

TRINITY COLLEGE INSTITUTE OF NEUROSCIENCE

ANNUAL REPORT 2010



|  |    |
|--|----|
| <i>Directors Report</i> .....                              | 3  |
| Mission Statement.....                                     | 5  |
| TCIN STAFF .....   | 6  |
| TCIN EXECUTIVE MANAGEMENT COMMITTEE .....                  | 6  |
| MRI STAFF .....  | 6  |
| <i>NEW APPOINTMENTS AND ARRIVALS</i> .....                 | 7  |
| Visiting Researchers.....                                  | 7  |
| <i>RESEARCH ACTIVITY IN TCIN</i> .....                     | 8  |
| <i>RESEARCH HIGHLIGHTS</i> .....                           | 9  |
| <i>GRANT FUNDING IN TCIN</i> .....                         | 14 |
| 1. The TRIL programme .....                                | 14 |
| 2. Industrial Partnership with GlaxoSmithKline (GSK) ..... | 14 |
| 3. PRTL1 5-PhD Programmes .....                            | 14 |
| 4. Science Foundation Ireland .....                        | 14 |
| 5. TILDA.....  | 14 |
| Funding to individual PI's.....                            | 15 |
| <i>PROMOTIONS AND AWARDS</i> .....                         | 31 |
| <i>PROMOTIONS</i> .....                                    | 31 |
| 1. Professor .....   | 31 |
| 2. Associate Professor .....                               | 31 |
| 3. Senior Lecturer.....                                    | 31 |
| <i>AWARDS</i> .....  | 31 |
| <i>INVITED PRESENTATIONS</i> .....                         | 32 |
| <i>EDUCATION &amp; OUTREACH AT TCIN</i> .....              | 37 |
| MSc graduations October 2010.....                          | 37 |
| PhD submissions 2010 .....                                 | 38 |
| University of Dublin Neuroscience Society (Neurosoc) ..... | 38 |
| Neuroscience Seminar Series .....                          | 38 |
| Neuroscience Course Committee (BA Mod Degree) .....        | 39 |
| Extramural Course: 21st Century Brain .....                | 39 |
| <i>MEETINGS</i> .....                                      | 41 |
| Meetings Held:.....  | 41 |
| Planned Meetings:.....                                     | 41 |
| Lecture Series:.....                                       | 42 |
| <i>INDUSTRIAL COLLABORATIONS</i> .....                     | 43 |
| PATENTS FILED.....   | 43 |
| <i>PUBLICATIONS</i> .....                                  | 45 |
| <i>PERSONNEL IN TCIN (APPENDIX 1)</i> .....                | 47 |

## Directors Report

TCIN celebrated a significant milestone with its 10<sup>th</sup> Anniversary this year. Over this period the institute has grown to over 45 Principal Investigators (PIs) and a total of over 200 researchers. To mark the occasion, we held a celebratory 10<sup>th</sup> Anniversary Symposium on November the 9<sup>th</sup> with several international keynote guest speakers. We had a full lecture theatre for the entire day, consisting of distinguished guests, colleagues and our own staff.

At the conclusion of the symposium, we launched our Strategic Plan 2010-2016, based on the work accomplished by numerous workgroup sessions involving all Principal Investigators over a 6 month period, this plan will be used as the basis for our development over the coming years.

The brochure is available for download at the following url:

<http://www.ted.ie/Neuroscience/about/downloads.php>.

During the year, we were pleased to launch a start-up company called Engram Research which will provide early stage research services to Pharma & Biopharma companies. The company was showcased in October 2010 by Trinity Research & Innovation and is highlighted on the SFI website. [SFI-Engram Research](#)

The inaugural Barbara Ryan Memorial Prize in Neuroscience (2010) was presented to Catherine O'Sullivan. The prize is for €400 and was presented by Barbara Ryan's former colleagues Prof Marina Lynch, Prof Shane O'Mara with Dr Dan Ulrich the Course Co-ordinator for the BA-Mod Neuroscience (JS) and Ms Gillian Roddie, Education and Outreach Administrator.

On the 9<sup>th</sup> of March, TCIN and the NAI (Neurologic Alliance of Ireland) co-hosted the annual Brain Awareness Week conference in the Science Gallery in Trinity College, entitled The Future for Neurological Conditions in Ireland: Innovations and Solutions. The conference highlighted the progressive work being carried out in Neurological research and support services

The 17<sup>th</sup> Annual meeting of the PsychoNeuroimmunology Research Society (PNRS) was hosted by us in June 2010. This prestigious International conference, which is only held outside the USA once every three years, attracted 350 delegates including many high profile researchers in the field of Neuroimmunology and Neuroinflammation. TCIN were also proud that our researchers had 3 of the 12 journal articles in the May issue of Brain Behaviour and Immunity (the official journal of PNRS) which was handed out to all delegates.

We completed the redevelopment of a new laboratory area adjacent to the Chemistry building which will house TCIN research teams with 3 co-located laboratories for EEG and behavioural test and seating space for 20 people, adjacent to colleagues from TILDA (The Irish Logitudininal Study on Aging) and the TILDA health centre test suites. The

advantage of co-location will be to leverage the maximum possible research benefits from the TILDA dataset.

We upgraded several laboratory areas, creating a dedicated Incubator lab by converting the old darkroom and installing a new ventilation system to remove 50kW of heat and a backup power system to protect our valuable tissue samples in the TCIN Bio-storage room (Rm 4.21). We refurbished space at Rm 3.36 to accommodate 20 additional researchers space (30 Total) and at Rm 3.10 to accommodate 8 additional researchers (16 Total).

We continue to be involved in several technology platform programs with partners in Molecular Medicine Ireland (MMI) and the National Bio-photonics Imaging Program (NBIP) to share our EEG, MRI and Confocal Microscopy technology and expertise both nationally and within Europe.

Our industrial programs with GSK & Intel/TRIL continued to produce good results. This is a tribute to the hard work and co-operation between our organizations and research staff.

A major new research programme sponsored by Atlantic Philanthropies and led by Prof Ian Robertson commenced in 2010, the Niel program will develop Neural-enhancement technologies to improve the lives of aging populations.

We were pleased to welcome four new PIs during the year: Dr Connail McCrory, Dr Conor Houghton, Dr Astrid Sasse and Dr Michael Wride.

Our successful extra mural course 'Neuroscience the 21st Century Brain' is in its second year, and running over two terms of 9 weeks each.

Our research has generated over 470 publications over the last 3 years with an average impact factor of 6.1 and 10% of our publications have an impact factor greater than 10. (20% greater than 8)

We'd like to thank all our staff and researchers for their strong contributions during the year. We also acknowledge the strong support of College officers, the TCIN board, our Chairman Mr Alan Cooke and our Dean Prof Clive Williams during the year.

Prof Shane O'Mara  
Director TCIN

Dec 2010

## **Mission Statement**

‘Understanding the brain from molecules to mind’

Through our research and teaching in neuroscience, we engage students and society in the quest for knowledge about the human brain and mind, and seek to achieve excellence in all we do. We respond with creativity and imagination to the challenges and opportunities of a shared future, by developing and applying our fundamental scientific knowledge for the benefit of human health, welfare, and knowledge.

## **TCIN STAFF**

|                       |                             |                 |
|-----------------------|-----------------------------|-----------------|
| Prof. Shane O'Mara    | Director                    | somara@tcd.ie   |
| Mr. Ciaran Conneely   | Operations Manager          | conneec@tcd.ie  |
| Ms. Barbara Hewitt    | Accountant                  | bhewitt@tcd.ie  |
| Ms. Gillian Roddie    | Academic & Outreach Officer | roddiegi@tcd.ie |
| Ms. Aida Gutkauskaitė | Executive Officer           | gatkausa@tcd.ie |
| Ms Lisa Beattie       | Executive Officer           | lbeatti@tcd.ie  |

## **TCIN EXECUTIVE MANAGEMENT COMMITTEE**

The members of TCIN's Executive Management Committee and their affiliations

|                        |  |
|------------------------|--|
| Prof. Shane O'Mara     | Director of TCIN                               |
| Professor Ruth Byrne   | Deputy Director of TCIN, School of Psychology  |
| Prof Veronica Campbell | Head of Physiology                             |
| Prof Declan McLoughlin | Consultant Psychiatrist, St Patrick's Hospital |
| Prof Mani Ramaswami    | School of Genetics, Dept of Zoology            |
| Prof Richard Reilly    | School of Engineering, School of Medicine      |
| Mr. Ciaran Conneely    | Operations Manager                             |
| Ms. Barbara Hewitt     | TCIN Accountant                                |

## **MRI STAFF**

|                        |                   |                           |
|------------------------|-------------------|---------------------------|
| Dr. Christian Kerskens | Lead Physicist    | christian.kerskens@tcd.ie |
| Mr. Sojo Joseph        | Radiographer      | josephs@tcd.ie            |
| Rustam Rakhmatullin    | Animal specialist | rakhmatr@tcd.ie           |

## NEW APPOINTMENTS AND ARRIVALS

**Dr Connail McCrory**, School of Medicine and Director of the St James Hospital Pain Centre was approved as a TCIN PI in 2010.

**Dr Conor Houghton**, School of Mathematics and a winner of the James S McDonnell Foundation award in Neuroscience was approved as a TCIN PI in 2010.

**Dr Astrid Sasse**, School of Pharmacy was approved as a TCIN PI in 2010.

**Dr Michael Wride**, Department of Zoology was approved as a TCIN PI in 2010.

**Ms Lisa Beattie** was appointed as Executive Officer in Jan 2010.

### Visiting Researchers

**Prof Orlando Espino** from the University of La laguna, Tenerife, was a visiting fellow from September 2010-December 2010; he is a collaborator of Professor Ruth Byrne.

## RESEARCH ACTIVITY IN TCIN

One of the core ideas of the Institute of Neuroscience was creating multidisciplinary translational research teams. Our PIs are drawn from all the faculties of the university and there are important translational links between our researchers, clinicians, affiliated hospitals and industrial partners which enable improvements in scientific understanding of basic mechanisms and the development of new therapies for human health.

Three research foci describe the broad interdisciplinary nature of our research in the table below and PIs are listed under these as follows.

| <b>1. Neurodegeneration, neuroprotection &amp; neuroplasticity</b> | <b>2. Synapses, cognition &amp; behaviour</b> | <b>3. Neuropsychiatry &amp; neurodevelopmental disorders</b> |
|--|---|--|
| <b>Prof. Marina Lynch</b>  | <b>Prof. Mani Ramaswami</b>                   | <b>Prof. Declan McLoughlin</b>                               |
| <b>Dr. Colm Cunningham</b>   | <b>Dr. Paul Dockree</b>                       | <b>Dr. Andrew Harkin</b>                                     |
| Prof. Roger Anwyl  | Prof. Khurshid Ahmad                          | Prof. Veronica Campbell                                      |
| Dr. Arun Bokde   | Prof. Roger Anwyl                             | Dr. Thomas Connor  |
| Prof. Veronica Campbell  | Prof. Ruth Byrne                              | Dr. Aiden Corvin   |
| Dr. Thomas Connor  | Dr. Aiden Corvin                              | Prof. Kumlesh Dev  |
| Dr. Colm Cunningham  | Prof. Kumlesh Dev                             | Dr. Gary Donohue   |
| Dr. Gavin Davey  | Dr. Paul Dockree                              | Prof. Brian Lawlor   |
| Prof. Kumlesh Dev  | Prof. Jane Farrar                             | Prof. Thomas Frodl   |
| Dr. Colin Doherty*   | Prof. John Foxe*                              | Prof. Hugh Garavan   |
| Dr. Gary Donohue   | Prof. Thomas Frodl                            | Prof. Michael Gill   |
| Dr. Jane Farrar  | Prof. Hugh Garavan                            | Prof. Harald Hampell   |
| Prof. Harald Hampel  | Dr. James Gibney*                             | Dr. Andrew Harkin  |
| Prof. Orla Hardiman  | Dr. Conor Houghton                            | Prof. Pat McKeon*  |
| Prof. Pete Humphries   | Prof. Pete Humphries                          | Prof. Declan McLoughlin                                      |
| Dr. Aine Kelly   | Dr. J. Pablo Labrador                         | Prof. Shane O'Mara   |
| Dr. Julie Kelly  | Prof. Brian Lawlor                            | Prof. Ian Robertson  |
| Dr. Paul Kenna   | Dr. Kevin Mitchell                            | Dr. Astrid Sasse   |
| Prof. Rose-Anne Kenny  | Prof. Fiona Newell                            | Dr. Jogin Thakore*   |
| Prof. Brian Lawlor   | Prof. John O'Doherty                          |  |
| Prof. Marina Lynch   | Prof. Shane O'Mara                            |  |
| Dr. Aileen Lynch   | Prof. Desmond O'Neill                         |  |
| Dr. Connail McCrory  | Dr. Niall Pender*                             |  |
| Prof. Declan McLoughlin  | Prof. Mani Ramaswami                          |  |
| Prof. Kingston Mills   | Prof. Ian Robertson                           |  |
| Prof. Shane O'Mara   | Prof. Michael Rowan                           |  |
| Prof. Desmond O'Neill  | Dr. Daniel Ulrich                             |  |
| Prof. Ian Robertson  | Dr. Alice Witney                              |  |
| Prof. Michael Rowan  | Dr. Michael Wride                             |  |

*NOTE: Details of team members for all PIs are given in Appendix 1*

## RESEARCH HIGHLIGHTS

Aging research is a good example of TCIN's multidisciplinary translational approach and is an important aspect and strength of Theme 1. Our PIs are involved in basic research at the cellular and molecular level led by Prof Marina Lynch and Dr Colm Cunningham and with a number of industrial sponsors. We have a major clinical work programme in the Mercers Institute for Successful Aging based in St James Hospital led by Prof. Brian Lawlor and a major- €30m national longitudinal study on aging (TILDA) led by Prof. Rose-Anne Kenny. We are also involved in developing technologies to assist older people in their daily lives with the Technology for Independent Living (TRIL) programme with Intel and GE which is coordinated in TCIN by Prof Ian Robertson.

Dr Connor and his team have established that activation of  $\beta$ -adrenoceptors induces expression of anti-inflammatory components of the interleukin-1 system (IL-1ra and IL-1RII); this anti-inflammatory action may underlie the neuroprotective effects of  $\beta$ -adrenergic agonists. Dr Harkin has continued his work on identifying novel neuroprotective properties associated with the tricyclic antidepressant desipramine. His recent findings in this area and further analysis on his second area of interest, the monoaminergic mechanisms which mediate a potentially lethal interaction between caffeine and MDMA, have been reported at meetings in 2008. Drs Connor and Harkin, in collaboration with Dr Julie Kelly and Dr Jane Farrar, are continuing to generate a portfolio of pre-clinical data funded by an Enterprise Ireland Commercialization Technology Development Grant on a lead first-in-class thyrotropin-releasing hormone (TRH)-based compound developed by Dr Kelly. A US patent was granted on the compound in 2008.

Dr Cunningham reported (in Biological Psychiatry) that systemic inflammatory events early in chronic neurodegenerative disease can acutely exacerbate features of disease and accelerate its progression.

Professor Veronica Campbell's research group have identified a novel mechanism by which the endocannabinoid system provides neuroprotection in an in vitro model of Alzheimer's disease. This project has received additional funding to test this neuroprotective pathway in an animal model of Alzheimer's like pathology.

Her research, as well as the research activity in several other laboratories (Connor, A Kelly, J Kelly, O'Mara, Lynch, Harkin) have identified and are continuing to investigate a number of potential neuroprotective strategies including endocannabinoids, TRH-like molecules,  $\beta$ -adrenergic agonists, the tricyclic antidepressant desipramine, PPAR $\gamma$  activators and statins as well as exercise and novel environments.

Dr Aiden Corvin heads the Psychosis Research Group, part of the Neuropsychiatric Genetics Laboratory under Prof Michael Gill.

Highlights of the year have included:

- Identification of common genetic risk variants for schizophrenia implicating the Major Histocompatibility Complex (MHC)

- Establishing substantial overlap in susceptibility between schizophrenia and bipolar disorder
- Providing evidence that this may involve molecular pathways involved in Neural Cell Adhesion and Scaffolding
- Implicating the schizophrenia susceptibility gene, NOS1, as having a wider effect on human cognition in patients and the general population.

Dr Gary Donohoe with colleagues in Neuro-psychiatry identified a genetic variant at NOS1 that impacts on cognition in patients and healthy controls.

Dr Harkin's group identified pharmacological strategies that increase noradrenaline availability and function in the CNS that can combat neuroinflammation, thereby inhibiting production of inflammatory cytokine and other mediators which are toxic to neurons. In a recent paper published in *Brain Behavior and Immunity* 24:1354-61, they reported that clenbuterol, an agonist at noradrenergic beta2-receptors has anti-inflammatory and neurotrophic actions and elicits a neuroprotective effect in an animal model of glutamate mediated neurodegeneration. The results of this study are of particular significance as glutamate mediated excitotoxicity has been implicated as a major pathological mechanism underlying neuronal death in a range of acute and chronic neurodegenerative disease states.

The Harkin group also elucidated mechanisms mediating a potentially lethal interaction previously described between caffeine and the substituted amphetamines and reported our results in the *British Journal of Pharmacology*. In this regard serotonin and dopamine are proposed to mediate MDMA-induced hyperthermia whereas a combination of adenosine receptor antagonism and phosphodiesterase inhibition can account for the exacerbation of MDMA-induced hyperthermia by caffeine. A role for dopamine was further advanced in an additional publication in 2010 [Vanattou-Saifoudine, McNamara & Harkin (2010) *Psychopharmacology* 211: 15-25]

The safety of recreational drugs is important in public health policy, their use and safety evaluation is an area that has been developed under the auspices of HRB funding. We have utilised newly acquired and state of the art methodologies such as bioradiotelemetry and tissue superfusion to advance our existing research dealing with the acute and long term safety of recreational psychostimulant drugs.

Professor Michael Gills's group made an important breakthrough as part of an international research effort in identifying further biomarkers for the development of Alzheimer's Disease. The genome-wide association study identifies variants at CLU and PICALM associated with Alzheimer's disease. This work was published in *Nature Genetics*.

Professor Harald Hampel's group has also demonstrated the multicentre reliability of a biological marker (increased p-tau 231 in cerebrospinal fluid (CSF)) for identifying Alzheimer's Disease at a very early predementia stage; this work was published in *Neurology*. The Hampel team, with research partners in the US, has also developed a test

for the measurement of a surrogate marker of  $\beta$ -amyloid production, BACE 1, in CSF; this has been published in Archives of General Psychiatry.

Professor Lynch's group have focused on identifying endogenous mechanisms of modulating the activation state of microglia and have highlighted, in a recently-published paper, the importance of a widely expressed receptor, SIGIRR. Another modulatory molecule, CD200, is also under investigation and the group has also established that activating its receptor restores synaptic function in aged rats and in rats treated with amyloid beta.

Professor Lynch's group have also been involved in an interdisciplinary study involving Professor O'Mara's and Dr Christian Kersken's groups designed to couple markers identified by MRI with deterioration in cognitive and synaptic function and neuroinflammatory changes. The teams have identified neuroprotective effects of novel lipid mediators and have established that the anti-inflammatory effects of the PPAR $\gamma$  agonist rosiglitazone, may result from its ability to modulate astrocyte and microglial activation. Researchers in the Lynch team and in Professor Kingston Mills team have established that T cells have powerful modulatory effects on microglial activation and that the interactions between these cells impact on the development of symptoms in animal models of Alzheimer's Disease and Multiple Sclerosis.

Dr Connail McCrory's group continued to make progress in research on the response of the human nervous system to pain. In particular his group has been researching:

- (i) Human neuronal cytokine biosynthesis response to chronic pain
- (ii) Mechanisms of human neuronal response to neuromodulation in vivo

Prof O'Mara's group have demonstrated, for the first time, long-term plasticity in anterior thalamic nuclei synapses in response to high- and low-frequency stimulation. They have found that long-term potentiation (LTP) of the thalamic field response is induced predominantly through the mammillothalamic tract. Furthermore, they discovered that long-term depression (LTD) of synaptic transmission can be induced only after stimulation of the direct connections carried by the fornix. Interestingly, basal synaptic transmission mediated by the mammillothalamic tract undergoes use-dependent, BDNF-mediated potentiation, revealing a distinct form of plasticity specific to the diencephalic region.

The O'Mara group examined for the first time, single-unit and population activity in anteroventral nucleus (AV) during foraging and during naturally occurring sleep. The research describes a subgroup of AV neurons strongly entrained by theta oscillations. This feature together with their firing properties and spike shape suggests they be classified as "theta" units. Theta units determine the amplitude of local field potential during theta periods, but are not correlated to the oscillatory amplitude of spindles periods.

Prof O'Mara's group also investigated anteroventral oscillatory responses to their main inputs: the descending dorsal fornix and ascending mammillothalamic tract. They show that the descending fornix projection is the major pathway that controls thalamic theta rhythm within the hippocampo-diencephalic circuit. Selective low-frequency stimulation

of the descending hippocampal output to AV increased the amplitude of theta ratio (theta over delta) in anterior thalamus.

The research activity of Drs Juan Pablo Laborador and Kevin Mitchell focuses on using molecular genetic, cell biological and imaging techniques to understand how neurons achieve specific cell fates, and how these cell fates, once determined, are elaborated to yield precise neuronal wiring patterns. Recently Dr Laborador's work has highlighted a functional link between the transcriptional control of dorsal motor axon targeting by *eve* and *grn* and the expression of the Unc-5 receptor. The group's studies have been able to demonstrate how these transcription factors regulate the expression of axon guidance receptors establishing one of the few examples of transcriptional regulation of axon guidance receptors known to date. Professor Ramaswami's research is continuing to probe genetic and cellular mechanisms of synaptic and behavioural plasticity in the relatively simple neural network that drives *Drosophila* olfactory behaviour.

Professor Pete Humphries has established that targeting a protein integral to the blood brain barrier mediates reversal opening of the blood brain barrier; this paper which employed a multidisciplinary team and includes findings from the MRI team led by Dr Kerskens, was recently published in *J Gene Med*.

Professor Brian Lawlor's group is continuing their study on determining whether neurocardiovascular instability contributes to the transition from Mild Cognitive Impairment (MCI) to dementia. Over 100 subjects have been recruited in this prospective study and the team have demonstrated that MCI subjects have greater postural blood pressure changes than age-matched controls. The group is also involved in 2 major industry-funded research collaborative programmes. The focus of the GSK programme is to accelerate Alzheimer's Disease treatments. The GSK-funded clinical trials of candidate cognitive enhancers in normal elderly control subjects and subjects with MCI are about to commence and will comprise EEG, behavioural and MRI analyses.

Professors Rose-Anne Kenny, Ian Robertson, Richard Reilly and Brian Lawlor are among the PIs involved in the Intel-funded Technology Research for Independent Living (TRIL). This large-scale programme aims to investigate three major factors which lead to loss of independence in older persons: falls, cognitive decline and social isolation. The emphasis is on prevention and early detection of disease to maximize independent living, and to study the role of technology to facilitate this early detection and intervention. The academic-industry partnership includes multidisciplinary teams from Trinity College Dublin, University College Dublin and National University of Ireland, Galway and Intel Digital Health, Leixlip; it is funded by Intel Corporation, GE and the Industrial Development Agency (IDA). Professor Richard Reilly's specific research projects include electrophysiological investigations into multisensory integration (EEG and ERPs), computational modeling of electrophysiological signals, algorithmic improvements to tractography for brain imaging and speech analysis as a potential marker of cognitive function.

Professor Hugh Garavan is a PI on several recently-funded grants one of which is entitled 'Neurocognitive risk and protective factors for addiction'. His international status in this area has been confirmed by a number of recent publications and his appointment, as the sole foreign member, to the Medical Research Council (UK) Addiction Project Group. He is an investigator on 2 recently-awarded 'Initiatives in Medicine in Ireland' grants.

Professor Declan McLoughlin's groups in St Patrick's Hospital and TCD have started a 5-year research programme called the EFFECT-Dep Study. This programme is supported by a HRB Translational Research Award and its purpose is to improve electroconvulsive therapy (ECT) practice and use it to interrogate the molecular neurobiology of depression. The group will carry out a definitive randomised controlled trial comparing bilateral and high-dose unilateral ECT, recruiting 140 patients with severe depression. The study will use an animal model of ECT treatment to characterize changes in global protein expression in brain and plasma and will carry out parallel studies using plasma from depressed patients recruited into the clinical trial. The research aims to identify candidate peripheral biomarkers for depression, treatment response and depression relapse.

Professor Robertson's group began two randomized trials of attentional training, one for adults suffering from ADHD and the other for elderly individuals suffering from attention-related memory problems. Josh Balsters and Redmond O'Connell completed what may be the first pharmacological study using simultaneous EEG/fMRI as part of the GSK consortium on neurodegeneration. Continued funding was secured under the TRIL programme and Peter Murphy, IRCSET PhD student has, with the help of Redmond and Josh, established a new capability for measuring attentional function using pupillometric response: the first paper on this has been submitted for publication. The NIEL programme has begun and a number of grant applications submitted. The new NIEL Chair in Cognitive Neuroscience of Ageing will be appointed in 2011.

## GRANT FUNDING IN TCIN

### **1. The TRIL programme**

This program is one of the biggest industry-academic partnerships ever funded in Ireland. This €10 million programme - a partnership between TCD/TCIN, UCD, NUIG Intel and GE - is designed to discover and deliver technology solutions which support independent living in the ageing population. TCIN PI's lead three of the five strands of this large and internationally-prominent programme, namely Prof Brian Lawlor (social connection), Prof Rose-Anne Kenny (falls) and Profs Ian Robertson & Richard Reilly (Cognition). The TRIL Clinic has recruited over 600 older people to date. There were 314 clinical and home assessments in 2010 and over 400 telephone interviews as part of the longitudinal follow up of the original 600 participants. In 2010, TRIL moved over to paperless gathering of clinical data using rugged medical touch screen tapped computers. This longitudinal study is tremendously important, it will allow the validation of various biomarkers previously identified in the TRIL 1.0 cross-sectional study to predict changes within this cohort and to refine measurements to adjust key variables.

### **2. Industrial Partnership with GlaxoSmithKline (GSK)**

This research, led by Professor Shane O'Mara, is ongoing since August 2007. Its objective is to expedite the discovery and development of new medicines for the treatment of Alzheimer's Disease. The €15million funding covers pre-clinical and clinical components and the first clinical trials will commence in November 2008 in a purpose-built clinical assessment suite in St James's Hospital.

### **3. PRTL I 5-PhD Programmes**

TCD investigators led by the Programme Director Professor Marina Lynch were awarded funding in July 2010 under the PRTL I Cycle 5, to introduce a PhD programme in Molecular and Cellular mechanisms underlying inflammatory processes. The programme is due to commence in Oct 2011 and will run in parallel with other Institutions including UCD, UCC, NUIG and Queen's University Belfast.

### **4. Science Foundation Ireland**

Several TCIN investigators have been awarded a prestigious Principal Investigator award and these are listed in the table below. The latest recipient of one of these awards is Prof. Fiona Newell.

### **5. TILDA**

Professor Rose-Anne Kenny leads The Irish Longitudinal Study on Ageing (TILDA), a multi-disciplinary study which conceptualises ageing along three main dimensions: health, wealth and social connectivity. Its first pilot study, which provides baseline data that allows for the longitudinal assessment and evaluation of biomeasures in particular areas of disease that are prevalent with age, has been successfully completed. During the pilot, Trinity College Dublin opened a health assessment centre in September 2008. The

next phase of the study will include several nested studies complementing and extending ongoing research activity in TCIN and St James's Hospital.

*Fieldwork and health assessments:*

2010 was an exciting year for the TILDA study. The first three months of the year were busy recruiting and training social interviewers. By April 2010, more than 120 trained interviewers were in the field actively recruiting eligible respondents. By December 31st 2010, 7828 of the 8000 respondents had been recruited. As of December 31st 2010, 3958 health assessments had been completed.

*Funding and grants:*

Since its initiation, TILDA has been funded from two sources; a grant from Irish Life as well as a series of grants from the Atlantic Philanthropies. In 2010, a third major funder came on board. The Office of the Minister for Older People committed 12 million euro to TILDA over the next seven years. The total grant award from all funders amounts to 23 million euro.

In November 2010, Dr George Savva was awarded a grant from the Centre for Ageing Research and Development in Ireland (CARDI) to investigate the relationship between multi-morbidity and disability using existing epidemiological datasets from Northern Ireland and the Republic of Ireland.

In December 2010, TILDA submitted a grant application to the NIH, in collaboration with the SHARE pan-European study to conduct health assessments on their Irish respondents. If successful, we anticipate conducting additional health assessments on approximately 800 SHARE Ireland respondents between June and August 2011.

*New Staff:*

New hires during 2010 included a Survey Manager, Biostatistician, Research Nurse Manager, Database Manager, two Economic Postdoctoral Researchers as well as further administrative support. In addition, an arrangement was made with the Economic and Social Research Institute (ESRI) to second Professor Alan Barrett to the TILDA study. TILDA now employs 33 people including both research staff and research nurses.

**Funding to individual PI's**

Funding to individuals from a variety of sources is summarized in the table below:

| <b>Principal Investigator</b>        | <b>Granting Body</b>       | <b>Amount</b> | <b>Period of Grant</b> | <b>Yrs</b> | <b>Area of Research Funded</b>           |
|--------------------------------------|----------------------------|---------------|------------------------|------------|--|
| Prof. Roger Anywl                    | Science Foundation Ireland | 1,000,000     | 2002 – 2006            | 4          | Plasticity of Brain, Alzheimers research |
| Prof. Roger Anywl                    | EU                         | 276,000       | 2003 – 2006            | 3          | Toxic agents on brain                    |
| Prof. Ruth Byrne                     | IRCHSS                     | 63,000        | 2003 – 2006            | 3          | Cognitive processes in human reasoning   |
| Prof. Ruth Byrne<br>Dr. Hugh Garavan | TCIN/PRTL I                | 50,000        | 2004 – 2007            | 3          | Human reasoning and attention            |

|  |                                 |           |             |   |  |
|--|---------------------------------|-----------|-------------|---|--|
| Dr. Mary Cannon                        | Health Research Board           | 1,500,000 | 2005 – 2010 | 5 | Adolescent brain development and risk for schizophrenia: a study of structural and functional disconnectivity                                |
| Prof Veronica Campbell                 | Enterprise Ireland              | 100,000   | 2003 – 2006 | 3 | Neurodegeneration  |
| Prof Veronica Campbell                 | Science Foundation Ireland      | 130,000   | 2004 – 2007 | 3 | Cannabinoid neuropharmacology  |
| Prof Veronica Campbell                 | Health Research Board           | 150,000   | 2005 – 2008 | 3 | Regulation of adult stem cell differentiation by hypoxia   |
| Prof Veronica Campbell                 | Science Foundation Ireland      | 180,000   | 2007 – 2009 | 2 | Cannabinoids and the control of stem cell differentiation.   |
| Prof Veronica Campbell                 | Health Research Board           | 200,000   | 2009 – 2011 | 2 | Neurodegeneration/neurorepair  |
| Dr. Thomas Connor                      | IRCSET                          | 102,380   | 2003 – 2006 | 3 | Neuroimmunology  |
| Dr. Thomas Connor                      | Science Foundation Ireland      | 202,952   | 2004 – 2007 | 3 | Neuroimmunology  |
| Dr. Thomas Connor Prof. Kingston Mills | Science Foundation Ireland AOIP | 120,000   | 2005 – 2008 | 3 | Neuroimmunology  |
| Dr. Thomas Connor                      | Health Research Board           | 298,436   | 2008 – 2011 | 3 | Enhancement of central noradrenergic tone as a novel strategy to combat neuroinflammation and neurodegeneration: A role for b2-adrenoceptors |
| Dr. Thomas Connor, Dr Andrew Harkin    | EU FP7, MOODINFLAME             | 373,200   | 2008 – 2011 | 3 | Early diagnosis, treatment and prevention of mood disorders targeting the activated inflammatory response system                             |
| Dr Colm Cunningham                     | Wellcome Trust                  | 1,370,000 | 2006-2010   | 4 | Neuroimmunology / Neuropsychology of ageing  |
| Dr. Gavin Davey                        | EU Marie Curie                  | 1,200,000 | 2006 – 2010 | 4 | Neuroscience   |
| Dr. Gavin Davey                        | NIBRT/IDA                       | 1,300,000 | 2006 – 2010 | 4 | Biotechnology  |
| Dr. Gavin Davey                        | IRCSET                          | 70,000    | 2006 – 2009 | 3 | Neuroscience   |
| Dr. Gavin Davey/Prof. Michael Coey     | Science Foundation Ireland AOIP | 160,000   | 2005 – 2009 | 4 | Neuroscience/Nanoscience   |

|   |                            |         |             |   |  |
|---|----------------------------|---------|-------------|---|--|
| Dr Gary Donohoe / Prof Harold Hampel          | NARSAD                     | 41,892  | 2008 – 2010 | 2 | A diffuse tensor imaging investigation of white matter abnormalities associated with OLIG2 and CNP in schizophrenia  |
| Dr Gary Donohoe /Dr. A Corvin & Prof. M. Gill | Science Foundation Ireland | 162,000 | 2007 – 2010 | 3 | Does genetic variation at dysbindin and other candidate schizophrenia genes within the glutamate system contribute to abnormal perceptual processing measured using visual and auditory evoked potentials? |
| Dr. Jane Farrar                               | Fighting Blindness Ireland | 180,000 | 2003 – 2006 | 3 | Exploration of therapeutic approaches for RP based on modulation of photoreceptor apoptosis  |
| Dr. Jane Farrar                               | Science Foundation Ireland | 970,297 | 2003 – 2007 | 4 | Exploration of molecular pathology and molecular therapeutics for inherited retinal degenerations.   |
| Dr. Jane Farrar                               | Enterprise Ireland         | 179,003 | 2003 – 2006 | 3 | Innovative approaches enabling tissue specific siRNA suppression – potential therapeutic applications.   |
| Dr. Jane Farrar                               | Fighting Blindness Ireland | 200,000 | 2003 – 2006 | 3 | Exploration of Neural and Retinal Stem as a therapeutic for retinopathies.   |
| Dr. Jane Farrar                               | Health Research Board      | 180,000 | 2004 – 2007 | 3 | Gene therapy for Osteogenesis Imperfecta.  |
| Dr. Jane Farrar                               | Health Research Board      | 210,000 | 2006 – 2009 | 3 | Treatment of retinal degenerations in mouse models of retinitis pigmentosa by transplantation of genetically modified retinal stem cells.  |
| Dr. Jane Farrar                               | Health Research Board      | 210,000 | 2006 – 2009 | 3 | Regulatory role of miRNAs in retinitis pigmentosa models.  |
| Dr. Jane Farrar                               | Health Research Board      | 300,000 | 2006 – 2009 | 3 | Exploration of exogenous microRNAs as a suppression tool and endogenous microRNAs in the context of retinal degenerations  |

|   |   |           |             |   |   |
|---|---|-----------|-------------|---|---|
| Prof. Hugh Garavan                            | Royal City of Dublin Hospital                           | 45,000    | 2006 – 2007 | 1 | The role of cognitive control in cigarette smoking and abstinence   |
| Prof. Hugh Garavan                            | National Institute of Drug Abuse                        | 1,000,000 | 2001 – 2006 | 5 | The role of executive functions in cocaine abuse  |
| Prof. Hugh Garavan                            | EU 6th Framework Programme                              | 800,000   | 2006 – 2011 | 5 | Reinforcement-related behaviour in normal brain function and psychopathology  |
| Prof. Hugh Garavan                            | EU Marie Curie Transfer of Knowledge                    | 640,000   | 2006 – 2009 | 3 | Using Cognitive Neuroscience to understand how consumers make and maintain healthy food choices   |
| Prof. Hugh Garavan                            | Health Research Board                                   | 300,000   | 2008 – 2011 | 3 | Neurocognitive risk and protective factors for addiction  |
| Dr Kieran Murphy PI, Prof. Hugh Garavan       | Health Research Board                                   | 300,000   | 2008 – 2011 | 3 | Neuroscience  |
| Prof Mark Bellgrove PI with Prof Hugh Garavan | National Health and Medical Research Council, Australia | 399,753   | 2011-2013   | 2 | Executive functions, impulse control  |
| Prof. Michael Gill                            | NIMH  | 1,500,000 | 2003 – 2008 | 5 | ADHD genetics research collaboration  |
| Prof. Michael Gill                            | Science Foundation Ireland                              | 990,000   | 2003 – 2007 | 4 | Major Psychoses genetics and functional research  |
| Prof. Michael Gill                            | Science Foundation Ireland                              | 143,891   | 2006 – 2008 | 2 | Schizophrenia genetics  |
| Prof. Michael Gill                            | Enterprise Ireland                                      | 132,000   | 2005 – 2007 | 2 | E learning and adaptive simulations   |
| Prof. Harald Hampel, M Ewers                  | Biotech Company, Germany                                | 200,000   | 2007 – 2008 | 1 | Early and differential diagnosis of Alzheimer's disease utilizing structural and functional changes in the brain, and genomic, neuropsychological and neurochemical markers |
| Prof. Harald Hampel, K Burger                 | Biotech Company, Germany                                | 170,000   | 2007 – 2009 | 1 | Validity examination of innovative inflammatory markers of Alzheimer's disease in blood plasma  |
| Prof. Harald Hampel                           | Biotech Company, Germany                                | 200,000   | 2007        | 1 | Study on blood-based biomarkers of microcirculation and MRI measures in 225 patients with   |

|   |  |         |             |   |   |
|---|--|---------|-------------|---|---|
|   |  |         |             |   | Alzheimer's disease, mild cognitive impairment and healthy controls   |
| Prof. Harald Hampel                     | Lundbeck   | 47,000  | 2006 – 2007 | 1 | A 1-year randomised, double-blind placebo-controlled study to evaluate the effects of MEMANTINE on rate of brain atrophy in patients with Alzheimer's disease (an MRI longitudinal study) Study No. 10112                               |
| Prof. Harald Hampel, Teipel SJ, Ewers M | Janssen  | 136,238 | 2005 – 2007 | 2 | Diffusion tensor weighted MRI in Alzheimer's disease prediction and mapping of symptomatic and disease modifying effects of Galantamine (Reminyl®) (an MRI longitudinal study)  |
| Prof. Harald Hampel                     | Federal Office of Education and Research (BMBF)  | 119,600 | 2007 – 2009 | 2 | Kynurenine metabolites as diagnostic markers for major depression and Alzheimer's disease   |
| Prof. Harald Hampel                     | European Commission (EU), National Institutes of Health (NIH), Alzheimer's Association | 201,829 | 2007 – 2010 | 3 | The European Alzheimer's Disease Neuroimaging Initiative (E-ADNI): a study of the European Alzheimer's Disease Consortium for establishing of a large scale European network on Alzheimer's disease parallel to the American ADNI study |
| Prof. Harald Hampel, Bürger K           | European Commission (EU), FP6  | 19,740  | 2008 – 2010 | 2 | Beta amyloid oligomers in the early diagnosis of AD and as a marker for treatment response  |
| Prof. Harald Hampel, Bürger K et al     | German Brain Foundation (Hirnliga e.V.)  | 25,000  | 2007 – 2008 | 2 | Development and evaluation of a modular every day relevant cognitive intervention for patients with mild cognitive impairment (MCI) and mild Alzheimer's dementia (AD) using neuropsychologic and functional imaging techniques         |

|  |  |           |             |   |  |
|--|--|-----------|-------------|---|--|
| Prof. Harald Hampel, Shen Y, Sabbagh M, Hampel H | Alzheimer's Association Zenith Award   | 175,345   | 2007 – 2009 | 2 | Elevated BACE1 as a risk factor for progression from MCI to AD   |
| Prof. Harald Hampel, Teipel SJ, Ewers M          | Federal Office of Education and Research (BMBF), Competency Network on Dementia                            | 104,784   | 2007 – 2008 | 1 | Cooperative project Competency Network on Dementia   |
| Prof. Harald Hampel, Sydykova D et al            | Support program for science and teaching of the medical faculty of the Ludwig-Maximilian University Munich | 50,900    | 2007 – 2008 | 2 | Novel image processing techniques to better understand functional and fiber connectivity   |
| Prof. Harald Hampel, Sydykova D et al            | German Brain Foundation (Hirnliga e.V.)  | 25,000    | 2006 – 2008 | 2 | Structural and functional integrity of intracortical projections in patients with Alzheimer's disease a combination study with diffusion tensor imaging, MRI and EEG (DTI-integrity) |
| Prof. Harald Hampel, Maier W et al               | BMBF   | 102,890   | 2006 – 2007 | 1 | Development of Multivariate Statistics for the MRI-based Automated Analysis for the Diagnosis and Prediction of Alzheimer's Disease  |
| Prof. Michael Gill                               | Science Foundation Ireland   | 1,707,867 | 2004 – 2009 | 5 | Resource for Psychoses genomics Ireland  |
| Prof. Orla Hardiman                              | Health Research Board  | 1,700,000 | 2007-2012   | 5 | A population-based study of cognitive decline in ALS.  |
| Prof. Orla Hardiman                              | Health Research Board  | 350,000   | 2007-2010   | 3 | Replication and Development of Whole Genome Association Study in an Irish ALS population.  |
| Prof. Orla Hardiman                              | Muscular Dystrophy USA   | 342,000   | 2007-2009   | 2 | A Whole Genome Association Study of ALS in a population isolate  |
| Prof. Orla Hardiman                              | ALSA Initiation Grant:   | 137,129   | 2007-2009   | 2 | Population-based Epidemiology of Cognitive decline in ALS  |
| Prof. Orla Hardiman                              | IMNDA  | 100,000   | 2007 – 2009 | 2 | IMNDA Irish Register of ALS  |

|                       |  |           |             |   |   |
|-----------------------|--|-----------|-------------|---|---|
| Prof. Orla Hardiman   | IICN/Serono Neurology Fellowship         | 50,000    | 2008-2009   | 1 |   |
| Dr. Andrew Harkin     | Science Foundation Ireland               | 150,426   | 2004 – 2007 | 3 | Antidepressant efficacy following MDMA induced serotonin loss   |
| Dr. Andrew Harkin     | Health Research Board                    | 213,124   | 2006 – 2009 | 3 | Caffeine and MDMA is a lethal combination; a role for dopamine  |
| Dr. Andrew Harkin     | IRCSET                                   | 72,009    | 2006 – 2009 | 3 | Do antidepressants have neuroprotective properties?   |
| Dr. Andrew Harkin     | Health Research Board                    | 213,950   | 2008 – 2011 | 3 | Neuronal Nitric Oxide synthase; A novel target for antidepressant activity  |
| Dr. Conor Houghton    | James S McDonnell Foundation             | 600,000   | 2010 – 2016 |   | Mathematical Neuroscience   |
| Prof. Peter Humphries | Health Research Board                    | 750,000   | 2002 – 2007 | 5 | Towards therapeutic intervention at the genetic level in degenerative diseases of the retina.                                   |
| Prof. Peter Humphries | Science Foundation Ireland.              | 970,297   | 2003 – 2008 | 5 | Exploration of molecular pathology and molecular therapeutics for inherited retinal degenerations.                              |
| Prof. Peter Humphries | Higher Education Authority (Cycle 3).    | 471,905   | 2003 – 2006 | 3 | Exploration of therapeutic approaches for RP based on modulation of photoreceptor apoptosis.                                    |
| Prof. Peter Humphries | The British Retinitis Pigmentosa Society | 162,854   | 2003 – 2006 | 3 | Validation in mice of transgenic technologies based on RNA interference: relevance to gene silencing in retinopathies research. |
| Prof. Peter Humphries | Debra-Ireland                            | 171,350   | 2006 – 2007 | 1 | Exploration of therapeutic approaches for epidermolysis bullosa.  |
| Prof. Peter Humphries | Science Foundation Ireland               | 1,326,554 | 2004 – 2007 | 3 | Irish Centre for Applied Neurotherapeutics.   |
| Prof. Peter Humphries | Science Foundation Ireland.              | 970,297   | 2003 – 2008 | 5 | Exploration of molecular pathology and molecular therapeutics for inherited retinal degenerations.                              |

|                                 |  |         |             |   |   |
|---------------------------------|--|---------|-------------|---|---|
| Prof. Peter Humphries           | Fighting Blindness Ireland.                              | 180,000 | 2003 – 2006 | 3 | Exploration of therapeutic approaches for RP based on modulation of photoreceptor apoptosis.  |
| Dr. Aine Kelly                  | Science Foundation Ireland (administered through IRCSET) | 175,000 | 2004 – 2007 | 3 | Molecular/cellular  |
| Dr. Aine Kelly                  | Health Research Board                                    | 135,000 | 2004 – 2007 | 3 | Molecular/cellular  |
| Dr. Aine Kelly                  | IRCSET   | 57,150  | 2005 – 2006 | 1 | Molecular/cellular  |
| Dr. Julie Kelly                 | Health Research Board                                    | 238,703 | 2005 – 2008 | 3 | Furthering the development of TRH-DE inhibitors – toward a novel therapeutic strategy for CNS disorders   |
| Dr. Julie Kelly                 | Enterprise Ireland                                       | 85,025  | 2006 – 2007 | 1 | Parenteral delivery system for first-in-class compound with potential therapeutic application in CNS disorders                                  |
| Dr. Julie Kelly/Dr. Jane Farrar | Science Foundation Ireland                               | 165,000 | 2005 – 2008 | 3 | Exploration of methods to provide sustained expression of TRH peptide in a target tissue and investigation of neuroprotective properties of TRH |
| Dr. Julie Kelly                 | Enterprise Ireland CFTD/2006/12 2:                       | 392,415 | 2007-2009   | 2 | Development of a Novel Compound for treating Neurological Disorders.  |
| Juan Pablo Labrador             | SFI (07/IN.1/B913)                                       | 913,860 | 2007 – 2011 | 4 | “Transcriptional Programming of Motor Axon Guidance   |
| Juan Pablo Labrador             | TCD Start-up Grant                                       | 12,615  | 2007 – 2008 | 1 |   |
| Juan Pablo Labrador             | SFI RFP 2008 (08/RFP/NSC1 617)                           | 206,515 | 2008 – 2011 | 3 | Progammig Motoneuron Guidance   |
| Juan Pablo Labrador             | Higher Education Authority                               | 15,000  | 2007        | 1 | Higher Education Authority Equipment Call 2007  |

|   |  |            |             |    |   |
|---|--|------------|-------------|----|---|
| Juan Pablo Labrador   | SFI Research Frontiers Programm 2008: (08/RFP/NSC1 617): €206,515. Principal Investigator. |            | 2008        | 1  | Progammig Motoneuron Guidance   |
| Juan Pablo Labrador   | DFG  | 70,000     | 2008        | 1  | Postdoctoral fellowship   |
| Juan Pablo Labrador   | IRCSET   | 93,300     | 2007 – 2009 | 2  | Postdoctoral fellowship   |
| Prof. Brian Lawlor/<br>Prof. Rose-Anne Kenny/Prof. Michael Rowan    | Health Research Board  | 1,500,000  | 2006 – 2011 | 5  | Neurocardiovascular influences on cognitive functioning: basic and clinical mechanisms                    |
| Prof. Rose-Anne Kenny/Prof. Brian Lawlor                            | Roskamp Institute, Florida   | 850,000    | 2006 – 2008 | 2  | An open label evaluation of the safety and efficacy of nivaldipine in mild to moderate Alzheimers disease |
| Prof. Rose-Anne Kenny/Prof. Brian Lawlor                            | Intel/IDA TRIL: Social Connection  | 1,756,000  | 2006 – 2009 | 3  | Using technology to enhance social connection and health of older people                                  |
| Prof RA Kenny/Dr. Terry Dishongh/Prof Fiona Newell                  | Intel/IDA TRIL: Social Connection  | 2,395,000  | 2007- 2010  | 3  | Using technology to enhance social connection and health of older people TRIL: Falls                      |
| Prof. Brian Lawlor/Prof. Ian Robertson and Prof. Roseanne Kenny     | GSK Collaborative Research in Alzheimer's disease  | 6,390,000  | 2007- 2011  | 4  | Novel clinical pharmacodynamic endpoints  |
| Prof R Kalaria/ProfRose Anne Kenny                                  | NIH Grant  | 208,000    | 2006- 2008  | 2  | Longitudinal Neuropathological series of a stroke cohort  |
| Prof. Rose-Anne Kenny   | Atlantic Philanthropies & Dept. of Health & Children                                       | 5,000,000  | 2006 – 2016 | 10 | TILDA (The Irish Longitudinal Study on Ageing)  |
| Dr George Savva PI, Prof. Rose-Anne Kenny                           | CARDI  | 18,732     | 2010 - 2011 | 1  | Secondary analysis of existing datasets examining multimorbidity and disability in Ireland.               |
| Prof. Marina Lynch, Prof Shane O'Mara (Lead PI), Prof Ian Robertson | GSK Collaborative Research in Alzheimer's disease  | 14,615,230 | 2007 – 2012 | 5  | Translational research accelerating the development of novel therapies for Alzheimer's Disease            |

|   |  |           |             |   |   |
|---|--|-----------|-------------|---|---|
| Prof. Marina Lynch                      | Vasogen Ireland  | 162,000   | 2004 – 2007 | 3 | Is the Vasogen preparation VP025 capable of reversing A $\beta$ -induced changes in the hippocampus?                              |
| Prof. Marina Lynch                      | Science Foundation Ireland                                 | 951,027   | 2004 – 2008 | 4 | Analysis of the mechanism underlying age-related impairments in synaptic function.  |
| Prof. Marina Lynch/TCIN colleagues      | Health Research Board                                      | 999,460   | 2004 – 2012 | 8 | From basic neuroscience to clinical applications: an integrated PhD programme   |
| Prof. Marina Lynch                      | Health Research Board                                      | 193,363   | 2005        | 1 | Equipment grant   |
| Prof. Marina Lynch/TCIN colleagues      | Health Research Board                                      | 1,000,000 | 2004 – 2008 | 4 | From basic neuroscience to clinical applications: an integrated PhD programme. Renewal grant.                                     |
| Prof. Marina Lynch                      | Foundation Jerome Lejeune                                  | 50,000    | 2008 – 2009 | 1 | Human umbilical cord blood stem cell-based tissue engineering – novel therapeutic tools for restoration of damaged neural tissue  |
| Prof. Marina Lynch                      | Amarin UK  | 184,000   | 2009 – 2010 | 1 | Comparative studies of the anti-inflammatory effects of polyunsaturated fatty acids   |
| Prof. Marina Lynch                      | EU   | 183,100   | 2005 – 2009 | 2 | From cell-cell recognition to memory formation. New strategies for the treatment of dysfunctional plasticity, learning and memory |
| Prof. Marina Lynch/Prof. Kingston Mills | Science Foundation Ireland Annual Overhead Investment Plan | 160,000   | 2005 – 2007 | 2 | A study of the mechanisms underlying the inhibitory effects of interleukin-1 on synaptic transmission in rat hippocampus          |
| Prof. Marina Lynch                      | Health Research Board                                      | 186,658   | 2006 – 2009 | 4 | Do atorvastatin and/or the immunomodulatory molecule, FHA, act as neuroprotective agents in the aged rat brain?                   |
| Prof. Marina Lynch                      | Science Foundation Ireland                                 | 1,250,000 | 2008 – 2012 | 4 | Role of inflammation in age-related neurodegeneration   |

|   |  |           |             |   |   |
|---|--|-----------|-------------|---|---|
| Dr. Jim Meaney  | Health Research Board                    | 4,000,000 | 2005 – 2010 | 5 | Proposal for a National Centre for Advanced Medical Imaging   |
| Prof. Declan McLoughlin                                   | Health Research Board                    | 150,000   | 2010 – 2012 | 2 | Clinical Training Fellowship (Dr Ross Dunn) Clinical genetic and peripheral markers predicting outcome after ECT for severe depression                          |
| Prof. Declan McLoughlin, Craig Morgan, Paul Fearon (Lead) | Health Research Board /MRCG              | 300,000   | 2010 – 2013 | 3 | Measuring Quality of Care in an Irish Mental Health Service Context.  |
| Prof. Declan McLoughlin/Prof Tom Connor                   | TCIN Translational Neuroscience award    | 70,000    | 2009 – 2012 | 3 | A role for activation of the innate inflammatory response and the kynurenine pathway in the pathogenesis of depression and in the therapeutic response to ECT.  |
| Prof. Declan McLoughlin                                   | Health Research Board                    | 1,481,484 | 2007 – 2012 | 5 | <i>The EFFECT-Dep Study</i> : enhancing the effectiveness of electroconvulsive therapy in severe depression and understanding its molecular mechanism of action |
| Prof. Declan McLoughlin                                   | Alzheimer's Research Trust Project Grant | 215,662   | 2007-2010   | 3 | Fe65:Fe65L2 double knockout mice and APP processing   |
| Prof. Declan McLoughlin                                   | Wellcome Trust                           | 833,643   | 2006-2011   | 5 | The X11 adaptor proteins and Alzheimer's disease  |
| Prof. Declan McLoughlin                                   | Alzheimer's Society Project Grant        | 198,000   | 2006-2009   | 3 | <i>In vivo</i> analysis of the Fe65L2 protein in health and Alzheimer's disease   |
| Prof. Kingston Mills                                      | Science Foundation Ireland               | 6,500,000 | 2001 – 2006 | 5 | Pathogen-derived immunomodulatory molecules – future therapeutics and vaccines  |
| Prof. Kingston Mills                                      | EU 6th Framework Programme               | 350,000   | 2003 – 2008 | 5 | Mucosal Vaccines for Poverty Related Diseases (MUVAPRED). FP6-2002-LIFESCIHEALTH-2.3., Proposal No 503240   |
| Prof. Kingston Mills                                      | Health Research                          | 209,491   | 2005 – 2008 | 3 | 'Regulation of T cell responses in immunity   |

|   |  |         |             |   |   |
|---|--|---------|-------------|---|---|
|   | Board  |         |             |   | to Bordetella pertussis’.   |
| Prof. Kingston Mills, Prof Marina Lynch | TCD AOIP Collaborative PhD studentship                                       | 120,000 | 2005 – 2009 | 4 | ‘Role of T cells in the pathogenesis and prevention of the inflammatory and neurodegenerative changes associated with Alzheimer’s disease’. Collaboration with Prof. Marina Lynch. Student stipend and consumable costs for 3 years |
| Prof. Kingston Mills                    | TCD AOIP Collaborative PhD studentship                                       | 120,000 | 2005 – 2008 | 3 | ‘A role for the anti-inflammatory cytokine IL-10 as a mediator of stress-induced immunosuppression’. Collaboration with Dr. Thomas Connor, Physiology and TCIN. Student stipend and consumable costs for 3 years                    |
| Prof. Kingston Mills                    | Enterprise Ireland, Innovation Partnership, TCD and Opsona Therapeutics Ltd. | 372,704 | 2005 – 2007 | 2 | ‘The evaluation of immunomodulators in ex-vivo models of cell based therapies and in the enhancement of efficacy of marketed biologicals’.  |
| Prof. Kingston Mills                    | Enterprise Ireland   | 88,718  | 2005 – 2006 | 1 | ‘Evaluation of tracheal cytotoxin as an immunosuppressive drug’.  |
| Prof. Kingston Mills                    | Science Foundation Ireland   | 149,264 | 2006 – 2009 | 3 | ‘Regulation of pathogenic T cells in multiple sclerosis’.   |
| Prof. Kingston Mills                    | EU-FP7-HEALTH-2007-A   | 488,016 | 2008 – 2011 | 3 | ‘CP collaborative project. Nasal Pandemic Influenza Vaccine (NASPANVAC)’  |
| Dr. Kevin Mitchell                      | Health Research Board  | 165,000 | 2003 – 2006 | 3 | “The role of the transmembrane semaphoring Sema6A in axon guidance in the mammalian brain”.   |
| Dr. Kevin Mitchell                      | Health Research Board  | 165,000 | 2004 – 2007 | 3 | “A multidisciplinary study in the Irish population of the phenotypic characteristics and familiarity of   |

|  |   |            |             |   |   |
|--|---|------------|-------------|---|---|
|  |   |            |             |   | synaesthesia”.  |
| Dr. Kevin Mitchell                       | Wellcome Trust  | 334,516    | 2005 – 2008 | 3 | “A comparative functional genomic screen for novel axon guidance molecules in fly and mouse”.   |
| Dr. Kevin Mitchell                       | EMBO YIP  | 45,000     | 2005 – 2008 | 3 | Genetics of brain wiring  |
| Prof. Fiona Newell/ Prof. RoseAnne Kenny | Intel/IDA programme grant TRIL                                | 400,000    | 2007 – 2011 | 4 | Technology research for independent living (TRIL): Perceptual Function  |
| Prof. Fiona Newell                       | Science Foundation Ireland                                    | 2,800,000  | 2007 – 2011 | 5 | Metropolis: Supercrowds for multisensory urban simulations  |
| Dr. Fiona Newell                         | EU-IST  | 360,000    | 2006 – 2009 | 3 | Measuring the perception of naturalness   |
| Dr. Fiona Newell                         | Marie Curie, ToK  | 200,000    | 2006 – 2010 | 4 | Cognitive neuroscience  |
| Dr. Fiona Newell                         | IRCSET PG<br>TCD studentship                                  | 60,000     | 2004 – 2007 | 3 | Genotype and phenotype correlates of synaesthesia   |
| Dr. Fiona Newell                         | IRCHSS post doctoral student                                  | 80,000     | 2005 – 2007 | 3 | Investigating the binding problem across the senses   |
| Dr. Fiona Newell                         | TCD Research Capacity   | 60,000     | 2006        | 1 | EEG equipment   |
| Dr. Fiona Newell                         | TCD Psychology studentship                                    | 60,000     | 2006 – 2009 | 3 | The role of motion in object recognition  |
| Prof. John O'Doherty                     | SFI   | 983,520    | 2008 – 2012 | 4 | Fractionality of reward based decision making   |
| Prof. Shane O'Mara                       | GlaxoSmithKline/TCIN Research Consortium on Neurodegeneration | 14,615,230 | 2007 – 2011 | 3 | The focus of the new TCIN/GSK research consortium (2007-2012) is on diseases associated with brain ageing (especially Alzheimer's Disease). |
| Prof. Shane O'Mara                       | Wellcome Trust  | 440,000    | 2010-2013   | 3 | Cellular substrates supporting the mnemonic functions of Papez' circuit   |
| Prof. Shane O'Mara                       | IRCSET  | 100,000    | 2010-2012   | 2 | Plasticity of Synaptic Responses In vivo  |
| Prof Des O'Neill, F Horgan, M Wiley RCSI | Irish Heart Foundation  | 100,000    | 2010-2011   | 1 | Cost of Stroke in Ireland   |
| Prof Des O'Neill, H.Moss                 | Arts Council  | 25,000     | 2010 - 2011 | 1 | Music and stroke  |

|  |   |           |             |   |  |
|--|---|-----------|-------------|---|--|
| Prof. Mani Ramaswami   | US National Institute of Health                               | 1,380,000 | 2003 – 2008 | 5 | Cellular function and regulation of Fos and Jun  |
| Prof. Mani Ramaswami   | Science Foundation Ireland                                    | 3,005,626 | 2005 – 2009 | 4 | Role of synaptic signalling in brain function  |
| Prof. Mani Ramaswami   | Wellcome Trust  | 300,000   | 2006 – 2008 | 2 | Synapse assembly and function  |
| Prof. Mani Ramaswami   | Science Foundation Ireland                                    | 3,139,802 | 2007 – 2012 | 5 | Genetic analysis of synaptic signalling components in Drosophila and their roles in circuit and behavioural plasticity |
| Prof. Mani Ramaswami, Dr. Kristina Foltenyi  | IRCSET Post Doctoral  | 100,000   | 2008 – 2010 | 2 | Postdoc fellowship   |
| Prof. Mani Ramaswami, Mr John Lee  | Ureka Studentship   | 5,600     | 2008        | 1 | UREKA Studentship for Mr John Lee  |
| Prof. Mani Ramaswami, Prof Veronica Rodrigues  | Department of Biotechnology Grant of the Government of India. | 130,000   | 2008 – 2011 | 3 | Circuit mechanisms of short and long-term olfactory plasticity.  |
| Prof. Richard Reilly   | Science Foundation Ireland                                    | 249,000   | 2009 – 2013 | 4 | Multisensory Integration: A high-density EEG approach using ecologically valid stimuli." 09/RFP/NES2382                |
| Prof. Richard Reilly   | HEA/PRTL1-5   | 5,600,000 | 2010 – 2014 | 4 | Graduate Programme in Engineering.   |
| Prof. Richard Reilly (Co PI), Prof. Ian Robertson (PI)                                   | IDA/Intel, www.trilcentre.org                                 | 160,000   | 2006 – 2009 | 3 | Effects of Ageing on Cognitive Function  |
| Prof. Richard Reilly (PI), Professor Richard Costello (Co PI)                            | Enterprise Ireland  | 265,000   | 2005 – 2008 | 3 | Signal Processing Algorithms for use in eHealthcare Applications   |
| Prof. Richard Reilly, Dr Jogin Thakore (PI), Royal College of Surgeons in Ireland as PI. | Enterprise Ireland  | 25,000    | 2008 – 2009 | 1 | Alcohol Intake: An acoustic-based detection system Telephone-based Alcohol Detection System                            |
| Prof. Richard Reilly, Professor Brian O'Connell (PI)                                     | Enterprise Ireland  | 10,000    | 2008 – 2009 | 1 | SMART SPLINT – Superior Monitoring & Longitudinal Analysis on Nocturnal Tooth-grinding                                 |

|  |   |           |             |   |   |
|--|---|-----------|-------------|---|---|
| Prof. Richard Reilly (PI), Dr Dermot Power<br>Mater Hospital   | Mater Hospital  | 10,000    | 2008-2009   | 1 | Seed funding for research into quantitative analysis of clinical practice.  |
| Prof. Richard Reilly (PI), Prof Richard Costello, RCSI/Beaumont Hospital                                       | Beaumont Hospital   | 10,000    | 2008-2009   | 1 | Signal processing and engineering development for asthma compliance   |
| Prof. Richard Reilly (Co PI), Dr Robert Whelan, Professor Michael Hutchinson, St Vincent's University Hospital | Enterprise Ireland  | 98,678    | 2008-2009   | 1 | Movement disorder Objective Verification by EEG (MOVE): A tool for movement disorder diagnosis, classification and monitoring |
| Prof. Ian Robertson  | Science Foundation Ireland                                    | 980,000   | 2004 – 2008 | 4 | Cognitive neuroscience and cognitive genomics of ADHD   |
| Prof. Ian Robertson/Dr. Katherine Johnson  | Health Research Board   | 73,000    | 2006 – 2009 | 3 | ADHD and movement control   |
| Prof. Ian Robertson  | IRCSET  | 72,000    | 2007 – 2010 | 3 | Postgraduate Award, Sabina Brennan  |
| Prof. Ian Robertson  | IRCSET  | 72,000    | 2009 – 2012 | 3 | Postgraduate Award, Peter Murphy  |
| Prof. Ian Robertson  | Intel/IDA programme grant TRIL                                | 1,440,000 | 2007 – 2010 | 3 | Technology Research for Independent Living  |
| Prof. Ian Robertson  | Health Research Board   | 277,198   | 2010 – 2013 | 3 | Neurorehab attention in ADHD, A biofeedback-based training programme  |
| Prof. Ian Robertson  | IRCHSS/ESF Eurocore grant                                     | 240,000   | 2007 – 2011 | 3 | The Long and Short Term Dynamics of Attention   |
| Prof. Ian Robertson  | Atlantic Philanthropies                                       | 2,500,000 | 2009 – 2014 | 5 | Neuroenhancement for Inequalities in Elder Lives  |
| Prof. Ian Robertson  | GlaxoSmithKline/TCIN Research Consortium on Neurodegeneration | 6,390,000 | 2007 – 2012 | 5 | TCIN/GSK research consortium (2007-2012) is focused on diseases associated with brain especially Alzheimers Disease.          |
| Prof. Michael Rowan  | Science Foundations Ireland                                   | 1,000,000 | 2002 – 2006 | 4 | Stress, Amyloid, Synaptic plasticity  |
| Prof. Michael Rowan  | EU  | 150,000   | 2004 – 2006 | 2 | Functional Proteomics, Depression models  |
| Prof. Michael Rowan  | IRCSET  | 75,000    | 2006 – 2008 | 2 | Human cortical plasticity   |

|                                    |                             |         |             |   |  |
|------------------------------------|-----------------------------|---------|-------------|---|--|
| Dr. Jogin Thakore/Dr. Sherlyn Yeap | Health Research Board       | 171,358 | 2006 – 2009 | 3 | “The search for an endophenotypic marker in schizophrenia” |
| Dr Daniela Tropea                  | EU-Marie Curie action (IRG) | 100,000 | 2010 – 2012 | 2 | Molecular mechanisms in Rett Syndrome.                     |
| Dr Daniel Ulrich                   | Health Research Board       | 300,000 | 2008 – 2011 | 3 | Sleep spindles and memory formation.                       |

## **PROMOTIONS AND AWARDS**

### **PROMOTIONS**

**1. Professor**

Shane O'Mara

**2. Associate Professor**

Tom Connor, Aiden Corvin

**3. Senior Lecturer**

Andrew Harkin

### **AWARDS**

*James S. McDonnell Scholar Award in Neuroscience 2010*

Dr Conor Houghton

## INVITED PRESENTATIONS

### **PROF RUTH BYRNE**

|   |         |
|---|---------|
| Keynote Talk, Cognitive Science Society of Germany Annual Conference, Dresden, Germany  | Sept-08 |
| Invited Symposium Convener and Chair, Symposium on Counterfactual Thinking, International Conference on Thinking, Venice, Italy | Aug-08  |

### **PROF VERONICA CAMPBELL**

|   |        |
|---|--------|
| British Neuroscience Association; Symposium on Cannabinoids | Apr-07 |
| School of Biomedical Sciences, University of Nottingham     | Apr-07 |
| 3rd European Cannabinoid Workshop                           | Apr-07 |

### **DR TOM CONNOR**

|   |        |
|---|--------|
| School of Biotechnology, Dublin City University   | Oct-07 |
| St. Ita's Hospital Portrane   | Feb-07 |
| Anti-inflammatory actions of antidepressants: A new indication for an old class of drugs? | May-08 |
| B-cells 2008: Complexity, integration and translation, Barcelona                          |        |
| 25th CINP Congress, Munich,   | Jul-08 |

### **DR COLM CUNNINGHAM**

|  |         |
|--|---------|
| Annual meeting of the Psychoneuroimmunology Research Society, Arcachon, France                           | May-07  |
| The annual meeting of the European Delirium Association, Limerick  | Nov-07  |
| Invited speaker at the Cajal Institute, Madrid   | Mar-08  |
| Selected speaker at the International Society of Neuroimmunology, Neuroimmunology Symposium, UCD, Dublin | Mar-08  |
| Invited speaker at the Queens Medical Research Institute, University of Edinburgh                        | Apr-08  |
| Invited speaker at the University of Southampton   | July-08 |
| Invited speaker at the Annual Meeting of the European Delirium Association, Helsinki                     | Oct-08  |

### **DR GAVIN DAVEY**

|  |      |
|--|------|
| REMEDI, National University of Galway                            | 2007 |
| University of Siena, Italy                                       | 2007 |
| University of Perugia, Italy                                     | 2007 |
| European Society of Neurochemistry conference lecture, Salamanca | 2007 |

### **DR GARY DONOHUE**

|   |        |
|---|--------|
| Neuroscience and Mental Health RRG Scientific Meeting, Queen's University Belfast | May-07 |
| International society of Biological psychiatry, San Diego                         | May-07 |

### **DR JANE FARRAR**

|  |        |
|--|--------|
| preARVO Vision Research Conference                         | May-07 |
| Irish Society for Gene and Cell Therapy                    | May-07 |
| EURETINA 7 <sup>th</sup> congress – Monte Carlo            | May-07 |
| University Eye Hospital – Tubingen Germany                 | Jun-07 |
| Royal College of Surgeons in Ireland - Marie Curie Seminar | Oct-07 |

### **PROFESSOR HUGH GARAVAN**

|   |         |
|---|---------|
| Control and Motivation Symposium, University of Oxford, UK          | June-10 |
| Department of Psychiatry, Albert Einstein University, New York, USA | July-10 |
| University Medical Center Hamburg-Eppendorf, Germany                | Nov-10  |

|  |        |
|--|--------|
| The Mind Research Network, University of New Mexico, USA           | Dec-09 |
| Psychology Department, University of Vermont, USA.                 | Nov-09 |
| Montreal Neurological Institute's Killam lecture series, Montreal. | Nov-09 |
| National Institute on Drug Abuse Symposium, Washington DC, USA     | Oct-09 |

**PROFESSOR HARALD HAMPEL**

|   |         |
|---|---------|
| IPA European Meeting in Association with Royal College of Psychiatrists, Dublin, Ireland                                    | Apr-08  |
| Hirnliga and GE (General Electric Healthcare) Expert Meeting, Berlin, Germany   | Apr-08  |
| Symposium on Alzheimer Research, French Embassy, Berlin, Germany  | May-08  |
| European School for Scientific and Regulatory Assessment of New Medicines and European Medicines Agency, Rome, Italy        | May-08  |
| Psychiatry Colloquium/ Psychiatry Postgraduate Programme, University of Bangor, Wales, UK                                   | May-08  |
| Psychopharmacology Course for Psychiatrists, RCPI, Dublin, Ireland  | June-08 |
| SERPA – South Eastern Regional Psychiatric Association, Kilkenny, Ireland   | June-08 |
| 10th Anniversary of AMNCH, Tallaght, Dublin, Ireland  | June-08 |
| Neuroscience Seminar Series, Trinity College Institute of Neuroscience  | June-08 |
| XXVI. CINF Collegium Internationale Neuro-Psychopharmacologicum-50, Munich Germany  | July-08 |
| -Perspectives of biological and imaging markers in AD   |         |
| XXVI. CINF Collegium Internationale Neuro-Psychopharmacologicum-50, Munich Germany  | July-08 |
| -Co-Chair of Symposium on Neurochemical and Imaging biomarkers for early diagnosis and mapping of disease progression in AD |         |
| Alzheimer's Association's Intl. Conference on Alzheimer's Disease (ICAD) Chicago, USA                                       | July-08 |
| -Alteration of beta secretase (BACE1) functional candidate biomarkers...  |         |

**PROFESSOR ORLA HARDIMAN**

|   |        |
|---|--------|
| European Neurological Society, Rhodes; Recent Advances in ALS Diagnostics       | Jun-07 |
| Trinity College Policy Institute; Perspectives in the Public Health System      | Jun-07 |
| MacGill Summer School, Donegal; Priorities in Health for the New Government     | Jul-07 |
| Society of Immunology, Dublin; Immune Disorder in the Peripheral Nervous System | Oct-07 |

**DR ANDREW HARKIN**

|  |         |
|--|---------|
| Psychoneuroimmunology of animal models of stress and depression  | Feb-10  |
| Organizers –World Psychiatric Association Section on Immunology and Psychiatry, Ludwig-Maximilians University, Munich. |         |
| Danish Society for Biological Psychiatry, University of Aarhus, Denmark.   | July-08 |

**PROFESSOR PETER HUMPHRIES**

|  |        |
|--|--------|
| Fundacion Jimenez Diaz, Madrid. Progress in the development of genetically-based therapies for retinal degeneration. | Jun-07 |
|--|--------|

**DR AINE KELLY**

|                            |        |
|----------------------------|--------|
| Queen's University Belfast | Feb-07 |
|----------------------------|--------|

**DR JULIE KELLY**

|   |        |
|---|--------|
| EHRlich II, 2nd World Conference on Magic Bullets held in Nürnberg, Germany | Oct-08 |
| -Designing Drugs for Neurological Disorders: TRH-based Neurotherapeutics    |        |

**PROF ROSE ANNE KENNY**

|  |        |
|--|--------|
| Royal Institute of the Architects of Ireland Healthcare & Design Committee | Dec-10 |
| Royal College of Physicians London   | Oct-10 |
| Irish Osteoporosis Society   | Oct-10 |
| Heart Rhythm Congress – Birmingham   | Oct-10 |

|   |         |
|---|---------|
| RAND Corporation, California, USA   | July-10 |
| British Geriatric Society – Cardiovascular Section  | July-10 |
| Cardiostim Conference – Nice, France  | June-10 |
| Royal Society of Medicine – The Alex Comfort Lecture  | May-10  |
| Irish Bioengineering Conference – Keynote Address, Dublin                                     | Jan-10  |
| <b>DR CHRISTIAN KERSKENS</b>  |         |
| Conference on Bioengineering, Royal Academy of Medicine in Ireland, Sligo, Ireland            | 2008    |
| European Society of Biomechanics, Lucerne Switzerland.  | 2008    |
| <b>PROFESSOR MARINA LYNCH</b>   |         |
| The Schmitt Programme for Integrative Brain Research, Rochester, USA                          | Oct-10  |
| 17th Annual Psychoneuroimmunology Research Society, Dublin                                    | May-10  |
| University of Michigan, Michigan, USA   | Oct-08  |
| -NIA-funded Workshop "Cellular & Molecular Mechanisms of Cognitive Aging."                    |         |
| British Pharmacological Society, London, UK   | Sept-08 |
| <b>PROF DECLAN McLOUGHLIN</b>   |         |
| Oxford University; Dept of Psychiatry External Speaker Seminar Series                         | Feb-07  |
| Institute of Molecular Medicine, St James's Hospital, Dublin; External Speaker Seminar Series | Feb-07  |
| Royal Society of Medicine; Key Advance in the Management of Depression, London                | Jul-07  |
| Alzheimer's Society; Quality Research in Dementia Annual Meeting                              | Sep-07  |
| Queen's University Belfast; Neuroscience Research Group Annual Meeting                        | Oct-07  |
| <b>DR CONNAIL McCRORY</b>   |         |
| Neuromodulation Society of UK & Ireland, Leeds, UK  | Nov-10  |
| <b>PROF KINGSTON MILLS</b>  |         |
| MIVAC & MUVAPRED International meeting on Mucosal Immunology, Gotenburg Sweden                | Jan-08  |
| Vaccination Immunology: prevention and Beyond, NVVI Lunterern, The Netherlands                | Apr-08  |
| 6th International Cancer Conference, Dublin Castle, Ireland                                   | May-08  |
| Emerging Issues in infectious diseases, IDSI Inaugural annual scientific meeting, Dublin      | Jun-08  |

**DR KEVIN MITCHELL**

|   |        |
|---|--------|
| EMBL, Heidelberg; EMBO Young Investigator meeting                         | Jun-07 |
| European Life Sciences Organisation; Symposium on Neural Circuit Assembly | Sep-07 |
| EMBL, Heidelberg; EMBO PhD course   | Sep-07 |
| University Medical Center Utrecht; Institute of Neuroscience              | Dec-07 |
| Abbaye des vaux de Cernay; Semaphorin Function and Mechanisms of Action   | May-08 |

**DR FIONA NEWELL**

|   |         |
|---|---------|
| British Neuroscience Association Meeting, Harrogate, UK   | Apr-07  |
| Lincoln University, UK: Invited seminar speaker   | 2007    |
| XXIX International Congress of Psychology, Berlin, Germany<br>-'The effect of non-informative visual information on haptic spatial scenes'. | July-08 |

**PROFESSOR SHANE O'MARA**

|  |        |
|--|--------|
| Lecture at 5th Federation of Asian & Oceanic Neuroscience Societies Meeting, Lucknow, India.                         | Oct-10 |
| Society for Neuroscience Bangalore Chapter, National Institute for Mental Health and Neuroscience, Bangalore, India. | Oct-10 |

**PROFESSOR DES O'NEILL**

|  |        |
|--|--------|
| British Geriatrics Society Scientific Congress, Brighton, UK | Nov-10 |
| Turkish Geriatrics Society, Ismir Turkey                     | Apr-10 |
| World Demographic Forum, St Gallen, Switzerland              | Aug-10 |
| European Academy of Medicine of Ageing, Sion Switzerland     | Jun-10 |
| Finnish Geriatric Medicine Society, Oulu, Finland            | Jan-10 |

**PROFESSOR MANI RAMASWAMI**

|  |      |
|--|------|
| RNA Granules Workshop. HHMI Headquarters, Chevy Chase, MD.                             | 2008 |
| From FMRP Biology to Clinical Trials, Banbury Centre, Cold Spring Harbor, USA.         | 2008 |
| Abdus Salaam Centre, Trieste, Italy. Workshop on Genes and the Development of Behavior | 2008 |
| HHMI/Janelia Farm Conference on Translation at the synapse, Maryland, USA              | 2008 |

**PROFESSOR IAN ROBERTSON**

|  |         |
|--|---------|
| Dept of Philosophy Workshop on Attention, University College London, UK        | Jan-10  |
| The Frontal Lobes 2010, University of Toronto, Canada                          | Mar-10  |
| Working Memory in Healthy and Pathological Ageing, University of Edinburgh, UK | Mar-10  |
| International Conference on Communication After Stroke, Mater Hospital, Dublin | May-10  |
| European Union Geriatric Medicine Society, Dublin                              | Sept-10 |
| International Workshop on TDCS, University of Brescia, Italy                   | Sept-10 |
| INTEL/EMEA Research and Innovation Conference, Leixlip, Co Kildare, Ireland    | Sept-10 |
| Neuropsychological Rehabilitation Conference, University of Padova, Italy      | Oct-10  |
| Festschrift for Prof Gino Pizzamiglio, University La Sapienza, Rome, Italy     | Oct-10  |
| Italian Society for Psychophysiology, Palermo, Italy                           | Nov-10  |

**PROFESSOR MICHAEL ROWAN**

|   |        |
|---|--------|
| IPSEN meeting, Paris; Synaptic function and Alzheimer's Disease | Mar-07 |
| Combined Life Sciences Meeting, Glasgow                         | Jul-07 |

**DR DANIEL ULRICH**

|  |         |
|--|---------|
| FENS Satellite Symposium, Geneva, Switzerland<br>-Sleep-related discharge patterns and synaptic plasticity | July-08 |
|--|---------|

Soc. Neurosci. Washington DC, USA  
-Differential impact of sleep-associated discharge patterns on synaptic plasticity

Nov-08

## EDUCATION & OUTREACH AT TCIN

TCIN introduced the first 4-year integrated PhD programme in Ireland in October 2004. It was funded by the Health Research Board and funding was continued to allow 3 additional cohorts of students. The final cohort of 5 students registered in October 2008. Due to the success of this programme, we intend to replace this programme with a programme commencing in Oct 2011.

International students comprise 36% of our PhD student register of 71 people, 18% of whom are from outside the EU; similarly over 20% of our MSc enrollment are from outside the EU.

The MSc in Neuroscience, a 1 year taught course was introduced in October 2006. Starting with just 12 students, we have expanded the intake due to increased demand. After a record 85 applications in June 2010, we currently have a 17-strong cohort of students in the 2010/2011 class. There were **23 graduates in 2010** and we wish them well in their future careers.

The MSc in Neuroscience is the only integrative Postgraduate course of its kind in the country. It draws together students from a variety of backgrounds including Life Sciences, Medical Sciences and Humanities. It builds on the strengths of individual students knowledge base and develops their skills in a range of specialities. Students leave this course skilled in both academic and clinical aspects of Neuroscience research, prepared to embrace the challenges of Neuroscience in academia, industry, in clinical settings and beyond.

We are pleased that one of our 2010 graduates, Matthew L. Baum chose to study with us after winning a Mitchell scholarship from the USA. He has gone on to win a Rhode scholarship to Oxford (Baliol) to pursue a D.Phil. in Public Health. Under the course director, Prof. Kumlesh K. Dev we are committed to attracting a diverse cohort of excellent students.

An undergraduate specialty (BA. Mod) in Neuroscience was introduced in Trinity College Dublin in 2002 with a quota of 10 students per annum. This quota increased to 20 students per annum in October 2006, and to a further 22 in October 2010. Twenty students graduated in June 2010; of these five were awarded first class honours and one Gold Medal Award (achieving a grade of 75% or more). There are currently 22 Junior Sophister and 20 Senior Sophister students. The course directors are Dr. Gavin Davey and Dr. Daniel Ulrich.

### **MSc graduations October 2010**

Matthew Baum

Ailsa Byrne

Sinead Cullen

Thomas Campbell

Bernadette Drennan

Mohammad Fakhraldeen

Jamie Gallagher

Siobhan Hussey  
Sinead Kelly  
Aleksandra Kowalczyk  
Niamh McGarry  
Fiona Crowe  
Laoise Martin  
Grainne O'Dowd  
Oh Soyoung  
Elaine O'Loughlin  
Grainne O'Malley  
Bryony Treston  
Christina Prendergast  
Adam Pritchard  
Alan Slattery  
Keelan Smith  
Christopher Whelan

**PhD submissions 2010**

Joanna McHugh  
Iwona Pomianskova  
Baby Kamal Maloor  
Daniel Rogers  
Fionnula Cox  
Joanne Feeney  
Johannes Passecker  
Sabina Brennan

**University of Dublin Neuroscience Society (Neurosoc)**

The University of Dublin Neuroscience Society was set up in April 2008 and is Ireland's first university society for neuroscience. It was founded by a group of TCIN-based postgraduate students funded on the 4 year PhD programme. The aims of the society are to organise academic and social events for students and staff with an interest in neuroscience. Academic events includes hosting talks by prestigious national and international speakers, in association with TCIN, and holding public events on issues such as Alzheimer's Disease, Autism and Multiple Sclerosis. The society also caters for the social needs of its members; events include table quizzes, pub nights and fund-raising events. The society's Email address is: [neuroscience@csc.tcd.ie](mailto:neuroscience@csc.tcd.ie).

More information is available at Website: <http://neurosoc.csc.tcdlife.ie/>

**Neuroscience Seminar Series**

The Neuroscience seminar series, set up in January 2006, aims to provide a forum to facilitate transfer of knowledge and trigger discussion among researchers in different disciplines associated with TCIN. The purpose of the series is to foster the integrative approach to neuroscience research that TCIN was established to develop, as well as promote TCIN as an internationally competitive institute. The seminar topics cover all aspects of molecular, cellular, developmental and cognitive neuroscience as well as

neuroscience-related topics in disease, psychiatry, and genetics. Participants include researchers at all levels within TCIN and internationally-regarded external speakers. This series is co-ordinated and organised by the HRB-funded PhD students in collaboration with Dr Colm Cunningham.

### **Neuroscience Course Committee (BA Mod Degree)**

The Neuroscience moderatorship is an interfaculty degree programme comprised of modules from six Schools across three Faculties, consequently, a course committee is required in order to ensure effective running of this degree programme. The committee is comprised of the three academic members of staff that were employed specifically to teach on this degree programme (GD, DU, TC), the Director of Undergraduate Teaching and Learning in the School of Biochemistry and Immunology (as the Neuroscience degree is nominally affiliated to this School for administrative reasons), representatives from all other academic units that contribute to the degree programme, and the Academic and Outreach Officer in TCIN who has administrative oversight of the degree programme. The Academic and Outreach Officer will also act as student liaison and representative on the Committee.

Terms of reference: This committee will govern the effective running of the Neuroscience degree programme from both an academic and administrative perspective, and will report to the Course Director of TR071 (Science) via the TR071 course management committee. The membership of the Neuroscience degree course committee is to be included in the “Committees” section of the University Calendar.

Meetings: The committee will meet on the first and penultimate Thursday of each Semester.

The Neuroscience degree course committee comprises:

Dr. Gavin Davey (GD), Senior Lecturer in Neuroscience, Senior Sophister co-ordinator and Director, Neuroscience degree programme (Chair)

Dr. Daniel Ulrich (DU), Lecturer in Neuroscience & Junior Sophister co-ordinator

Prof. Thomas Connor (TC), Senior Lecturer in Neuroscience

Dr. Clair Gardiner – Director of Undergraduate Teaching and Learning, School of Biochemistry and Immunology

Mr. Paul Glacken – Anatomy

Dr. Aine Kelly – Physiology

Dr. Kevin Mitchell – Genetics

Dr. Andrew Harkin – Pharmacy

Dr. Paula Murphy – Zoology

Prof. Shane O’Mara – Psychology

Ms. Gillian Roddie – Academic and Outreach Officer, TCIN

### **Extramural Course: 21st Century Brain**

In 2009, TCIN launched a new Extramural Course in Neuroscience, entitled 21st Century Brain. The course is an 18 week series of lectures (9 weeks per term) that is open to all members of the general public. The course lectures cover a variety of topics including

Alzheimer's Disease and MRI, Stem Cells, therapeutic neuro-modulation and neuroimmunology (among others) with each weeks' lecture being delivered by a TCIN PI. The course has been advertised locally in the Trinity College Extramural Handbook but due to the overwhelming success of the course it will be more widely publicised in coming years.

## MEETINGS

### **Meetings Held:**

The Annual Psychoneuroimmunology Conference (PNIRS) was held on 4<sup>th</sup> – 6<sup>th</sup> June in Trinity College, local organiser for this event was TCIN PI Prof. Tom Connor. This 350 delegate strong International conference is held outside the United States every three years and attracts many high profile researchers in the field on Neuroimmunology and Neuroinflammation.

International Brain Awareness Week took place from 8<sup>th</sup> to 12<sup>th</sup> March 2010. On Tuesday 9<sup>th</sup> March TCIN and the NAI (Neurologic Alliance of Ireland) co-hosted the annual Brain Awareness Week conference in the Science Gallery in Trinity College, entitled The Future for Neurological Conditions in Ireland: Innovations and Solutions. The aim of this conference was to join together health care specialists, researchers and advocacy groups involved in innovation services to highlight the progressive work being carried out in Neurological research and support services.

Professor Shane O'Mara opened conference proceedings and talks were provided by a number of high profile national and international speakers including Dr. Ian Regan of the European Brain Council, Hilary Davison, Acting Director of Guidance and Standards, NHS Quality Improvement Scotland and three of TCIN's own students and staff.

The final of Neurospeak was also held during Brain Awareness Week, with Donal Carney, 3<sup>rd</sup> year HRB PhD and Dr. Susan Byrne, 2nd Yr PhD, invited forward to speak at the TCD Science Speak competition. Dr. Byrne came third in the National Science Speak competition held in the RDS on April 27<sup>th</sup> 2010.

### **Planned Meetings:**

(TCIN) will be running a "Memory Lab" in the Science Gallery, Trinity College from the March 10-26, 2011. "Memory Lab" is aimed at the general public and is expected to be of great interest. Based on the success of our previous event 'Pay Attention' in Oct 08, we expect several thousand people of all ages to come through the lab. It will be possible to track participants through the experiments, and we expect to generate an unparalleled database on the human memory side.

An international conference organized by Dr Kevin Mitchell (TCIN) entitled "Wiring the Brain: Making connections" will be held on April 12-15th, 2011, Powerscourt, Co. Wicklow, Ireland.

A TCIN Symposium will be held on November 8, 2011 in the Lloyd building, Trinity College. A number of international and local guest speakers will be invited to speak on a broad range of neuroscience topics.

**Lecture Series:**

The TCIN-Neurosoc lecture series continues to draw excellent speakers and good attendences. The meting are primariliy held on Mondays at lunctime, though occassionally maybe held in the evening depending on the demand. The [program](#) 2010-2011 is available on the Neurosoc website.

## INDUSTRIAL COLLABORATIONS

**GSK:** Professor Shane O'Mara has formed an industrial collaboration with GSK, this collaboration also includes: Professors Rose-Anne Kenny, Brian Lawlor, Marina Lynch, Ian Robertson and Michael Rowan

Dr. Veronica Campbell has formed an industrial collaboration with **GW Pharmaceuticals**.

Dr Christian Kerskens has a collaborations with **Philips and Bruker BioSpin MRI Ltd**.

Prof. Peter Humphries has industry collaborations with **Wyeth Pharmaceuticals**.

Professor Marina Lynch has industry collaborations with **Opsona, Vasogen Ireland and Amarin**:

Dr Fiona Newell and Professor Hugh Garavan are currently collaborating with **Unilever PLC**.

Professors Rose-Anne Kenny, Brian Lawlor, Ian Robertson and Richard Reilly, together with PIs in other 3<sup>rd</sup> level institutes in Ireland are currently collaborating with **Intel**.

## PATENTS FILED

### **Professor Peter Humphries**

1. Allele suppression: Patent Reference. No. PCT-GB97-00574
2. UTR suppression & replacement: Patent Reference. No. PCT-GB96-02357
3. Wobble strategy: Patent Reference. No. PCT-GB97-00929
4. Methods and Reagents for Treating Diseases. No. PCT/GB/2005/000626.

### **Dr Julie Kelly**

1. Compounds that modulate TRH actions. (Irish Patent Application 2004/0669; PCT filed, October 3, 2005).
2. TRH-like peptide derivatives as inhibitors of the TRH-degrading ectoenzyme (Application number: PCT/IE01/00027; US 0030166944; Priority date, February 17, 2000)
3. Methods for modulating the levels and effects of TRH and TRH-related peptides (Irish Patent Application 2006/0253; Priority date: March 31, 2006.). With Dr GJ. Farrar.

### **Professor Marina Lynch**

1. Compositions and methods relating to the modulation of an immune-mediated response. Preliminary Irish Patent Application. Filed 21/09/2005 (with KHG Mills and C Costelloe.)
2. Methods and compounds for the treatment of cognitive dysfunction. UK patent application. Filed 13/04/2005. (with KHG Mills, B Keogh, C Costelloe.)
3. Treatment of Age-Related Memory Impairment (Filed 25/09/2004 (PCT); PCT/CA/2004/001750; Filed 9/07/2004 (US)10/888,343; Filed 29/10/2004 (Taiwan) 093133213 (all filed by Vasogen Ltd with Drs A Mandel and AE Bolton)

4. Multiple Sclerosis Treatment; Filed 14/09/2005 (Gulf Co-operation Council)GCC/P/2005/5165; Filed 15/09/2005 (Malta) 2983; Filed 14/09/2005 (PCT) PCT/EP2005/009994; Filed 14/09/2005 (Peru) 001065.2005; Filed 15/09/2005 (Taiwan) 094131868; Filed 14/09/2005 (US) 11/227,984; Filed 15/09/2005 (Uruguay) 29.119; Filed 15/09/2005 (Venezuela) 01884-2005 (all filed with Vasogen Ireland Ltd with Drs YM Nolan, A Mandel and AE Bolton).

**Professor Ian Robertson**

A test method for ADHD response (Irish Patent Application S2004/0235; Filed April 2, 2004)

## PUBLICATIONS

TCIN publishes in over 173 international journals in the broad field of Neuroscience and Behaviour. We have over 450 publication in the last 3 years with an average impact factor of 6.1; breaking this down further we find that 10% of our publications have an impact factor greater than 10 and 20% have an impact factor greater than 8.

### TCIN's publications analysis

| Rank | No of Pubs(3yr) | Abbr J Title         |
|------|-----------------|----------------------|
| 1    | 15              | NEUROBIOL AGING      |
| 2    | 12              | BIOL PSYCHIAT        |
| 3    | 12              | J NEUROSCI           |
| 4    | 11              | NEUROPSYCHOLOGIA     |
| 5    | 10              | NEUROSCI LETT        |
| 6    | 9               | BRAIN BEHAV IMMUN    |
| 7    | 9               | J NEUROL NEUROSUR PS |
| 8    | 9               | EUR J NEUROSCI       |
| 9    | 9               | PSYCHIAT RES         |
| 10   | 8               | BRAIN RES            |
| 11   | 7               | HUM MOL GENET        |
| 12   | 7               | SCHIZOPHR RES        |
| 13   | 7               | J NEUROCHEM          |
| 14   | 6               | BRIT MED J           |
| 15   | 6               | P NATL ACAD SCI USA  |
| 16   | 6               | BRAIN                |
| 17   | 6               | NEUROIMAGE           |
| 18   | 6               | INT J GERIATR PSYCH  |
| 19   | 5               | LANCET               |
| 20   | 5               | ARCH GEN PSYCHIAT    |
| 21   | 5               | NEUROPSYCHOPHARMACOL |
| 22   | 5               | J IMMUNOL            |
| 23   | 5               | J COGNITIVE NEUROSCI |
| 24   | 5               | J BIOL CHEM          |
| 25   | 5               | J AM GERIATR SOC     |
| 26   | 5               | J INT NEUROPSYCH SOC |
| 27   | 5               | BEHAV BRAIN RES      |
| 28   | 5               | AGE AGEING           |
| 29   | 5               | Q J EXP PSYCHOL      |
| 30   | 4               | STROKE               |
| 31   | 4               | HIPPOCAMPUS          |
| 32   | 4               | INT J NEUROPSYCHOPH  |
| 33   | 4               | J NEUROPHYSIOL       |
| 34   | 4               | NEUROPHARMACOLOGY    |
| 35   | 4               | NEUROSCIENCE         |
| 36   | 4               | EUR J HUM GENET      |
| 37   | 4               | EUR J PHARMACOL      |
| 38   | 3               | NAT GENET            |
| 39   | 3               | MOL PSYCHIATR        |
| 40   | 3               | CEREB CORTEX         |

| No of Pubs(3yr) | Abbr J Title        | 5-Year Impact | J Rank by IF | Cumulative % of pubs |
|-----------------|---------------------|---------------|--------------|----------------------|
| 2               | NEW ENGL J MED      | 49.91         | 1            | 0.44                 |
| 1               | NAT REV IMMUNOL     | 31.25         | 2            | 0.66                 |
| 1               | NAT MED             | 28.97         | 3            | 0.88                 |
| 5               | LANCET              | 27.26         | 4            | 1.99                 |
| 3               | NAT GENET           | 26.45         | 5            | 2.65                 |
| 2               | BEHAV BRAIN SCI     | 19.36         | 6            | 3.09                 |
| 2               | IMMUNITY            | 17.92         | 7            | 3.53                 |
| 5               | ARCH GEN PSYCHIAT   | 17.27         | 8            | 4.64                 |
| 1               | NAT NEUROSCI        | 16.83         | 9            | 4.86                 |
| 1               | J NATL CANCER I     | 16.03         | 10           | 5.08                 |
| 2               | NEURON              | 14.86         | 11           | 5.52                 |
| 2               | PLOS BIOL           | 14.66         | 12           | 5.96                 |
| 1               | TRENDS NEUROSCI     | 14.48         | 13           | 6.18                 |
| 1               | TRENDS COGN SCI     | 13.83         | 14           | 6.40                 |
| 2               | LANCET NEUROL       | 13.75         | 15           | 6.84                 |
| 1               | PROG NEUROBIOL      | 12.35         | 16           | 7.06                 |
| 3               | MOL PSYCHIATR       | 11.94         | 17           | 7.73                 |
| 1               | AM J HUM GENET      | 11.31         | 18           | 7.95                 |
| 2               | AM J PSYCHIAT       | 10.81         | 19           | 8.39                 |
| 6               | BRIT MED J          | 10.67         | 20           | 9.71                 |
| 6               | P NATL ACAD SCI USA | 10.23         | 21           | 11.04                |
| 6               | BRAIN               | 9.81          | 22           | 12.36                |
| 1               | GENOME RES          | 9.68          | 23           | 12.58                |
| 1               | ARCH INTERN MED     | 9.67          | 24           | 12.80                |
| 2               | NEUROSCI BIOBEHAV R | 9.56          | 25           | 13.25                |
| 1               | EUR HEART J         | 9.28          | 26           | 13.47                |
| 1               | GUT                 | 9.25          | 27           | 13.69                |
| 1               | CURR OPIN NEUROBIOL | 9.14          | 28           | 13.91                |
| 12              | BIOL PSYCHIAT       | 9.02          | 29           | 16.56                |
| 1               | J AM CHEM SOC       | 8.26          | 30           | 16.78                |
| 2               | STEM CELLS          | 8.21          | 31           | 17.22                |
| 12              | J NEUROSCI          | 8.12          | 32           | 19.87                |
| 1               | CANCER RES          | 7.98          | 33           | 20.09                |
| 1               | GENOME BIOL         | 7.81          | 34           | 20.31                |
| 7               | HUM MOL GENET       | 7.59          | 35           | 21.85                |
| 1               | CAN MED ASSOC J     | 7.56          | 36           | 22.08                |
| 1               | DEVELOPMENT         | 7.22          | 37           | 22.30                |
| 3               | CEREB CORTEX        | 6.94          | 38           | 22.96                |
| 6               | NEUROIMAGE          | 6.88          | 39           | 24.28                |
| 4               | STROKE              | 6.87          | 40           | 25.17                |
| 3               | NEUROLOGY           | 6.86          | 41           | 25.83                |

A detailed list of our publications is available on our website at the following URL:  
[http://www.tcd.ie/Neuroscience/about/Publications 2008-2010](http://www.tcd.ie/Neuroscience/about/Publications%202008-2010)

## PERSONNEL IN TCIN (APPENDIX 1)

### Current Principal Investigators, Postdoctoral Fellows, Postgraduate Students

| Principal Investigator                  | Affiliation   | Postdoctoral Fellows   | Postgraduate Students   |
|---|---|--|---|
| Prof. Roger Anwyl                       | School of Medicine (Physiology)   | Phillip Welsby<br>Sarah Harney<br>Qin-Wen Fang<br>Jianqun Wu | Lan Wang  |
| Dr Arun Bokde                           | School of Medicine (Psychiatry)   |  | Elizabeth Kehoe<br>Joanna Connolly  |
| Prof. Ruth Byrne                        | School of Psychology  | Dr. David Beltran  | Alex Pereda<br>James Dixon  |
| Prof. Veronica Campbell                 | School of Medicine (Physiology)   | Aoife Gowran   | Janice Noonan<br>Baby Maloor<br>Manoj Kanichai  |
| Dr. Thomas Connor                       | School of Medicine (Physiology)   | Eadaoin Griffin  | Eimear Fagan<br>Dana Kilroy<br>Karen Ryan<br>Jennifer Day<br>Katie Ryan<br>Eimear Fagan<br>Martina Hughes |
| Dr. Thomas Connor/<br>Dr Andrew Harkin  | School of Medicine (Physiology)/ School of Pharmacy                                     | Sinead Gibney  |   |
| Dr. Thomas Connor/<br>Dr Julie Kelly    | School of Medicine (Physiology)/ School of Biochemistry and Immunology                  |  | Jennifer Day  |
| Dr. Colm Cunningham                     | School of Biochemistry  |  | Carol Murray  |
| Dr. Gavin Davey                         | School of Biochemistry and Immunology   | Jayne Telford  | Emma Williams<br>Stephen Quinn  |
| Dr. Gavin Davey/<br>Prof. Keith Tipton  | School of Biochemistry and Immunology   |  | Laura Brady<br>Aoife Cullen<br>Wenhao Fu<br>Aldo Oliveiri   |
| Dr. Gavin Davey/<br>Prof. Michael Rowan | School of Biochemistry and Immunology /School of Medicine (Pharmacology & Therapeutics) |  | Jayne Telford   |
| Dr. Gary Donohue                        | School of Medicine  | Dr. Ilaria Spoletini   | Therese O'Donoghue<br>Rosie Peel  |
| Dr. Jane Farrar                         | Genetics  |  | Carol Loscher   |
| Prof Thomas Frodl                       | School of Medicine (Psychiatry)   | Francesco Amico<br>Angela Carballedo                         | Danutia Lisiecka  |

| <b>Principal Investigator</b>                 | <b>Affiliation</b>               | <b>Postdoctoral Fellows</b>   | <b>Postgraduate Students</b>  |
|---|----------------------------------|---|---|
| Prof. Hugh Garavan                            | School of Psychology             |   | Adam Stone<br>Aisling Ni Shiochain<br>Jennifer Jones<br>Brendan Behan<br>Philip Murphy  |
| Prof. Michael Gill                            | School of Medicine (Psychiatry)  |   | Lynne Cochrane  |
| Prof. Harald Hampel                           | School of Medicine (Psychiatry)  | Arun Bokde<br>Michael Ewers<br>Yemi Faluyi<br>Joshua Maduwuba<br>Catherine Delaney  | Laurence O'Dwyer  |
| Dr. Andrew Harkin                             | School of Pharmacy               |   | Aine Abautret-Daly<br>Lorna Gleeson<br>Natacha Vanattou<br>Jenniffer Rouine<br>Valentina Gigliucci  |
| Prof. Orla Hardiman                           | School of Medicine               | Simon Cronin<br>Julie Phukan<br>Arif Shukralla  | Paul Brennan<br>Deirdre Fitzgerald<br>Catherine Lynch RGN<br>Bernie Corr RN (CNM2)<br>Belinda Ennis (RA)  |
| Prof. Peter Humphries                         | Genetics                         | Alison Reynolds   |   |
| Dr. Aine Kelly                                | School of Medicine (Physiology)  |   | Rachel O'Callaghan<br>Eadaoin Griffin<br>Amy Birch<br>Ranya Bechara   |
| Dr. Julie Kelly/<br>Dr. Jane Farrar           |                                  | Amanda Tivnan   |   |
| Dr. Christian Kerskens                        | School of Medicine               |   | Jennifer Cooke<br>Michael Kelly<br>Joseph Gallagher   |
| Prof. Marina Lynch/<br>Dr. Christian Kerskens | School of Medicine               |   | Christoph Blau  |
| Dr. C. Simms/<br>Dr. Christian Kerskens       | School of Engineering            |   | Kevin Moerman   |
| Prof. RoseAnne Kenny                          | School of Medicine (Gerontology) | Dr Amilcar Moriera<br>Dr Yumiko Kamiya<br>Dr. Patricia Kearney<br>Dr. Chie Wei (Mimi) Fan<br>Dr. Joe Harbison<br>Dr. Conal Cunningham | Dr. Orla Collins<br>Dr. Hilary Cronin<br>Dr. Sean Kennelly<br>Claire O'Regan<br>Dr. Clodagh O'Dwyer<br>Dr. Lisa Coogan<br>Dr. Roman R. Ortuno<br>Ciaran Finucane<br>Tim Foran<br>Claire Sommerville<br>Donal Skelly |

| <b>Principal Investigator</b>               | <b>Affiliation</b>                    | <b>Postdoctoral Fellows</b>   | <b>Postgraduate Students</b>   |
|---|---------------------------------------|---|--|
| Prof. Brian Lawlor                          | School of Medicine (Psychiatry)       |   | Dr. Orla Collins<br>Dr. Conor O’Luanaigh<br>Dr. Sean Kennelly<br>Dr. Roman Ortuno  |
| Prof. Marina Lynch                          | School of Medicine (Physiology)       | Anthony Lyons<br>Eric Downer<br>Thelma Cowley<br>Joan O’Sullivan<br>Anne-Marie Miller<br>Derek Costello | Melanie Watson<br>Laura Kelly<br>Kevin Murphy<br>Julie-Ann O’Reilly<br>Brian Deighan<br>Ronan Kelly<br>Rodrigo Gonzales<br>Belinda Grehan<br>Fionnuala Cox |
| Prof. Kingston Mills/<br>Prof. Marina Lynch | School of Biochemistry and Immunology |   | Aine Murphy<br>Keith McQuillan   |
| Prof. Kingston Mills                        | School of Biochemistry and Immunology | Stephen Lalor   |  |
| Prof. Marina Lynch                          | School of Medicine Physiology         |   | Brendan Behan<br>Deborah Keane<br>Riffat Tanveer<br>Raasay Jones   |
| Dr. Kevin Mitchell                          | Genetics                              | Annette Runker<br>Francesc Perez<br>Branguli<br>Karen Walshe<br>Tatsuya Okafuji                         | Graham Little<br>Suzanne Miller<br>Jackie Dolan<br>Sonia Nemaikallu<br>Joseph Gallagher  |
| Prof. Declan McLoughlin                     | School of Medicine (Psychiatry)       | Catherine Dempsey<br>Maria Semkovska<br>Antonino Glaviano<br>Ross Dunne MB                              | Sinead O’Donovan<br>Martha Noone<br>Adam Kavanagh MSc  |
| Dr. Fiona Newell                            | School of Psychology                  | Jason Chan<br>Cristina Simoes<br>Erik O’Hanlon  | Aisling Whitaker<br>Joanna McHugh<br>Iwona Pomianowska<br>Daniel Rogers  |
| Prof. John O’Doherty                        | School of Psychology                  | Ryan Jessup<br>Arun deSouza   |  |
| Prof. Shane O’Mara                          | School of Psychology                  | Sinead Mullally<br>Andrea Della Chiesa<br>Marian Tsanov<br>Vincent Hok<br>Charlotte Callaghan           | Sally Barlow<br>Gillian Cooke<br>Alan Blighe<br>Muireann Irish<br>Frank Roche<br>Kimberly Smith<br>Joanne Feeney<br>Johannes Passecker                     |

| <b>Principal Investigator</b>               | <b>Affiliation</b>                                     | <b>Postdoctoral Fellows</b>  | <b>Postgraduate Students</b>  |
|---|--|--|---|
| Prof. Mani Ramaswami                        | Genetics   | Vimlesh Kumar<br>Jens Hilebrand<br>Eimear Holohan<br>Adrian Dervan<br>Krisztina Foltenyi<br>Joern Huelsmeier                               | Bidisha Roy**<br>Cathal McCann<br>Alex Morrison**   |
| Prof. Mani Ramaswami/<br>Dr. Kevin Mitchell |  | Susy Kim<br>Genny Orso   | Aoife Larkin<br><br>**registered abroad   |
| Prof. Ian Robertson                         | School of Psychology                                   | Paul Dockree<br>Katherine Johnson<br>Laura McAvinue<br>Nils Penard<br>Andy Cochrane<br>Simon Finnegan<br>Wouter Braet<br>Redmond O'Connell | Doreen Hoerold<br>Sabina Brennan<br>Agniescka Lopez<br>Sian Counihan<br>Michelle Mc Cormack |
| Prof. Michael Rowan                         | School of Medicine<br>(Pharmacology &<br>Therapeutics) | Igor Klyubin<br>Tomas Ondrejcek<br>William Cullen  | Andrew Barry, NengWei Hu,<br>Yingjie Qi, Ben Ryan, Juan<br>Carlos, Toledo Salas             |
| Dr. Daniel Ulrich                           | School of Medicine<br>(Physiology)                     |  |   |