

Highlights:

- Launch of the highly prestigious grants awarded to Physiology PIs
- Lots of New Staff
- More funding announcements
- New labs in Future-Neuro
- Departmental Charity Events
- Mapping the Department
- Xmas Gatherings

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Physiology News

Launch of the FutureNuro Research Centre and the ITN's

PI's celebrated with their teams and collaborators on the launch of their awards. **Tobias Engel** *et al* gathered to launch the ITN PurinesDX, **Annette Bryne**; **GLIOTRAIN**, **David Henshall** and **Jochen Prehn**;



Dr Tobias Engel (co-ordinator of PurinesDX and Dr. Isabela Aparicio (Programme Manager) & Collaborators from all over Europe attend the launch at RCSI



Prof. Jochen Prehn, Prof. David Henshall and collaborators of the FutureNuro Projects, launched by Taoiseach Leo Varadkar attend the opening at the RDS, Dublin

New Starters

The *Physiology News* Team would like to offer a warm-hearted welcome to all new-joiners in the past 6 months or so: we have a lot this time!

Secil Demirkol has recently joined Prof Jochen Prehn's group as visiting PhD student, from the Department of Molecular Biology and Genetics, Bilkent University, Ankara/Turkey. She is working on a collaborative project entitled "Analysis of cell death and metabolism related gene expression in gastrointestinal cancers utilizing a comprehensive systems biology approach" supported by COST 'Open Multiscale Systems Medicine' short term scientific mission committee. **Diana Smirnova** has joined Prof Jochen Prehn's lab as a Erasmus student. She is studying Bioinformatics in The Netherlands and this project is part of her graduation year. **Valentina Thomas** is a PhD student who started her project here in September 2017. After completing a B.Sc. in Ecology and an M.Sc. in Genomics, she is now involved in cancer research, applying bioinformat-

ics strategies to identify novel cancer genes and to elucidate the mechanisms of tumour development. Valentina is from the Italian region of Abruzzo but has Irish ancestry, hence her love of Irish food and Irish humour. **Catherine Sirafim** is from Cairio, Egypt and is undertaking a PhD project which is a collaborative project between the Kearney lab, TERG and CSM, co-supervised by Niamh Connolly. The project is entitled "On-Demand Delivery of Nucleic Acid Therapeutics Diabetic Foot Ulcers". **Peter O'Donovan** - in his own words. 'I am a 23 year holder of a BA of Genetics from Trinity College Dublin. I was born in Dublin and have never been away from the city for more than 2 weeks - quite a contrast to many others in the lab who travelled from all over the world to study here! I am currently pursuing a one year Research Masters under Simon Furney. My research is on cancer genomics - I use Python, R and the Unix command line to interrogate cancer genomes to find patterns of mutations called mutational signatures

and try to identify cancer-causing mutations that may be targets for future therapies'. **Ian Reynolds** studied Medicine in Trinity and is now a Specialist Registrar in General Surgery with an interest in Colorectal Surgery. He previously completed a Masters in Surgery with RCSI comparing IBD associated colorectal cancer to sporadic colorectal cancer. He has joined Professor Prehn's lab as a PhD student. Over the next 3 years he intends to look at the genetic architecture and intracellular signalling mechanisms that cause radioresistance in mucinous tumours of the rectum. **Kelvin E How Lau**: Kelvin previously finished his Master's degree specializing in Genetics and Cell Biology at UCD. He has joined Prof. David C. Henshall's group for the FutureNuro PhD programme funded by SFI. His project focuses on discovering novel miRNA biomarker in pediatric epilepsies. **Aoife Campbell** did her undergrad in DNA and forensics and went on to do a MSc in Neuropharmacology. She worked as a research assistant in the department on Anatomy in TCD for 9 months before com-

New labs opened for FutureNeuro



Great excitement on the NEW FutureNeuro (FN) lab, second floor York House, drop by and say hello!



Prof. David Henshall and his group comprising of FN and Epilepsy.

New Starters

coming here to RCSI as part of the StAR Program and will be working on rare genetic epilepsies such as Angelman and Rett Syndromes. **Jonathan Smith** did an integrated Masters and Bachelors degree in Neuroscience at the University of Leeds he was working on neurogenesis in a Multiple Sclerosis model. He is a PhD student within the FutureNeuro programme. His project is under the supervision of Dr Tobias Engel and aims to investigate the control of blood-brain barrier permeability during seizures via the ATP-P2X7 receptor.

Bridget Doyle has joined the FutureNeuro team as a Business Development and Centre Manager. Coming originally from the industry sector where she was responsible for Strategic Business Development with Ericsson Telecoms. and was Programme Manager for an Atlantic Philanthropies pilot-project for a community-based model of support for people with dementia. **Karina Carey** has recently joined FutureNeuro as Reporting officer; Karina will liaise with SFI in terms of reporting and assist in preparing centre funding applications. Karina was part of a pre-award funding team prior to joining RCSI.

New Starters Con't

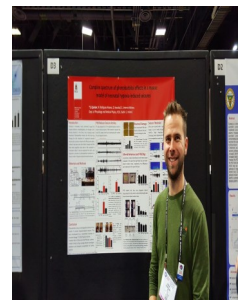
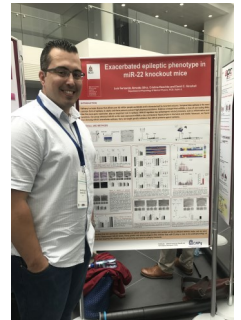
Linda Coyne is the Communications, Education and Outreach Officer with FutureNeuro. Before joining us, she was the Communications Officer for the Environmental Protection Agency. We also welcome **Kate Healy** who completed her MSc in Translational Oncology at Trinity College Dublin in 2013. Most recently, she completed her PhD at the University of St. Andrews in the UK, where she investigating the role of podocyte detachment in the progression of Diabetic Nephropathy. She has joined Trioina's group where she is researching the role of BRD3 as a novel therapeutic target in Invasive Lobular Carcinoma. She originally from Boston but happy to be back in Dublin! Lastly **Magda Hryniewiecka** has been working as a Research Assistant in the Department of Psychiatry, RCSI for 9 years before moving to the Department of Physiology and Medical Physics in August 2017. She received her undergraduate degree in Pharmacology and a MSc

in Neuroscience. Magda's role of Research Assistant involves facilitating day-to-day epilepsy research, carrying out different laboratory techniques. Her responsibilities moved also to the lab management area making her responsible for organizing and setting FutureNeuro Lab and is responsible for collection of human brain samples from patients with epilepsy from Beaumont Hospital, and setting small BioBank with human brain tissue.

Conferences

Neuroscience Ireland 2017 took place in NUI Galway Aug 28th -29th. **Cristina** and **Gary** both gave presentations on their work. **Cristina** won an award for the best Oral Presentation in the Post Doc Category. **Lizzie, Luiz** and **Marianna & Sean** gave poster presentations. Congrats to Luiz and Marianna who won a NSI award to travel to SFN in Washington.

SFN Washington



Luiz, Lizzie, Cristina & Sean at the SFN in Washington DC in November.

Page 3 Theses and Grad's

Congratulations to **Federico Lucatoni** who graduated with a PhD under the supervision of **Jochen Prehn** where he investigated BCL-2 family proteins interactions as prognostic marker and determinants of therapy responses in breast cancer. Congrats to **Ciara Dunphy** on submitting her thesis on the 'identification of novel molecular determinants of AMPK's survival and death promoting activities in cancer cells'. Well done also to **Eva Jimenez** and **Marion Hogg** who graduated with a diploma in Health Sciences Education.



Federico with Mum & Dad, Eva, Marion and Ciara.

Happy Faces, well done all!

Grant Awards & Invited Talks

In August, **Annette Byrne** (co-ordinator) and colleagues were awarded €6million for the EC funded H2020 Health industry/academia project 'COLOSSUS' which will focus on the development of new biomarkers and therapies for difficult to treat metastatic colorectal cancer. Later that month Annette also received news that the 'EDIREX' was also funded by the EC €5million. **Jochen Prehn** was also successful in his grant application along with multinational partners for a collaborative JPND grant of 1.5 M to work on novel biomarkers and therapeutics for neurodegenerative disorders or RNA-NEURO. In June 2017 **Tobias and Annette** were awarded 'PI's of the year from Enterprise Ireland. Congratulations to **Gary Brennan** on his 'CURE taking flight' award which aims to identify changes to the structure and composition of RNA in brain, using next generation sequencing and molecular biology techniques and then determining the effect these modifications have on the function of RNA, specifically in the context of epilepsy. See links for more info:

<https://www.cureepilepsy.org/our-research/grants-awarded/towards-understanding-epitranscriptome-epileptogenesis>

<https://ec.europa.eu/programmes/horizon2020/>

<http://www.neurodegenerationresearch.eu/>

<http://www.neurodegenerationresearch.eu/>



Gary Pictured with 'CURE' partners at the launch

Well done to **Catriona Dowling** who is the recipient of 2 awards this year- 1) The Irish Research Council fellowship which aims to investigate role of histone deacetylase (HDAC6) in non-small cell lung cancer. 2) The European Association of Cancer Research Travel Fellowship: which will enable Catriona to go to the Perlmutter Cancer Center in New York (NYU) where she will train on how to assess the sensitivity of a conditional genetic non-small cell lung cancer model to HDAC6 inhibition. Congrats to **Cristina Ruedell Reschke**, winner of the 2017 Grass Young Investigator Award. This award recognizes and honors eight outstanding young investigators conducting research in basic or clinical neuroscience related to epilepsy. Cristina's abstract, titled "Potent disease-modifying effects of systemically-delivered microRNA inhibitor in experimental epilepsy" (Submission ID #349723), was selected from over 1,300 submissions. As Part of the award Cristina was also invited to speak at the Young Investigators Workshop in the AES meeting in Dec 2017 (Washington DC). **Marc Sturrock** also gave a talk at the on 'Sources of Stochasticity in Gene Regulatory networks' in the Division of Scientific Computing at Uppsala University, Sweden. **Brona Murphy** gave a presentation on the 'Brain Tumor Biobank' at the "Biobanking Seminar and Debate," co-ordinated by the Association of Clinical Biochemists in Ireland (ACBI) at the Mater Hospital.



Catriona receiving her award for best Oral presentations at the annual conference for Irish Association of Pharmacologists.



Marc speaking at Uppsala University, Sweden

Reaching out

Our team was also busy with outreach and charity events. **Helena Bonner** has been attending some schools in the midlands for **College Awareness and Science week**. The aim of these is to provide information to TY and 6th year students on career options for STEM graduates.



Researchers on the Brain Tumor Ireland (BTI) projects met the Holton Family at the BTI progress meeting at RCSI to see some of the research and bio banking progress. The Holton Family were instrumental in raising funds to support the BTI bio bank by fundraising for the initiative. Our research nurse, **Orna Bacon** (BTI research nurse) also ran for the charity with her Daughter Ella & Son Eoin.



Orna with family and friends running for BTI

On October 20th, **Catriona Dowling** was among the organisers of a cake sale in aid of the Irish Cancer Society 'Cups Against Cancer' which raised 790.00 euros. On November 1st **Stefan Haunsberger** raised over 320.00 euros for 'Movember 2017' with his bake sale for the prostate cancer charity. **Patsy Connolly** also raised 530.00 euros for Barnardos - well done all and thank you all that donated.



The Holton Family meets CSM /BTI researchers : Brona Murphy, Kate Connor, Orna Bacon & Jochen Prehn

Xmas Party 2017



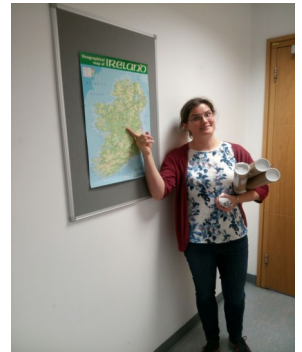
Pictured with their awards for best team player, best published paper and best progress report presentation is: **Andreas, Luiz and Frank** - well deserved guys.

Xmas gatherings



FutureNeuro Xmas gathering & Departmental Annual 'Stollen and Glühwein' gathering

Mapping the Department



This idea was initiated by **Niamh Connolly** and **Patsy Connolly**. It showcases the diversity of the department which consists of post docs, students and staff from all around the world.

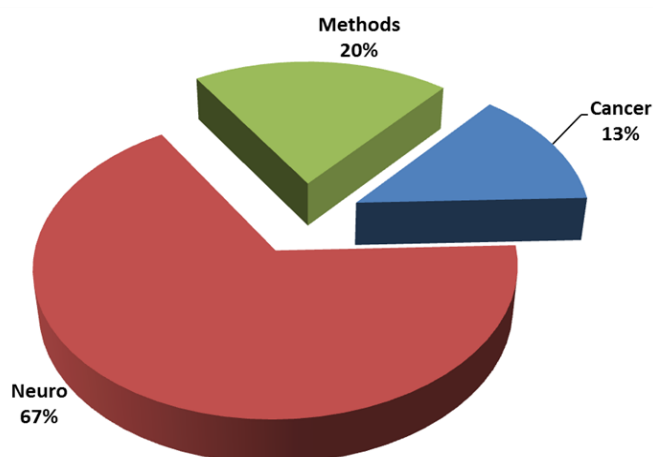


Tobias Engel *et al!* First Group Pic of 2018: Isabela Aparicio, Marianna Alves, Antonella Poggiani, James Morgan, Tobias Engel, Aidan Kenny, Edward & Jonathon Smith

Our Publications

In the last 8 months or so our department has produced a total of 15 publications with an average impact factor of 5.14.

Many congratulations to all authors and collaborators!



Journals	Number	Impact factor
EMBO Journal	1	9.792
Cancer Research	2	9.329
Cell Death & Differentiation	1	8.339
Cell Death Disease	1	5.965
Epilepsia	2	5.295
Oncotarget	2	5.168
Scientific Reports	1	4.259
Neuroscience	1	3.277
PLoS One	1	2.806
Brain Research	1	2.746
Neurochemical Research	1	2.581
Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration	1	2.14
Average:	15	5.141

Publications list (June 2017-January 2018)

June

Düssmann H et al. Cell Death Dis. 8:e2853.

Rajman M et al. EMBO J. 2017 e201695748.

Engel T et al. Oncotarget. 8: 45042-3.

Raoof R et al Sci Rep. 7:3328.

July

Moran B et al. Oncotarget 8:48126-37.

Reynolds JP et al. Neurochem Res 42(7): 2033-54.

Aronica E et al. Epilepsia 58: 27-38

Li B et al. Cancer Res 77:3834-45.

September Alves M et al. Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration 8: 1-8

November

González JA & Prehn JHM Neuroscience 369: 183-191.

Anilkumar U et al. PLoS One 12: e0188343

Meehan TF et al. Cancer Res 77: e62-6.

December

Connolly NMC et al. Cell Death Differ doi: 10.1038/s41418-017-0020-4. [Epub ahead of print]

Hogg MC et al. Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration 8: 1-8

January 2018

König H-G et al., Brain Res 1678: 356-66.

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