to carry out neuroscientific research. Two types of grants are available:

- research training fellowship for 12 months, which leads either to the completion of a higher degree, a grant application or a peer-reviewed publication
- research experience fellowship for at least six months, which is designed for individuals who may wish to pursue a research career and might otherwise not have the opportunity to gain high-quality research experience, and from experienced




researchers and clinicians requiring training in a specific research methodology or technique not currently available in their own country.

Residents of neurology with a minimum of two years neurology training or certified clinical neurologists with up to a maximum of five years beyond their final degree of PhD, MD, or equivalent may apply. Applicants must come from an EAN member country and be affiliated to a European academic neurological department.

#### 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.

#### 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.

#### Dowager Countess Eleanor Peel Trust

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

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.

#### 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. Applicants are normally expected

THE DOWAGER COUNTESS ELEANOR PEEL TRUST





to have an existing research record, but consideration will also be given to practitioners managers, carers or others in health-related fields. Preference will be given to those who have not previously been involved in a UK-Japan collaborations, and applications from early-stage researchers are particularly welcome. Areas currently 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.

**Guarantors of Brain**

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

Closing Date: none

Award amount: unspecified

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](#)

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.

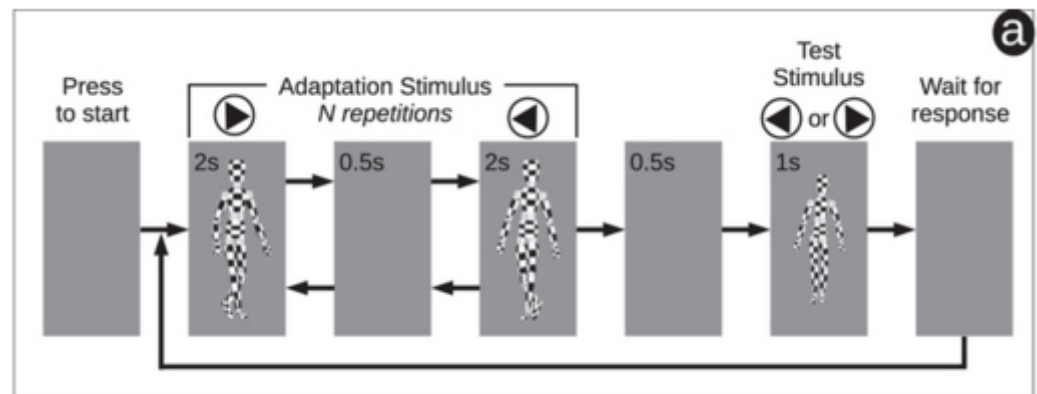
*Guarantors of Brain*

## SHOWCASED PUBLICATION

SCIENTIFIC  
REPORTS

### Biological movement and the encoding of its motion and orientation

Benton CP, Thirkettle M & Scott-Samuel NE (2016).  
*Scientific Reports*. 6, article 22393



Chris Benton



Nick Scott-Samuel

Are you walking at me? Biological movement and the encoding of its motion and orientation. A person's motion conveys a wealth of information that ranges from the complex, such as intention or emotional state, to the simple, such as direction of locomotion. How we recognise and recover people's motion is addressed by models of biological motion processing. Single channel models propose that this occurs through the operation of form template neurons which respond to viewpoint dependent snapshots of posture. More controversially, a dual channel approach proposes a second stream containing motion template neurons sensitive to view dependent snapshots of biological movement's characteristic local velocity field. We used behavioural adaptation to look for the co-encoding of viewpoint and walker motion, a hallmark of motion template analysis. We show that opposite viewpoint aftereffects can simultaneously be induced for forwards and reversed walkers. This demonstrates that distinct populations of neurons encode forwards and reversed walking. To account for such aftereffects, these units must either be able to inhibit viewpoint-encoding neurons, or they must encode viewpoint directly. Whereas current single channel models would need extending to incorporate these characteristics, the idea that walker motion is encoded directly, such that viewpoint and motion are intrinsically interlinked, is a fundamental component of the dual channel model.

*Image shows a schematic representation of the task undertaken*

## RECENT PUBLICATIONS

Oberauer K, Farrell S, Jarrold CR & Lewandowsky S (2016). [What limits working memory capacity?](#) *Psychonomic Bulletin and Review*. Published online 7 March 2016.

Jones RB, Mars B, Collishaw S, Potter R, Thapar A, Craddock N, Thapar A & Zammit S (2016). [Prevalence and correlates of psychotic experiences amongst children of depressed parents.](#) *Psychiatry Research*. Published online 8 March 2016.

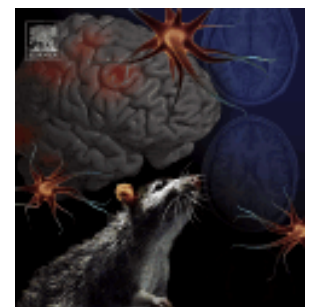
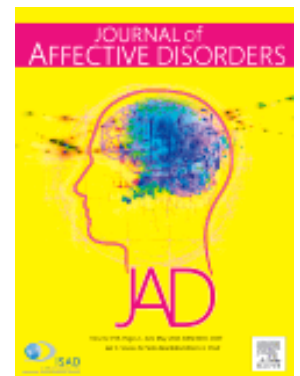
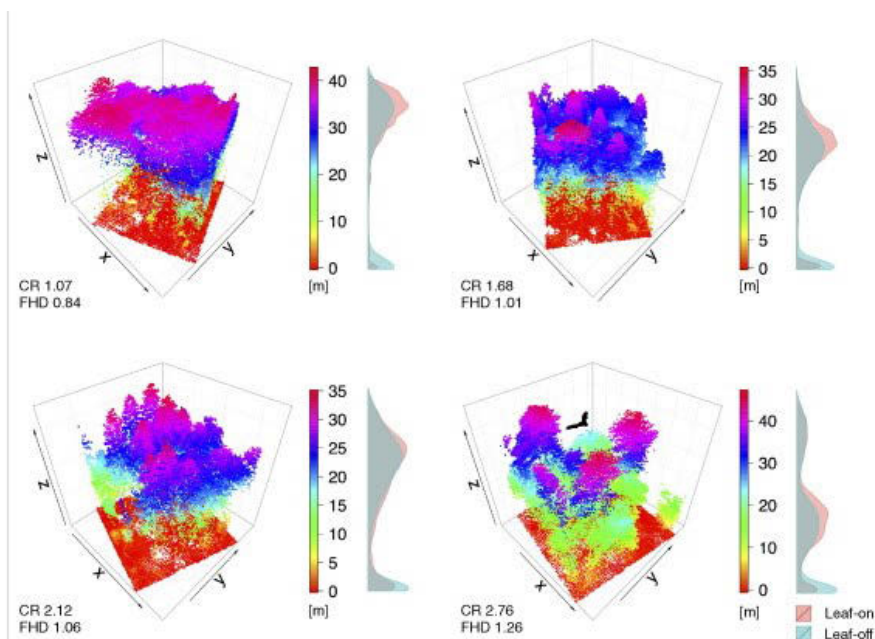
Thompson R, Paul ES, Radford A, Purser J & Mendl M (in press). [Routine handling methods affect behaviour of three-spined sticklebacks in a novel test of anxiety.](#) *Behavioural Brain Research*.

Wang X, Logie R & Jarrold CR (in press). [Interpreting potential markers of storage and rehearsal: implications for studies of verbal short-term memory and neuropsychological cases.](#) *Memory & Cognition*.

Carroll R, Thomas KH, Bramley K, Williams S, Griffin L, Potokar J & Gunnell D (2016). [Self-cutting and risk of subsequent suicide.](#) *Journal of Affective Disorders*. 192, pp8-10.

Kidger JL, Brockman R, Tilling KM, Campbell RM, Ford T, Araya R, King M & Gunnell D (2016). [Teachers' wellbeing and depressive symptoms, and associated risk factors: A large cross sectional study in English secondary schools.](#) *Journal of Affective Disorders*. 192, pp76-82

Froidevaux J, Zellweger F, Bollmann K, Jones G & Obrist MK (2016). [From field surveys to LiDAR: Shining a light on how bats respond to forest structure.](#) *Remote Sensing of Environment*. 175, pp242-250

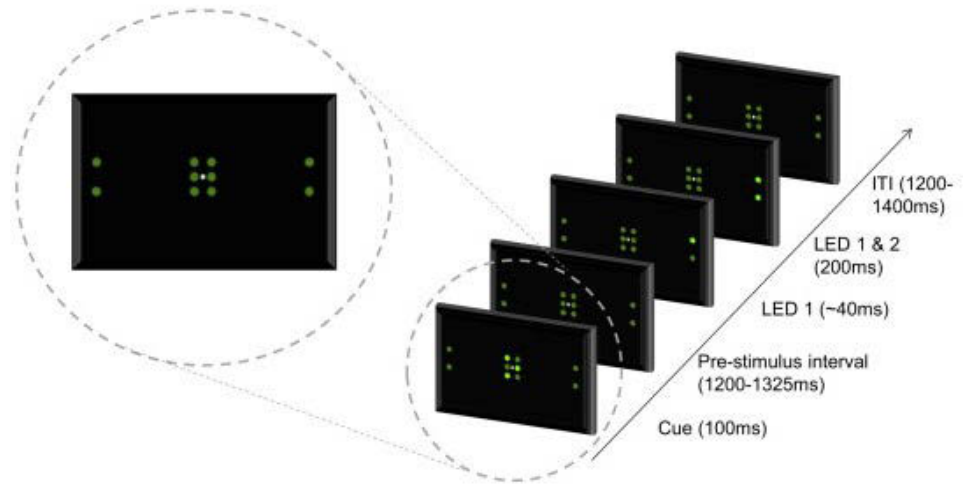


Behavioural  
Brain  
Research

*Image caption: Normalized LiDAR point clouds from the combined leaf-on and leaf-off dataset for four plots along a gradient of canopy ruggedness (CR) and foliage height diversity (FHD). The distribution of return heights (in meters) along the vertical profile is shown by vertical density plots for the leaf-on and leaf-off datasets separately, using the same scale as for the coloured scale bars.*

Milton A & Pleydell-Pearce CW (2016). The phase of pre-stimulus alpha oscillations influences the visual perception of stimulus timing. *NeuroImage*. Published online 27 February 2016.

Image caption: The LED sequence and timings for an individual trial. This trial represents a valid cue for a right visual field event with asynchronous onset of LEDs



Bland AR, Rosier JP, Mehta MA *et al.* (2016). **EMOTICOM: A neuropsychological test battery to evaluate emotion, motivation, impulsivity and social cognition.** *Frontiers in Behavioral Neuroscience*. Published online 24 February 2016.

Wang, X., Xuan, Y. & Jarrold CR (2016). Using a process dissociation approach to assess verbal short-term memory for item and order information in a sample of individuals with a self-reported diagnosis of dyslexia. *Frontiers in Psychology*. 7, p208

Smith MI, Taylor C, Weerasinghe NS, Koutsikou S, Lumb BM & Murrell JC (2016). Does inflammation induced by UVB and heat rekindling alter pain related behaviour in rats? *Veterinary Anaesthesia and Analgesia*. Published online 12 February 2016

Birnie K, Caskey F, Ben-Shlomo Y, Sterne J, Gilg J, Nitsch D & Tomson C (in press). Erythropoiesis stimulating agent dosing, haemoglobin and ferritin levels in UK haemodialysis patients 2005-2013. *Nephrology Dialysis Transplantation*.

Burchell AE, Chan K, Ratcliffe LEK *et al.* (2016). Controversies Surrounding Renal Denervation: Lessons Learned From Real-World Experience in Two United Kingdom Centers. *Journal of Clinical Hypertension*. Published online 9 February 2016.

Stothart G, Maynard O, Lavis R & Munafò M (2016). Neural correlates of cigarette health warning avoidance among smokers. *Drug and Alcohol Dependence*. 161, pp155-162

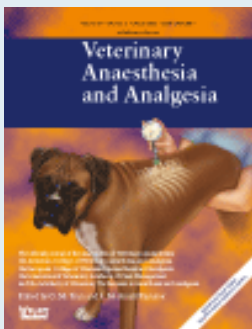
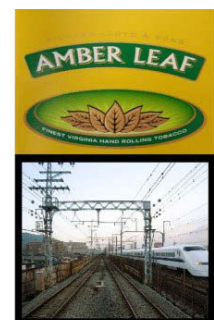


Image caption: Example of the three stimulus types in the oddball paradigm



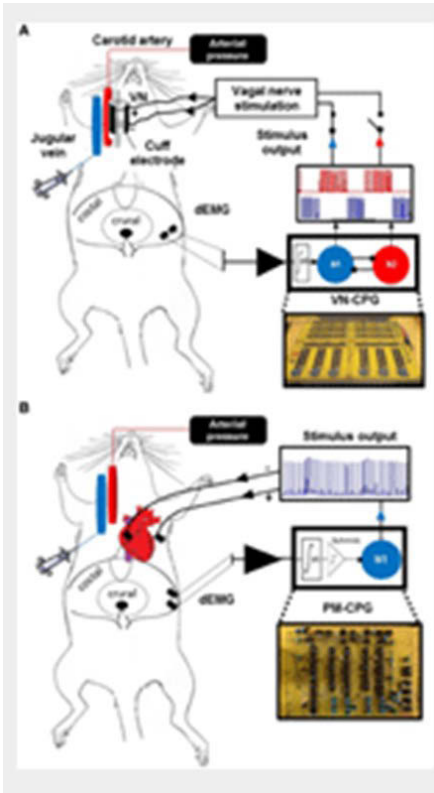
Health warning

Object

Landscape



O'Callaghan EL, Chauhan A, Zhao L, Lataro RM, Salgado HC, Nogaret A & Paton JFR (2016). [Utility of a novel biofeedback device for within-breath modulation of heart rate in rats: a quantitative comparison of vagus nerve versus right atrial pacing](#). *Frontiers in Physiology*. 7(27).



*Image caption: Experimental setup in which the VN-CPG receives input from dEMG (A). A view of the abdominal surface of the diaphragm shows the relative placement of two electrodes within the costal diaphragm which are used to record dEMG without interference from cardiac electrical activity. The dEMG activity is amplified and filtered by a pre-amplifier before use as the respiratory input to the VN-CPG. The VN-CPG is shown (bottom right) and a simplified representation of the differential amplifier and inhibitory interneurons,  $N_1$  (blue) and  $N_2$  (red), that comprise the VN-CPG and their respective firing patterns are depicted above. Either  $N_1$  or  $N_2$  can be connected to the bipolar cuff electrode enclosing the right cervical vagus nerve to control HR. (B) The dEMG signal was again used as a respiratory input to the PM-CPG. The signal forming stages are indicated as above, with the addition of a Schmitt trigger differential amplifier. The signal is applied to  $N_1$ , which generates continuous output with inspiratory modulation of spike frequency (blue trace, inset). The output was used to pace the heart using a myocardial bipolar electrode.*

Curran W, Benton CP, Harris J, Hibbard P & Beattie L (2016). [Adapting to time: Duration channels do not mediate human time perception](#). *Journal of Vision*. 16(4).

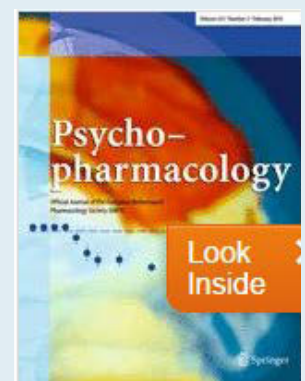
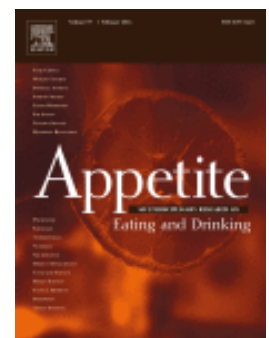
Mokrysz C, Landy R, Gage SH, Munafò MR, Roiser JP & Curran HV (2016). [Are IQ and educational outcomes in teenagers related to their cannabis use? A prospective cohort study](#). *Journal of Psychopharmacology*. 30(2), pp159-168

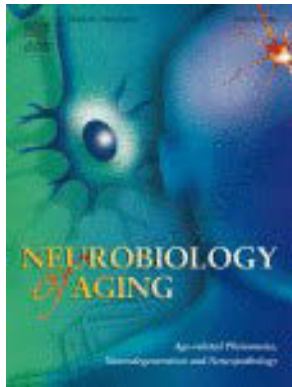
Kissileff HR, Brunstrom JM, Tesser R, Bellace D, Berthod S, Thornton JC & Halmi K (2016). [Computerized measurement of anticipated anxiety from eating increasing portions of food in adolescents with and without anorexia nervosa: Pilot studies](#). *Appetite*. 97, pp160-168

Greenwood MP, Greenwood M, Gillard BT, Loh SY, Paton JFR & Murphy D (2016). [Epigenetic control of the vasopressin promoter explains physiological ability to regulate vasopressin transcription in dehydration and salt loading states in the rat](#). *Journal of Neuroendocrinology*.

Stollery BT & Christian LM (2016). [Glucose improves object-location binding in visual-spatial working memory](#). *Psychopharmacology*. 233(3), pp529-547

Wilkinson L, Ferriday D, Bosworth M, Godinot N, Martin N, Rogers P & Brunstrom J (2016). [Keeping Pace with Your Eating: Visual Feedback Affects Eating Rate in Humans](#). *PLOS ONE*. 11(2), e0147603





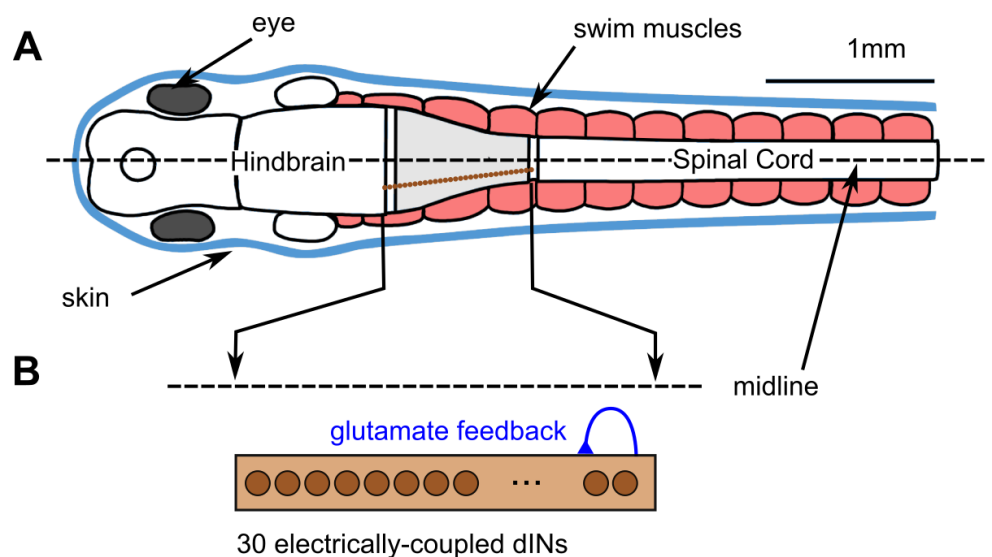
Pan X, Nasaruddin MB, Elliott CT, McGuinness B, Passmore AP, Kehoe PG, Hölscher C, McClean PL, Graham SF & Green BD (2016). [Alzheimer's disease-like pathology has transient effects on the brain and blood metabolome](#). *Neurobiology of Aging*. 38, pp151-63

Richards DA, Bower P, Chew-Graham C *et al.* (2016). [Clinical effectiveness and cost-effectiveness of collaborative care for depression in UK primary care \(CADET\): a cluster randomised controlled trial](#). *Health Technology Assessment*. 20(14), p1-192

Hothersall B, Caplen GJ, Parker RMA, Nicol CJ, Waterman-Pearson AE, Weeks CA & Murrell JC (2016). [Effects of carprofen, meloxicam and butorphanol on broiler chickens' performance in mobility tests](#). *Animal Welfare*. 25(1), pp55-67

Malpass A, Dowrick C, Gilbody S, Robinson J, Wiles N, Duffy L. & Lewis G (2016). [Usefulness of PHQ-9 in primary care to determine meaningful symptoms of low mood: a qualitative study](#). *The British Journal of General Practice*. 66(643), pp e78-84

Hull M, Soffe S, Willshaw DJ & Roberts A (2016). [Modelling Feedback Excitation, Pacemaker Properties and Sensory Switching of Electrically Coupled Brainstem Neurons Controlling Rhythmic Activity](#). *PLoS Computational Biology*. 12(1), e1004702



*Image caption: The hatching tadpole CNS with a population of electrically-coupled dIN neurons. (A) Top view diagram of tadpole showing skin (blue), swimming muscles (pink), and CNS with hindbrain and spinal cord. The CNS region able to generate swimming rhythm when isolated (grey) contains a population of ~30 dINs (brown) on each side. (B) On each side of the nervous system, the electrically-coupled population of ~30 dINs in the isolated region make excitatory feedback NMDAR synapses onto each other.*

Lewandowsky S (2016). [Future Global Change and Cognition](#). *Topics in Cognitive Science*. 8(1), pp7-18

Kauppinen R (in press). [Stroke onset time estimation from multispectral quantitative magnetic resonance imaging in a rat model of focal permanent cerebral ischaemia](#). *International Journal of Stroke*.

Hares KM, Redondo J, Kemp KC, Rice CM, Scolding NJ & Wilkins A (2016). [Axonal motor protein KIF5A and associated cargo deficits in multiple sclerosis lesional and normal-appearing white matter](#). *Neuropathology and Applied Neurobiology*. Published online 20 January 2016.

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