



# SBBS News

Newsletter of UCD School of Biomolecular and Biomedical Science

## Irish Cancer Society Funds New Breast Cancer Research Centre

The [Irish Cancer Society](#) has brought together Ireland's leading breast cancer researchers in a new five year collaboration that aims for better treatments for breast cancer in Ireland.

BREAST-PREDICT, which will see an investment by the Society of €7.5 million over the next five years, is a new Collaborative Cancer Research Centre involving most of Ireland's leading breast cancer researchers from a range of disciplines and a number of leading academic institutions. They will share their resources and expertise in a project designed to predict the best treatment options for breast cancer patients.

The Society is making the investment of €1.5 million per year, for up to five years, to join six research institutions and the [All Ireland Co-Operative Oncology Research Group \(ICORG\)](#) in a national collaboration, bringing together the expertise and support of several pre-existing entities in the areas of population-based, translational and clinical cancer research. All eight clinical cancer centres of excellence are on board.

Professor William Gallagher, Director of the Irish Cancer Society Collaborative Cancer Research Centre BREAST-PREDICT, is a Principal Investigator in the School of Biomolecular and Biomedical Science at University College Dublin, which is one of the important academic institutions driving the centre forward. The other bodies involved include Trinity College Dublin, Royal College of Surgeons in Ireland, Dublin City University, NUI Galway and University College Cork alongside the All Ireland Co-Operative Oncology Research Group (ICORG).

Commenting on the announcement, [Professor William Gallagher](#) said:

"The Collaborative Cancer Research Centre will for the first time in Ireland harness the wealth of data available on breast cancer from around the globe to inform new clinical trials and treatments, and link in with world leading scientists and institutions such as the Dana-Farber Cancer Institute in Boston and the Cambridge Research Institute in the UK. The ultimate goal of this research is



*Professor John Fitzpatrick, Head of Research, Irish Cancer Society (left) with Sharon Burrell, Breast cancer survivor, and SBBS Professor William Gallagher, Director of the Irish Cancer Society Collaborative Cancer Research Centre BREAST-PREDICT.*

personalised medicine, which allows us to tailor therapy towards individual patients based on the characteristics of their particular tumour and, thus, improve outcomes for breast cancer patients both in Ireland and worldwide."

## SBBS Neuroscience Students Awarded Top Prizes

**SBBS Undergraduates and Post-graduates received top prizes at the Royal Academy of Medicine in Ireland section meeting which took place in University College Cork on June 20<sup>th</sup>.**

Neuroscience undergraduate student, Claire Leyden and final year PhD Neuro-

science student, Alan Corcoran, were joint recipients of the best poster prize at the meeting.

Meanwhile Helen Nolan, a 4<sup>th</sup> year BSc Neuroscience student came second in the Donegan Medal Prize, ahead of the many post graduate students from around Ireland. The Donegan medal is awarded yearly by the Section and encourages young scientists embarking on their careers to achieve high standards of presentation based on research work of good quality. All the prize-winners carried out their work in the laboratories of Dr. John O'Connor, SBBS senior lecturer.

*Pictured left are Alan Corcoran and Claire Leyden with the General Secretary of RAMI, Professor Ken O'Halloran (centre).*



*Helen Nolan, Stage 4 BSc Neuroscience student, receiving her award from the General Secretary of RAMI, Professor Ken O'Halloran.*



# Smart Coasts in Bray and Swansea: UCD Celebrates Cross-border Research Success

**University College Dublin Scientists showcased ground-breaking research to develop a system which will give real-time information on bathing water quality to Irish and Welsh coastal communities at a meeting with Welsh Finance Minister Jane Hutt in Swansea Bay, Wales on 10th September.**

The €4.3m Smart Coasts project, run jointly by UCD and Aberystwyth University, aims to improve the quality of the coastal parts of west Wales and eastern Ireland to boost tourism and support local economies. The research is supported by the EU funded Ireland Wales Cross-border Programme.

The research currently focuses on Bray and Swansea; both are urban locations with beaches within walking distance of thousands of residents, are popular destinations for tourism and water sports and have received significant infrastructural investment.

The new prediction system being developed is linked to electronic information systems which will provide bathers with up-to-date information on water conditions. The researchers aim to improve our understanding of pollution sources and help maintain, and increase, the number of Blue Flag beaches in Ireland and Wales in line with European bathing water standards.

Professor Wim Meijer and Professor Bat Masterson of UCD joined their cross-



*The Smart Coasts teams from Ireland and Wales with Welsh Finance Minister Jane Hutt. (Centre) In Swansea Bay. To the left and right of the Minister respectively are Professor Bat Masterson (formerly of SBBS) and Professor Wim Meijer (SBBS and leader of the Irish team). Also pictured is Professor David Kay, the leader of the Welsh team (far left).*

border colleague, Professor David Kay of Aberystwyth University, in Swansea Bay to show Minister Hutt what the project has achieved so far. The Ministerial visit was arranged to coincide with European Co-operation Days to highlight how cross-border activity through the support of EU funding benefits our daily lives.

"The project was funded to develop the tools needed to predict bathing water quality in real time. It is designed to protect the public by giving real-time information to beach users. This is scientifically challenging but, if achieved, will help prevent the loss of Blue Flag

beach awards when new tighter standards in Bathing Water Directive come into force in 2016", said Professor Meijer.

Minister Hutt expressed delight with the research, "This is an excellent example of collaborative cross-border projects delivering positive economic impacts by ensuring local residents and visitors can enjoy the clean water and excellent beaches."

*Article courtesy of Siobhán Rudden, Development Officer (Ireland) - Ireland Wales Programme 2007-2013 Interreg 4A Southern and Eastern Regional Assembly*

## Californian Dreams realised for SBBS Students

**Two SBBS students spent the summer carrying out research projects in San Francisco, after successfully gaining places on Genentech's competitive Internship Programme.**

Markus Schröder, a PhD student on the Wellcome Trust funded, Computational Infection Biology Programme, jointly supervised by Professor Geraldine Butler and Professor Des Higgins (SMMS) worked on DNA sequence data from the powerful HiSeq2500 system. Markus was based in the Next Generation Sequencing group in the Department of Molecular Biology. He worked on an interactive reporting system of exome, whole genome and low pass whole genome sequencing for gender verification and Copy Number Variation (CNV) detection. He investigated recently published methods in the field of cancer research using internal data and also provided

general bioinformatics support to the department.

Meanwhile, Benjamin Doyle, a Stage 4 BSc Neuroscience student (2012-2013), who carried out his final year project in Dr Gerard Cagney's group, was also awarded a summer internship. Ben commented, "This summer I spent 12 weeks working as an Intern in Genentech in California I got the chance to work on cutting edge technology as well as foundation techniques that are needed for research at any level. It was a great opportunity to work with people at the top of their profession as well as to see how they have perfected some of the techniques that one might have tried during their undergraduate degrees. If you have an interest in further research in industry or in academia the people I worked with in Genentech are equally as friendly and helpful as they are intelligent."

## SBBS Researcher awarded Fellowship for Eye Therapeutics

**Dr Claire Kilty, working with SBBS Principal Investigator, Dr Breandán Kennedy, was recently awarded a prestigious Irish Research Council Postdoctoral Fellowship**

This is a highly competitive award, with only 50 awards out of 382 applicants being made nationwide. Dr Kilty will be working on developing a microparticle-based delivery mechanism, to transport and release small molecule drugs into the eye. These drugs work to reduce the key pathologies associated with the blinding conditions, age-related macular degeneration and diabetic retinopathy, such as the growth of abnormal leaky blood vessels, retinal oedema and ocular inflammation.

# UCD Leads the Way with Eye Therapeutics

**SBBS Principal Investigator, Dr Breandán Kennedy is leading a new European consortium, 3DNET, which was recently awarded a Marie Curie IAPP FP7 grant ( €1.66 M) on 'Drug Discovery and Development of Novel Eye Therapeutics'.**

The four-year project seeks to enable the development of new drugs for the treatment of ocular disease associated with inflammation, neovascularisation, edema and degeneration, through the complementary capabilities of the partners. The research will be relevant to the treatment of common eye conditions such as age related macular degeneration and diabetic retinopathy.

The Marie Curie Industry-Academia Partnerships and Pathways (IAPP) grants focus on joint research projects

and aim to boost skill exchange between the commercial and non-commercial sectors, so helping public and private research to work together. Partners include universities and companies of all shapes and sizes. The programme funds exchange of know-how and experience through either one-way or two-way secondments of research staff between the industrial and academic partners.

The 3DNET consortium partners, in addition to UCD, include leading researchers in front- and back-of-the-eye diseases, ocular disease models and synthetic chemistry at, Universidad de Valladolid (Valladolid, Spain), KalVista Ltd (Southampton, UK), RenaSci Ltd (Nottingham, UK) and Gadea Grupo Farmacéutico (Leon, Valladolid and Soria; Spain).



Participants at the 'Kick-off' meeting of the 3DNET consortium. From left: Dr Yolanda Fernandez (Gadea); Dr Yolanda Diebold (University of Valladolid); Drs Rob Jones and Sharon Cheetham (RenaSci); Dr Breandan Kennedy (UCD, project coordinator); Dr Robert Haigh (KalVista) and Dr Yolanda Alvarez (UCD, project manager) (Photograph, H. Wood)

## Organising a PhD Symposium - an inside view

**Markus Schröder, a PhD student on the Wellcome Trust Computational Infection Biology programme supervised by Professor Geraldine Butler and Professor Des Higgins (SMMS) collaborated with other students from around world to describe their experience organising PhD symposiums.**

The result has just been published in the Nature journal, EMBO Reports. The students at UCD organise the entire

meeting on an annual basis, from inviting speakers to raising funds. This year's symposium (on Computational Biology and Innovation) will be held on December 5th-6th. Details can be seen at <http://bioinfo-casl.ucd.ie/phdsymposium/>. All are welcome to attend, and PhD students are strongly encouraged to participate.

Reference: <http://www.nature.com/embor/journal/vaop/ncurrent/full/embor2013147a.html>

## Technical Staff Retire After 90+ Years of Service

**Senior Technical Officers, Anne Hudson and John Murray retired from UCD in the summer of 2013 after 43 years and 48 years respectively in UCD.**

Anne graduated from UCD in 1970 with a B.Sc.(Hons.) in Chemistry and went on to become a technician in the Department of Medicine, based in Woodview. Later she moved to the Department of Biochemistry in Merville House. She worked in the diagnostic laboratory with Professor Don Hingerty and subsequently with Professor JPG Malthouse in the NMR Facility. She was also involved in the undergraduate area for most of her career.

Anne retired from UCD in May 2013 after a total of 47 years in UCD.

John Murray retired on 31<sup>st</sup> August as Senior Technical Officer in the School of Biomolecular and Biomedical Science after almost 48 years of service to UCD. John joined the Department of Biochemistry in 1965, specialising in maintenance and repair of laboratory equipment. After spending the early years of his career in Merville House, John moved with the department to the Conway Institute in 2003 and became a member of the School of Biomolecular and Biomedical Science when it was formed in 2005.

SBBS staff extend their best wishes to both Anne and John in their retirement.



PhD Student, Markus Schröder

[www.ucd.ie/sbbs](http://www.ucd.ie/sbbs)

## Awards at DAMC Young Investigator Research Meeting

The 2013 Dublin Academic Medical Centre (DAMC) Young Investigator Research Meeting took place on 22nd May.

In the translational research category, SBBS PhD student Hayley Beaton won best oral presentation for *Wnt6 is increased in diabetic nephropathy and modulates de novo tubulogenesis and opposes TGF $\beta$  mediated epithelial cell differentiation in vitro*.

Hayley is a member of Dr John Crean's research group. Her research focuses primarily on Wnt6 in diabetic nephropathy, which refers to the progressive kidney disease or damage that can occur in those with long-term diabetes. Commenting her research Hayley said,

"We propose that Wnt6 is involved in determining epithelial cell fate specification and as such its increased expression activates transcriptional programmes that determine phenotypic transition. If these mechanisms can be established, then the possibility of manipulation of Wnt6 may be of pharmacological and clinical relevance in terms of developing new therapeutic strategies to slow or reverse the progression of diabetic nephropathy."



SBBS PhD Student Hayley Beaton (centre), winner of the best oral presentation in the Translational Research Category at the DAMC, Young Investigator Research Meeting, with other prize winners Dr Elaine Walsh, and Karen Nolan.



SBBS PhD student, Nils Lambacher (left) receives the Conway Medal from Professor Desmond Fitzgerald, UCD Vice President for Research.

## SBBS Student Wins Conway Medal

SBBS PhD student, Nils Lambacher was recipient of the Conway Medal at the 10th Conway Festival.

Nils Lambacher won the award for his poster presentation. Nils is member of a research team, led by Dr Oliver Blacque, that identified a novel ciliary related MAP kinase. MAP Kinases are involved in directing cellular responses to a diverse array of stimuli and they regulate a variety of cellular pathways including differentiation, mitosis and apoptosis. The main focus of the Blacque group is to find proteins that play a role in structure, maintenance & functions of primary cilia. Of particular interest is to identify links to molecules that are involved in ciliopathies - diseases caused by the dysfunction of cilia.

Meanwhile Dr Alison Reynolds (Dr Breandán Kennedy's group) was awarded a prize in the Innovations - Therapies section. Dr Reynolds is looking at therapies for eye diseases such as Age-related Macular Degeneration and Diabetic Retinopathy. The current gold standard medication is an anti-VEGF antibody (Lucentis) which requires a monthly injection into the eye. The ultimate goal of Dr Reynolds research is to develop new therapies with improved modes of delivery and which target alternative pathways.

## UCD leads EU Programme for Melanoma Diagnostics

University College Dublin will lead a €1.7M European project focused on bringing novel melanoma diagnostics towards the clinic

The European Seventh Framework Programme announced funding in June for a four-year international research programme, SYS-MEL, centred on new diagnostics in the melanoma arena. Melanoma is the most aggressive form of skin cancer and currently there are few effective therapies for later stages of the disease. Led by University College Dublin (UCD), SYS-MEL will build on sturdy foundations laid down by another EU-funded programme, *Target-Melanoma* ([www.targetmelanoma.com](http://www.targetmelanoma.com)), researching the hallmarks of melanoma.

Researchers from four leading academic institutions, namely UCD, the Royal College of Surgeons in Ireland, the Cancer Research UK Beatson Institute in Glasgow, and KU Leuven in Belgium, as well as two clinical diagnostic companies

OncoMark Ltd. (based in Dublin) and Pathology Diagnostics Ltd. (Cambridge, UK) hope that this programme will enable them to generate clinical assays that will benefit melanoma patients by predicting who will require aggressive treatment, and which patients will respond to specific therapies.

The successful *Target-Melanoma* programme forms the basis for one of the clinical assays expected to result from SYS-MEL, a test that will be used to predict how aggressive the disease will be in patients. A core component of the SYS-MEL programme will be systems biology, an emerging field in drug discovery and development. Systems biology enables scientists to model what is happening in patients and within tumours, in order to more accurately predict how cancers will respond to therapies.

SBBS principal investigator, Prof. William Gallagher, who is Associate Professor of Cancer Biology in UCD, Chief Scientific Officer of OncoMark Ltd, and the Lead Co



Professor William Gallagher (SBBS), Lead Coordinator of the programme.

-Ordinator of the programme said "We are delighted to lead this European consortium of outstanding cancer research scientists and clinicians, and we are excited at the opportunity to translate our findings into clinical assays that will benefit melanoma patients worldwide".

## New Home for SBBS Undergraduate Students

## SBBS Researcher Australia Bound



*Dr Joan Simon, Senior Technical Officer, instructs students on safety procedures in BIOC30010 (Metabolism and Disease) the first SBBS practical class to take place in the Science Centre, Monday 16th September. (Photograph, JPG Malthouse).*

### **SBBS undergraduate teaching moved to the new UCD Science Centre for the start of the 2013/2014 academic year.**

State of the art lecture theatres and laboratories on the second floor accommodate Stage 2 and 3 SBBS students for lectures and practical classes. The SBBS Undergraduate

Administration Office will shortly relocate close to the laboratories and will be open for undergraduate queries 9.30am to 1.00pm, 2.00pm to 5.00pm. Meanwhile the SBBS School Office, which deals with post-graduate and general queries will be relocated to the Conway Institute (beside Java coffee bar). Poster printing will remain in the Conway Institute.



*Dr Linda Holland, recipient of a three year ELEVATE fellowship.*

### **Research conducted in Dr Cormac Murphy's laboratory is concerned with the microbial biosynthesis and bio-transformation of halogenated compounds, mainly focussed on those that contain fluorine.**

Incorporation of fluorine into an organic compound can favourably alter its physicochemical properties and as a consequence this element is found in many pharmaceutical and industrial chemicals. These organofluorine compounds are accepted as substrates by many enzymes, including some of the enzymes produced by microorganisms. The interactions of microorganisms with these compounds can have both negative and positive effects. On the one hand, the microbial transformation of organofluorines can lead to the generation of toxic compounds that are of environmental concern. Yet similar bio-transformations can yield use otherwise difficult-to-synthesise products which are

of use to the fine chemicals industry.

Dr Murphy is the deputy co-ordinator of a Marie Curie Initial Training Network, FLUOR21: Synthesis, structure and function of fluorinated systems, which has been recently approved for funding. The network is comprised of fluorine chemists and biochemists from UK, Germany, Czech Republic and Switzerland, in collaboration with two industrial partners. There are two PhD students to be recruited to UCD as part of the training network, who will examine novel fluorinated compounds' interactions with microorganisms.

Dr Murphy gave an invited lecture entitled 'Biofilm-Catalysed Transformation of Organofluorine Compounds' at the 17th European Symposium on Fluorine Chemistry in Paris (July 21st-25th). The symposium was held in the Faculté de Pharmacie where Henri Moissan first isolated elemental fluorine in 1886 (for

which he won the Nobel Prize for Chemistry, 1906).

Dr Murphy travels to Brussels in October as an expert evaluator of Marie Curie Fellowships.



*Faculté de Pharmacie, Paris. (Photograph, C Murphy)*

## Transformation of Organofluorine Compounds

# Graduation and Academic Awards 2013

**BSc (Gen) and BSc (Hons) degrees and higher degrees were conferred on Friday 6th September.**

To mark the graduation, SBBS staff hosted a reception for graduates and their families at which the School's academic awards were presented.

The recipients of the awards were as follows:

Harrington Medal for Biochemistry, **Mark Hughes**;

Genetics Medal, **Elsbeth Ward**;

Hussey Award for Microbiology, **Niamh Hanrahan** and **Nicola Kavanagh** (joint recipients);

Neuroscience Medal, **Audrey Bradford**;

Pharmacology Medal, **Constance Cremers**;

Joy Carey Prize (Biochemistry project), **Helen Byrne**.

**Stephanie Merrigan** was also present to receive the Roddy Monks prize of which she was joint recipient with **Oliver Feeney**.



*Pictured from left are prize winners Stephanie Merrigan, Nicole Kavangh, Niamh Hanrahan, Audrey Bradford, Helen Byrne and Mark Hughes. (Photograph, H Wood)*

In addition to the 133 students conferred with BSc degrees, 2 students received their MSc degrees and 15 post-graduate students were conferred with PhD degrees.



*The Neuroscience class of 2013, with Dr John O'Connor (left) and Head of Neuroscience, Dr Caroline Herron (right). (Photograph, J O'Connor)*



*Dr Kirsha Naicker who carried out her PhD research under the supervision of Dr Darran O'Connor (Photograph H Wood)*

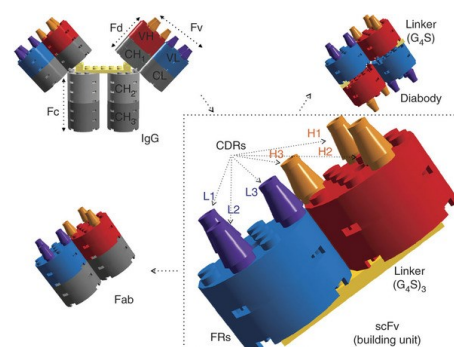
## Antibody Engineering for All

In collaboration with UCD Centre for Nanomedicine and researchers in the USA and France, Dr David O'Connell (SBBS) has published a protocol describing the design and development of recombinant antigen-binding molecules derived from monoclonal antibodies.

The protocol described by Dr O'Connell and his collaborators encompasses the development of recombinant monovalent antigen-binding molecules derived from

monoclonal antibodies. Comprehensive guidelines are provided for the design, production in *E. coli* and purification of recombinant antibody fragments. It is anticipated that this will assist in the generation of novel and high-quality binding molecules and is promised to be accessible for research groups whose primary specialisation is not in this area.

**Reference:** Fields C, O'Connell D, Xiao S, Lee G, Billiald P, Muzard J. (2013) *Nature Protocols* 8: 1125–1148.



*Building antibodies step-by-step. (Image from Fields et al., (2013))*

## Summer School Students



Students from the USA and Canada enjoying Microbial Diagnostics (Photograph, T Ó Croinín)

### Two summer schools gave second level students a taste of SBBS activities.

In June, Irish 5th year students participated in the Science Summer School. Those opting for Biology sampled a variety of laboratory activities organised by both the School of Biology and Environmental Science and the

School of Biomolecular and Biomedical Science.

SBBS also hosted 24 high school students from the USA and Canada as part of a summer school on July 22nd where, under the tutelage of Dr Tadhg Ó Croinín, they spent an afternoon learning techniques used in Microbial Diagnostics.

## Plastics, Science and Society

**Meg Walsh (SBBS) won the best digital poster in the enterprise section for Science Technology and Engineering at the recent Irish Research Council annual symposium held September 14<sup>th</sup> at the Convention Centre Dublin.**

Meg presented a poster about converting waste into biodegradable plastic in the context of 'Why my Research Matters'. The competition required researchers to communicate their research effectively to the public on exactly what they are

researching and the impact of the research for society. The Irish Research Council's broad remit is to support and enhance human capital development and in encouraging independent exploratory research.

Meg is a Bioplastech employee who is in the first year of her PhD studies at UCD under the supervision of Dr Kevin O Connor (SBBS) and Dr Shane Kenny (Bioplastech). She is funded under the IRC's employment based PhD scheme.



Dr Shane Kenny (Bioplastech) and Ms Meg Walsh (Bioplastech and SBBS).

## Funded to Fight Colorectal Cancer

**UCD Pharmacology graduate, Clare Butler has been awarded 4 years funding from Cancer Research Ireland to undertake a PhD in Dr Breandán Kennedy's Group. Clare will investigate the 'anticancer' efficacy of molecules against Colorectal cancer (CRC).**

Colorectal cancer (CRC) is the second most commonly diagnosed cancer in Ireland, with ~2000 new cases diagnosed each year and a 50% mortality rate. Hence, more effective therapies are required to treat this cancer. The goal of this research is to develop novel and improved therapeutics for CRC.

Angiogenesis is the process by which new blood vessels grow. While being a normal process during growth and development and in wound healing, angiogenesis is also a fundamental step in the transition of tumours from a benign to a malignant state, hence the use of angiogenesis inhibitors in the treatment of cancer. A novel anti-angiogenic compound named "11B" was discovered previously. To improve the efficacy of 11B, the structure of the parent compound was altered. Of the 60 resulting analogues, 6 exhibited significantly enhanced anti-angiogenic efficacy in zebrafish compared to 11B.

During her PhD, Clare will use zebrafish models and human cell lines to determine which of these 11B analogues is the most promising for further development as a CRC therapeutic.

## Staff and Student News

**Dr Tara McMorrow** was joint recipient of 'Teacher of the Year Award, Biomedical Health & Life Science', awarded by the School of Medicine and Medical Science

**Dr Caroline Herron** gave a talk at the Neuroscience Ireland 2013 meeting in Cork on 13<sup>th</sup> September entitled "Simvastatin treatment preserves synaptic plasticity in appsw.e.ps1de9 mice"

## Staff and Student News

continued.....

**Dr Carmel Hensey** received a commendation in the Jennifer Burke Award for Innovation in Teaching and Learning. Dr Hensey was one of 7 finalists presenting her work at the 14<sup>th</sup> Educational Technology Conference of the Irish Learning Technology Association (ILTA); May 30th, UCC. Dr Hensey's abstract and presentation "Toxicology Module Redesign. Games, Websites, Wikis and APPs -learning aids developed by students for students", focused on a redesign and implementation of changes in PHAR30030.

**Professor Ciarán Regan** was an invited speaker at the International Behavioural Neuroscience Society meeting, which was held in Dublin in the Symposium on "Animal models of autism: Assessing genetic vulnerability, environmental risk factors, and new strategies for intervention", Professor Regan gave a talk entitled "Autism spectrum disorders, epigenetics and histone deacetylase inhibitors."

The school welcomes **Ms Alison Adams** who has joined the school temporarily as technical officer.

**Lara Rodriguez Ribera**, a final year PhD student from Barcelona, was awarded a fellowship by the Spanish government Lara will spend 3 months in the Renal Disease Research Group (RDRG), led by **Dr Tara McMorrow**. Lara will be working on the mechanisms of uremic toxin induced renal fibrosis, a condition that can lead ultimately to kidney failure. **Michael Higgins** also joins the renal research team as a first year PhD student, who recently graduated with a degree in Pharmacology from UCD. Michael will be working on the SFI funded project: 'Mechanisms of cilia loss in kidney disease'.

SBBS welcomes 21 new graduate students who embarked on research projects within the school since January. Welcome also to the 57 Master's students who have begun their taught Masters' programmes in Biotechnology, and Biotechnology and Business.

## Upcoming Events

**Conferring of MSc degrees** in Biotechnology and Biotechnology and Business will take place on Wednesday 4th December in the O'Reilly Hall.

A **PhD symposium on Computational Biology and Innovation** will be held on December 5th-6th. Details can be seen at <http://bioinfo-casl.ucd.ie/phdsymposium/>. All are welcome to attend, and PhD students are strongly encouraged to participate.

**UCD Science Open Evening 2013** is scheduled for Tuesday 22nd October at 6:00pm. This evening is for 6th year students, A-level students, FETAC students, mature applicants, parents and teachers. The evening will comprise a series of talks from UCD Science graduates, a chance to meet lecturers and a talk by Associate Dean, Professor Peter Duffy, on the UCD Science degrees. Interested participants should book a place by emailing [science.events@ucd.ie](mailto:science.events@ucd.ie) and can also be advised to visit the College of Science Webpage: <http://www.ucd.ie/science/events.html>.

## Recent SBBS Publications

Corcoran A, **O'Connor JJ**. Hypoxia-inducible factor signalling mechanisms in the central nervous system. *Acta Physiologica*. (2013) 208(4):298-310.

Egan CM, Nyman U, Skotte J, Streubel G, Turner S, **O'Connell D**, Rrakli V, Dolan MJ, Chadderton N, Hansen K, Farrar GJ, Helin K, Holmberg J, Bracken AP. (2013). CHD5 is required for neurogenesis and has a dual role in facilitating gene expression and polycomb gene repression. *Developmental Cell* 26: 223–236.

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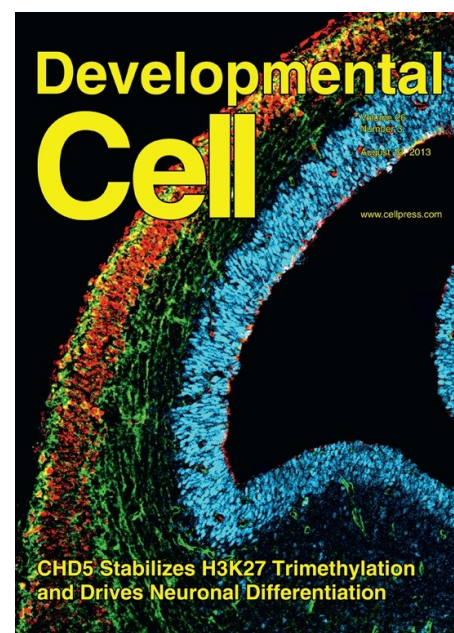
Nicoll AJ, Panico S, Freir DB, Wright D, Terry C, Risse E, **Herron CE**, O'Malley T, Wadsworth JD, Farrow MA, Walsh DM, Saibil HR, Collinge J. (2013).

Amyloid- $\beta$  nanotubes are associated with prion protein - dependent synaptotoxicity. *Nature Communications* 4: 2416 - 2424.

Ring RM, **Regan CM** (2013) Captodiamine, a putative antidepressant, enhances hypothalamic BDNF expression in vivo by synergistic 5-HT<sub>2c</sub> receptor antagonism and sigma-1 receptor agonism. *J Psychopharmacology* 27, 930-939.

Wall AM, Corcoran A, O'Halloran KD, **O'Connor JJ**. (2013). Effects of prolyl-hydroxylase inhibition and chronic intermittent hypoxia on synaptic transmission and plasticity in the rat CA1 and dentate gyrus. *Neurobiology of Disease*.

Sumayao R, McEvoy B, Martin-Martin N, **McMorrow T**, Newsholme P. (2013). Cystine dimethylester loading promotes oxidative stress and a reduction in ATP independent of lysosomal cystine accumulation in a human proximal tubular epithelial cell line. *Exp Physiol*. PMID:23813804



Cover of *Developmental Cell*, Volume 26, with image from Egan et al., (2013).

This newsletter is put together with the help of staff and students in SBBS. Research news, general school news and other items of interest for inclusion in this newsletter or on the SBBS website can be sent to [heather.wood@ucd.ie](mailto:heather.wood@ucd.ie)