Queen's University Belfast

CCRCB Centre for Cancer Research & Cell Biology

Bulletin

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QUEEN'S UNIVERSITY BELFAST LEADS INTERNATIONAL RESEARCH PROGRAMME IN PRECISION CANCER MEDICINE

Recognising the need to recruit and train high quality students as part of Queen's internationalisation and postgraduate strategy, the Centre for Cancer Research and Cell Biology (CCRCB) at QUB has entered into a partnership with researchers at the National Cancer Institute (NCI) in Washington to deliver an innovative Doctoral Training Programme in Precision Cancer Medicine. This four year Programme will provide QUB students with an unrivalled opportunity to perform cutting edge research at a world renowned cancer institution, positioning them as future leaders in an area that is revolutionising how we deliver 21st century medicine to cancer patients. Queen's University Belfast is leading this major new £2.5M international initiative into modern cancer care medicine which was announced in Washington D.C. on St Patrick's Day.

Professor David Waugh, CCRCB Director; Dr Jonathan Wiest, National Cancer Institute's (NCI) Director for Cancer Training, NCI USA; Dr Stephen Chanock, Chief, Division of Cancer Epidemiology and Genetics, NCI; Professor Mark Lawler, Associate Director of Postgraduate Studies, CCRCB; Dr Jackie Lavigne, Director, Office of Training, Division of Cancer Epidemiology and Genetics, NCI

Precision Cancer Medicine utilises our increased biological understanding of cancer to drive a more selective approach, ensuring patients receive therapeutically effective treatment based on their genetic make-up, while avoiding treatment-related side effects. CCRCB has established an innovative Academia-Industry-Healthcare Precision Cancer Medicine pipeline that is delivering new diagnostics and new therapies for cancer patients. The innovative Doctoral Training Programme in Precision Cancer Medicine will initially provide 12 Queen's students with an unrivalled opportunity to perform cutting edge research at a world renowned cancer institution.

Vice-Chancellor of Queen's University Belfast, Professor Patrick Johnston said: "It is extremely exciting to be announcing this initiative here in Washington. It provides significant opportunities for students to be exposed to state-of-the-art technologies and receive quality mentorship from researchers both at the NCI and at Queen's and it is further evidence of how Queen's researchers are continuing to advance knowledge and change lives at a global level."

Dr Stephen Chanock, Chief, Division of Cancer Epidemiology and Genetics, NCI said: "We welcome this opportunity for Northern Ireland students to come to the National Institutes of Health. They will join with fellow graduate students from many parts of the world in an academic milieu that will encourage research excellence."

In this Doctoral Training Programme, PhD students will not only acquire specialist research skills, but will also be exposed to entrepreneurship, innovation and leadership training, as part of a collaboration between the School of Medicine, Dentistry and Biomedical Sciences, the Queen's University Management School and the William J Clinton Leadership Institute at Queen's.

"This cross faculty, interdisciplinary PhD Programme is an excellent example of the type of modern postgraduate degree that we are now starting to offer to students attending Queen's", indicated Professor Margaret Topping, Dean of the newly developed QUB Graduate School. "This initiative was supported through our International Engagement Fund", said Scott Rutherford, Director of Research and Enterprise, Queen's, "emphasising how we can leverage international partnerships, founded on excellence, that benefit students, researchers and the university."

"Doctoral training is a key component of our Precision Cancer Medicine Programme", said Professor David Waugh, Director, CCRCB. "Partnering with researchers at the NCI not only enhances the student experience, but also provides significant opportunities for research collaborations with CCRCB scientists", he added.

Professor Mark Lawler, Associate Director of Postgraduate Studies at CCRCB and chief architect of the programme said: "This vibrant Doctoral Training Programme actively encourages excellence with impact, delivering a cadre of innovative, business-aware and socially responsible scientists who will compete successfully in the evolving global research and bio-industry communities. It provides Northern Ireland students with a "once-in-a-lifetime opportunity" to further their careers at a world famous cancer institution and deliver research with global impact."

Further details of the programme are available at: www.qub.ac.uk/research-centres/CentreforCancerResearchCellBiology/Education/DoctoralTrainingProgramme/.

LAUNCH OF BRAINWAVES NI VIDEO

Pictured at the launch of the recent Brainwaves NI video focusing on brain cancer research ongoing at Queen's University Belfast are Professor Kevin Prise, Dr Tom Flannery, David Gray, Kate Ferguson and Sandra McKillop. The local charity has already provided over £100,000 funding for brain tumour research at the Centre for Cancer Research and Cell Biology at Queen's. In addition, Brainwaves NI offers a range of support services for children and adults, their families and carers, affected by a brain tumour. To view the video, go to www.brainwaves-ni.org.

QUEEN'S PROFESSOR HIGHLIGHTS HOW GENETIC "BIG DATA" CAN REVOLUTIONISE HEALTHCARE

Professor Mark Lawler

Generating informative "big data" by linking genetic and clinical information is driving a revolution in human health. Speaking in the Plenary Session of the 3rd Conference of the Global Alliance for Genomics and Health (GA4GH) which took place recently in Leiden in The Netherlands, Professor Mark Lawler, Chair in Translational Cancer Genomics, Centre for Cancer Research and Cell Biology, Queen's University Belfast, highlighted how data sharing initiatives in cancer are breaking down the "silo" mentality that previously existed and unlocking a "genetic treasure trove" that can help deliver improved cancer outcomes. "GA4GH is an extremely powerful initiative that is revolutionising how we can combine genetic and clinical information to deliver benefit to patients with a wide range of diseases" said Professor Lawler who is a member of the Clinical Working Group of GA4GH. "In the area of cancer, we are spearheading an "Actionable Cancer Genome Initiative", developing a catalogue of the key genetic changes in cancer that can be targeted by novel drugs through a precision medicine approach that delivers personalised care to the patient", he added.

Experts from around the world met in Leiden to discuss how best to unite together and unlock the massive genetic and clinical datasets that are being generated to catalyse new approaches that deliver real added-value benefit for patients and society. Queen's is a founder member of GA4GH, which now numbers some 330+ partners from over 30 countries. "We are proud to be a founding member of this unique alliance and to be taking a leadership role as it gains global recognition", said Professor Patrick Johnston, President and Vice Chancellor of Queen's University Belfast. "Strategically, it aligns with two of our key strengths, cancer research and data sciences and has the potential to transform the global health landscape", he added.

"Driving global initiatives such as GA4GH emphasise the international standing of our research efforts in precision medicine and allow both scientists and ultimately patients to benefit from these added-value partnerships", said Professor David Waugh, Director, Centre for Cancer Research and Cell Biology, QUB.

A direct link to Professor Lawler's talk is available at: http://genomicsandhealth.org/files/public/GA4GH%20Meeting%20June%20Overview_0.mp4.

CCRCB FIRST EVER OPEN DAY!

The CCRCB welcomed over 350 people on Saturday 9 May 2015 for the Centre's first ever Open Day. It was a hugely successful day with 100% of those responding saying the event was outstanding/very good.

Visitors included patients and their families, supporters of the charities who fund research in the CCRCB, and the general public. Attendees could choose from a wide range of activities throughout the day and in all parts of the building. There were lab tours on every floor twice an hour, with each floor offering a different focus. Some visitors enjoyed visiting the labs so much they attended three or four different tours!

Senior scientists offered talks throughout the day on the latest research updates in their particular speciality, while post-docs and PhD students took a more informal approach by offering a 'coffee and a chat' on their particular research topics. A new video on the work of the CCRCB was commissioned which was shown in the 'video hub' throughout the day, along with the latest Molecular Pathology video and the six semi-finalist videos from the Cancer Research UK/CCRCB student completion earlier in the year.

The basement seminar room was transformed into an activity room which enlightened and entertained visitors of all ages. They were able to extract DNA from a strawberry, pair 'chromosome socks', make their own cell or DNA double helix and more.

Visitors were able to talk to the CRUK cancer research nurses and members of the NI Cancer Research Consumer Forum about clinical trials. Epidemiologists from the Centre for Public Health also had a large stand where they had activities aimed at raising awareness of cancer prevention through lifestyle changes. Representatives from Almac and PathXL were also on hand to talk about their work carried out in partnership with CCRCB.

Over 120 scientists, students, technical and administrative staff helped out with activities on the day, and attendees made many comments that the friendliness and openness of staff was an important part of making their experience of the event so positive.

Some of the feedback on the day included:

'Thank you for the open day. There is a lot going on in the research to give hope to many people'

'Loved it and I could spend a week in here!'

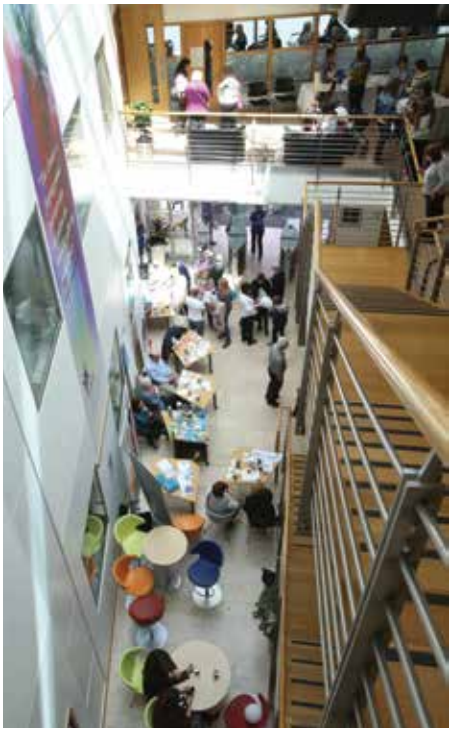
'Great activities for children in the basement with VERY engaging staff'

'It was great to have face to face contact with the people who work every day to help save us from dying from cancer, thank you!'

'It was all very informative. Good to meet the people who form the part of cancer care that you don't normally do - demystifies a frightening disease'

'Brilliant day – please have annually'

'Very interesting and informative, would love to come back again'



The CCRCB Engagement Committee, who organised the event, would like to thank everyone who participated and everyone who attended, and are already thinking of how to make an even better Open Day in 2016!

QUEEN'S RESEARCHERS DRIVING £5M STRATIFIED MEDICINE PROGRAMME TO PERSONALISE CARE FOR BOWEL CANCER PATIENTS

Queen's researchers are at the heart of a new research programme that aims to fundamentally change how we treat bowel cancer patients, both across the UK and globally. The Medical Research Council (MRC) and Cancer Research UK (CRUK) jointly launched a Stratified Medicine Consortium to help personalise bowel cancer treatment by matching patients to the most effective therapies. The announcement was made during Bowel Cancer Awareness month and represents a significant commitment from MRC and CRUK in developing a more personalised medicine strategy in this common cancer.

The £5M S-CORT* Consortium will employ the latest state-of-the-art techniques to define the genetic makeup of bowel cancer cells collected from over 2,000 patients from large clinical trials and use this information to develop personalised care plans for individual bowel cancer patients. "This Precision Medicine approach, where we match the right patient to the right treatment, has the potential to revolutionise how we treat this deadly disease", said Professor Mark Lawler, Chair of Translational Cancer Genomics, Centre for Cancer Research and Cell Biology (CCRCB), Queen's University Belfast and Queen's lead on this innovative programme. "It will also allow us to spare patients the often debilitating side effects of ineffective therapies, thus improving their quality of life", he added.

"This is the type of research that exemplifies the modern approach to cancer care", said Professor Patrick Johnston, Vice Chancellor of Queen's and a principal investigator of the S-CORT Consortium. "I am delighted that Queen's researchers are playing such a prominent role in a UK wide collaborative programme that has the potential to significantly improve the lives of bowel cancer patients," he added.

More than 41,500 people are diagnosed with bowel cancer each year in the UK. A key objective of the S-CORT Consortium is to allow the most effective therapies to be delivered to newly-diagnosed bowel cancer patients. Professor Tim Maughan, Cancer Research UK scientist at the University of Oxford and Head of the S-CORT Consortium, said: "Bowel cancer survival has more than doubled in the last 40 years. But there's still a lot more work to do. Recognising this challenge, we have brought together key partners to develop new ways to tailor treatment to the patients who will benefit the most, and make a significant difference to their chances of beating this common disease."

Margaret Grayson, Chair of the Northern Ireland Cancer Research Consumer Forum said: "We are very excited to be an active part of this research programme that has a clear line of sight to us, the cancer patients."

Craigavon based biotech company Almac Diagnostics are a key partner in the initiative. "We see the potential for industry and academia to work together in partnership to develop new tests that will predict which patients will respond to different therapies", said Professor Richard Kennedy, McClay Professor of Experimental Medicine (CCRCB) at Queen's and Vice President and Medical Director Almac Diagnostics. "This research has the potential not only to improve patient outcomes in Northern Ireland and across the UK, it also can contribute to the local economy," he added.

Professor Manuel Salto-Tellez (CCRCB), Director of the Northern Ireland Molecular Pathology Laboratory and Professor Richard Wilson (CCRCB), Director of the Northern Ireland Clinical Trials Centre are also key members of the Consortium.

"Programmes like S-CORT emphasise CCRCB's vision of Precision Cancer Medicine, using precise state-of-the-art technologies to translate excellence science into clear patient benefit," said Professor David Waugh, Director of CCRCB. "This team based approach that we are nurturing within our Centre is underpinning our success at UK and international levels", he added.

*Stratification in COloRecTal cancer or S-CORT is a consortium made up of the following partners: University of Oxford; Queen's University Belfast; University of Birmingham; University of Leeds; Wellcome Trust Sanger Institute; MRC Clinical Trials Unit; Kings College London; University of Aberdeen; University College London; Almac; Astra Zeneca; Glaxo Smith Kline; Beating Bowel Cancer; Northern Ireland Cancer Research Consumers Forum; European Organisation for Research and Treatment of Cancer; Cardiff University; Ku Leuven; European Alliance for Personalised Medicine; The University of Manchester; European CanCer Organisation.

The funding for S-CORT is split evenly between the Medical Research Council and Cancer Research UK.

NEW APPOINTMENT DR MELISSA LABONTE WILSON

Dr Melissa LaBonte Wilson was appointed to the post of Lecturer in Molecular Oncology and joined the CCRCB in April 2015. Melissa was awarded her PhD at the University of Southern California (USC) in Los Angeles where she was part of the Norris Comprehensive Cancer Center's translational research initiative to accelerate the transition of key laboratory discoveries to advances in clinical medicine. During her PhD, Melissa worked in the laboratory of Dr Robert D. Ladner who remains one of the world's foremost authorities on uracil-DNA repair and mechanisms of resistance to thymidylate synthase-targeted therapies and collaborated closely with Dr Heinz-Josef Lenz, a world expert in mechanisms of clinical drug resistance. The focus of Melissa's PhD was to identify novel and promising therapeutic drug combinations for gastrointestinal cancers and identify the mechanisms of action and drug resistance that underpinned these new approaches. Her work focused on the evaluation and characterisation of two novel classes of chemotherapeutic agents, deacetylase inhibitors (DACi) and small molecule tyrosine kinase inhibitors such as lapatinib and sunitinib and their potential clinical utility in gastrointestinal cancers. This research led to the discovery of a highly synergistic interaction between epidermal growth factor receptor (EGFR)-targeted therapies with DACi and a novel underlying mechanism involving receptor down-regulation and protein destabilisation.

Melissa then accepted a Post-doctoral Fellowship with Dr Lenz and went on to explore the relatively new field involving the tumour microenvironment and its role in cancer. Melissa investigated the role of key cytokines such as interleukin-8 (CXCL8) in tumour development, progression and resistance to commonly used chemotherapies such as oxaliplatin and explored the link between loss of expression of the microbial and cytotoxic peptide Defensin β1 and the development of colorectal cancer. Her research established the potential for therapeutic targeting of both CXCL8 and Defensin β1 in colorectal cancer and led to the establishment of a multidisciplinary team of molecular biologists, clinicians and chemists in a focused medicinal chemistry-based drug discovery project at USC.

In 2012, Melissa was then recruited to Azusa Pacific University just outside Los Angeles where she accepted an Assistant Professorship in the School of Biology and Chemistry. Melissa pursued both CXCL8 and Defensin β1 as the primary focus of her research and continued the drug development program through a collaborative project with Dr Lenz and Dr Nicos Petasis (USC Dornsife Department of Chemistry). This research identified novel, first-in-class small molecule inhibitors of CXCL8 and CXCR2 (the receptor for CXCL8) with significant therapeutic potential and the ongoing evaluation of these molecules and continued characterization of this critical pathway will be the primary focus of her ongoing studies.

CCRCB SUMMER RESEARCH PROGRAMME 2015

The 2015 cohort of 24 summer students started in the CCRCB on Monday 29 June. The students, a mix of biomedical, medicine, dentistry, chemistry and natural science students are studying at QUB, Ulster, Cambridge, Limerick, Cordoba (via Lincoln) and IMC University of Applied Sciences Krems, Austria.

The CCRCB Summer Research Programme began with a welcome from Professor Kevin Prise, Deputy Director, followed by the requisite health and safety briefing before the students met with their supervisors and research teams over coffee in the foyer.

Once again, the CCRCB PIs offered a range of projects on bioinformatics, medicinal chemistry, blood, breast, gastrointestinal and genitourinary cancers, radiation biology and bioinformatics. The results from the projects will be displayed in a poster session on Thursday 20 August in the basement seminar room.

The success of the programme relies on a range of funding streams and the support of the School of Medicine, Dentistry and Biomedical Sciences, CCRCB, Centre of Dental Education, Centre of Biomedical Science Education, Queen's Foundation, Leukaemia & Lymphoma NI, Almac and the Endourological Society must be recognised.

CCRCB's 2015 summer research students with their supervisors

ALMAC DISCOVERY: INDUSTRY IN THE HEART OF CCRCB

Almac Discovery is an oncology company focused on novel research and its translation through to the clinic. Although Almac Discovery is a commercial venture, it sits side by side with academia at the CCRCB in order to foster an environment of scientific creativity married to commercial rigour. With its first drug having hit the clinic this year and a recent set of collaborations with Genentech and Elasmogen it appears that Almac Discovery is coming of age.

Earlier in 2015 the fruits of initial research by Professor Tracy Robson reached a significant milestone when ALM201, a novel peptide therapeutic, moved into a Phase I clinical trial led by Professor Richard Wilson of Belfast City Hospital. ALM201 has multiple modes of action but in this initial investigation, of high grade serous ovarian cancer, it will be the anti-angiogenic properties of the drug that will come to the fore.

The development of ALM201 will be carried out hand-in-hand with a biomarker identified through Professor Richard Kennedy's research, and developed by Almac Diagnostics. This biomarker will identify patients that should respond well to anti-angiogenic treatment and allow stratification. Hence Almac Discovery is hoping to be able to provide the next level of treatment in a disease that has seen little improvement in outcomes in many years. As ALM201 works upstream of most of the growth factors important for vessel development it is hoped that ALM201 will be an excellent monotherapy as well as combination option for clinicians.

More recently Almac Discovery struck a significant deal with Elasmogen, a would-be spin-out from Aberdeen University, in order to collaborate on protein drug conjugates generated from sharks! The shark immune system produces soloMERsTM, small antibody-like proteins, that it is hoped will be able to penetrate deep within tumours before releasing their payload of toxins. Estelle McLean and Natalie Page working at Almac Discovery, within the CCRCB building, have been instrumental in developing the assays required to monitor binding of the soloMERs to the initial target chosen for the collaboration. A particularly difficult task in view of the low levels of the protein involved.

Setting itself a fearless challenge, but recognising the value of novel targeting approaches to cancer therapy, three years ago Almac Discovery decided to enter the 'graveyard area' of trying to identify small molecule inhibitors to ubiquitin specific proteases (USP's). Yet 2015 brought with it not only exquisitely specific and highly potent USP inhibitors but also a collaboration with the oncology giant Genentech worth $14.5M upfront, a two year research collaboration, milestones of $349M as well as royalties. The decision appears to have been well founded.

Professor Tim Harrison, Vice President Drug Discovery, Almac Discovery said: "Inhibitors of ubiquitin specific proteases have been highly sought after, yet remain an elusive drug class, proving difficult to identify despite significant efforts from both pharmaceutical and biotech companies. With the identification of potent selective inhibitors of this important target class we are excited, that as with the kinase class, some years back now, USP's will become tractable with regards to drug development."

The Almac Discovery team at CCRCB

The company still has a long way to travel but with a number of exciting projects in its portfolio it believes that it can start to fulfil its strategic intent of being an early stage, lead optimisation to Phase I ready, project generator for pharmaceutical companies. In working at CCRCB and within the wider Queen's environment that task becomes a little easier.

VISIT OF DR FRANÇOISE MEUNIER TO CCRCB

Dr Françoise Meunier, Director General of the European Organisation for Research and Treatment of Cancer (EORTC) from 1991-2015 visited CCRCB on Thursday 2 July 2015. The SMDBS Gender Equality Office organised a CCRCB Women in Science event – 'An Audience with Dr Meunier' where in an informal interview, Françoise spoke of her life as a medical doctor, clinical academic, principal investigator and Director General of EORTC. During the Q&A session, Françoise shared helpful insights and tips on effective career planning. Following on from this, Françoise gave a thought provoking lecture at the CCRCB Seminar Series entitled 'The current challenges and opportunities of pan-European cancer clinical research: the role of EORTC'.

A large audience learned of the history and development of the EORTC, how it moved from a small organisation of 28 people to a powerhouse for clinical cancer research under Françoise's leadership with 175 employees, over 6,000 new patients enrolled in clinical trials every year and follow up on 50,000 patients. She highlighted the new challenges facing many of the 14 million European cancer survivors with respect to medical insurance, employability, financial services, equality and told the audience of her Special Project and strategic vision to improve the lives of cancer survivors.

Dr Meunier received an honorary degree from QUB at the SMDBS graduation ceremony on Friday 3 July, 2015.

Dr Françoise Meunier (front row, centre) with staff and students who attended the 'An Audience with Dr Meunier' event

NEW INVESTOR CV6 PARTNERS WITH QUB IN MAJOR CANCER R&D PROJECT

With support from Invest Northern Ireland, California based CV6 Therapeutics Ltd has chosen to partner with the Centre for Cancer Research and Cell Biology at Queen's University, Belfast for a highly innovative R&D project. The project, which aims to develop a new drug with the potential to make chemotherapy more effective, represents a total investment of £5.5million in R&D. Invest NI has offered assistance of £2.5million towards the collaboration which includes part funding from the European Regional Development Fund (ERDF), under the Sustainable Competitiveness Programme for Northern Ireland.

With support from Invest Northern Ireland, California based CV6 Therapeutics Ltd has chosen to partner with the Centre for Cancer Research and Cell Biology at Queen's University, Belfast for a highly innovative R&D project. Pictured are Alastair Hamilton, Invest NI, Dr Robert Ladner, CV6, Prof David Waugh, CCRCB, and Dr Karl Mulligan, CV6 (photo by Parkway Photography)

Alastair Hamilton, CEO of Invest NI said: "Minister Foster and I met with CV6 last year at the Bio International Conference in San Diego which gave us the opportunity to help secure this investment for Northern Ireland. This project not only has the potential to result in advancements in cancer treatment worldwide but will deliver significant supply chain economic benefits to Northern Ireland of £1.85million. Dr Robert Ladner CEO of CV6 and a world leading expert on mechanisms of drug resistance will relocate to Northern Ireland with his senior team to lead this project. This is a very positive announcement for the life sciences sector in Northern Ireland and is a further endorsement of Northern Ireland's strengths in precision medicine and oncology research."

This latest announcement adds to the growing momentum of successful academic-industrial partnerships being forged at the Centre for Cancer Research and Cell Biology at Queen's University Belfast.

Dr Robert Ladner, CEO of CV6 said: "Our research so far has focused on the identification of drug targets which show resistance to extensively used chemo-therapy drugs. The R&D we will undertake during this project has the potential to significantly improve and supercharge chemotherapy in a range of cancers by reducing drug resistance and in turn deliver significant economic benefits and advancements in cancer treatments worldwide. The quality and availability of specialist skills here and the strong links we have forged with Queen's University were key factors when we chose Northern Ireland as the location for this project. Northern Ireland offers a wealth of talented and knowledgeable people some of whom have already played a vital role in our progress to date. Our work is extensive and would not be possible without the support of Invest NI in enabling this project to advance. As we progress we hope we will deliver a new drug that significantly improves patient response and clinical outcomes for major cancer diagnosis globally."

Professor David Waugh, Director, CCRCB said: "We are delighted to welcome CV6 into our collaborative research programme. Attracting CV6 Therapeutics to join our mission in Belfast is further evidence of the international reputation that the University is developing in undertaking cutting edge research. Resistance to chemotherapy drugs is a major factor in the failure of many forms of chemotherapy and the collaboration with CV6 Therapeutics will seek to deliver innovative new therapeutic approaches to tackle this problem. Importantly, the work stemming from this investment will provide further hope to many cancer patients, locally and globally".

SOAPBOX SCIENCE

There was a unique buzz in Botanic Gardens on Saturday 20 June 2015 when Belfast hosted its first Soapbox Science event. Soapbox Science is a unique women-only event whose format is based on Speakers Corner in Hyde Park. In Belfast twelve women got on their soapbox to talk about their science, inform people about their work and entertain. The weather cooperated providing a warm sunny day, and there were over one thousand people in the park.

Cancer Research UK supported postdoc Kerry Hughes from the chemistry lab, whose topic was "DNA damage, using chemistry to treat biochemistry". She used her audience members to make a DNA double helix and explained targeted therapy using ping pong balls (you need a good aim!). She then talked about the process of 'unlocking' the understanding of a tumour before beginning to research and test drugs that might target it. Kerry's talk appealed to both kids and adults, and had some of the biggest audiences on the day!

Professor Tracy Robson from the School of Pharmacy also participated on the day with her talk "Discovery of a new drug to target tumour blood vessels and drug resistant cancer stem cells". Tracy used string to show DNA and the particular bit of it that she used to create the new drug, and a balloon to illustrate how this new treatment stops angiogenesis, killing the tumour. Tracy had lots of audience questions as this new drug for ovarian cancer is beginning clinical trials here in Belfast this summer.

Dr Kerry Hughes explaining targeted therapy

FIRST TRUST BANK QUEEN'S STUDENT OF THE YEAR AWARD

The winner of the annual First Trust Bank Queen's Student of the Year Award is Dental student Laura Graham from Portglenone, Co Antrim. Laura was chosen for her international academic success and for her role in student music. The Award, which is presented by the Queen's Graduates' Association (QGA) with generous backing from First Trust Bank, is one of the highlights of Graduation Week. Now in its 17th year, it recognises exceptional students for excellence, achievement or service either to the University or to the wider community.

Student of the Year Award, Laura Graham

Speaking ahead of the presentation Mark McKeown, Manager of First Trust Bank University Road, said: "We have been supporting these important Awards since their inception and are very proud to be associated with such a stand-out event in the University calendar. Our endorsement recognises and celebrates the achievements of all those Queen's students who make such an invaluable contribution to life in Northern Ireland and beyond. This year's Student of the Year – Laura Graham – is an inspirational role model for all students but especially those considering undertaking postgraduate research."

While taking a year out from her Dentistry studies to complete an intercalated Master's Degree of Research at the Centre for Cancer Research and Cell Biology (CCRCB), Laura focused on the role of p63 and BRCA1 in Oropharyngeal Cancer – genes which are linked to early-onset of breast and ovarian cancer. She was then selected to represent the Irish division at the International Association of Dental Research annual conference in Boston, Massachusetts in May where she won the Junior Researcher Hatton Award, the most prestigious student research prize in world dentistry. In addition to a lead role in the St Vincent de Paul society at Queen's, Laura was also actively involved in the student orchestra (where she played violin) and was a soprano in the Chamber Choir. Last year she received a Degree Plus award for time spent with the Choir. Feargus McCauley, President of the QGA who delivered the Student of the Year citation, believes that the First Trust Awards are an acknowledgement of all that is best about Queen's. He said: "With the recent opening of the Graduate School at Queen's, the University is poised to be a powerhouse of postgraduate research. "This year's Student of the Year Award recognises the achievement and impact of a gifted researcher, an exemplary master's student, and a person of great tenacity and commitment. Laura Graham richly deserves recognition this year."

The Student of the Year receives a trophy and £500.

ALL-IRELAND CANCER CONSORTIUM CONFERENCE 2015

The All-Ireland Cancer Consortium Conference – 'New Horizons for Cancer: removing Boundaries' took place in Belfast from 11 - 13 May 2015. Around 250 delegates attended and the programme comprised around 70 local, national and international speakers. Speakers at the plenary session included Fabien Calvo, Chief Scientific Officer of Cancer Core Europe, Jill Farrington, WHO Regional Office for Europe and Declan Walsh, Trinity College Dublin. Sessions were organised around the AICC workstreams which include population health and survivorship.

A Patients and Charities Session entitled 'Reclaiming Life after Cancer' was held on Sunday 10 May and speakers included Ian Banks, Chair, ECCO Patient Advocacy Committee.

Fabien Calvo (Chief Scientific Officer, Cancer Core Europe), Harry Comber (Director, National Cancer Registry, Ireland), Deirdre Mulholland (Deputy Chief Medical Officer, Department of Health, RoI), Lee Helman (National Cancer Institute), Julia Rowland (Director, Office of Cancer Survivorship, NCI), Mark Lawler (CCRCB), Jill Farrington (WHO Regional Office for Europe), David Waugh (Director, CCRCB)

PRIZES AND MEASURES OF ESTEEM

Congratulations to the winners of the CCRCB Postgraduate Student Symposiums which took place during the Spring Semester. Pictured with Professor Mark Lawler are **Niamh McGivern** (third year), **Peter Gilliland** (second year) and **Stephanie Craig** (first year).

Congratulations to **Professor Patrick Morrison** who has been elected Vice President of the Ulster Medical Society for 2016.

Dr Peter Bankhead was awarded joint first place in the Cancer Research category at the All Ireland Cancer Consortium Conference in May 2015 for his poster presentation entitled 'QuPAth: A general framework for visualisation and quantification of tissue biomarkers in whole slide images'. **Miss Kathryn Clarke** was also awarded a prize her oral presentation entitled ' Integrated analysis of both biological and molecular effects of the epigenetic modifying agent Romidepsin in MDS/AML'.

Dr Mihaela Ghita was awarded a Young Scientist Travel Award to present her work at the 12th International Workshop on Microbeam Probes of Cellular Radiation Response held in Tsuruga, Japan, on 30 May - 1 June 2015.

Dr Kyle Matchett was awarded the inaugural Professor John Fitzpatrick Prize for the Best Oral Poster Presentation at the IACR Annual Meeting held in Limerick on 26 - 27 February 2015.

Dr Eileen Parkes was awarded a Dr Gary McGowan Friends of the Cancer Centre Scholarship of £2,000. This annual award is given in memory of Dr McGowan, an oncology registrar who died in 2010.

Dr Philip Turner won best complex case presentation at the All Ireland Annual Radiation Oncology Update Meeting which took place in April 2015 in Cork.

Miss Dominique French and **Miss Emma Waring** have been awarded prestigious Scholars in Training Awards from the US Radiation Research Society to present their work at its annual meeting being held in Weston, Florida, USA in September 2015.

GREEN IMPACT AWARDS

The Green Impact Awards Ceremony took place on 27 May 2015 in Riddel Hall. The CCRCB team received the bronze award for the CCRCB offices and labs. The Medicinal Chemistry Laboratory on the third floor received the gold award. This is the first year that CCRCB have participated in the scheme.

Kerry Hughes and Kirsty McLaughlin were awarded the Environmental Champion award for their initiative in starting a polystyrene (EPS) recycling scheme on the MBC site involving four centres.

The CCRCB Green Impact Team would like to thank everyone in CCRCB for their support and help.

Kerry Hughes receives the Environmental Champion award from the Registrar and Chief Operating Officer, James O'Kane

QUEEN'S PROFESSOR LAUNCHES CALL TO ACTION FOR PERSONALISED CANCER CARE ON WORLD METASTATIC COLORECTAL CANCER DAY

Colorectal cancer is the second most common cancer in Europe with over 212,000 deaths from the disease in 2012. It is particularly difficult to treat when it metastasizes to other parts of the body. Metastatic colorectal cancer (mCRC) has a very poor prognosis, with 5 year survival rates of 12%. World Metastatic Colorectal Cancer Cancer Day (24 March 2015), marked the launch of the "Get Tested" Campaign, an International Colorectal Cancer Association (ICCA) initiative to ensure that patients get access to appropriate diagnostic tests to ensure best quality personalised cancer care.

ICCA is a global initiative bringing together a multi-disciplinary group of stakeholders with an interest in the management of mCRC and improved patient care. Speaking as he launched the White Paper entitled "Ras Biomarker Testing: Improving Patient Outcomes in Metastatic Colorectal Cancer", to Members of the European Parliament and other interested stakeholders in Brussels, Professor Mark Lawler, Chair in Translational Cancer Genomics, Centre for Cancer Research and Cell Biology, Queen's University Belfast and Chair, Research Subgroup, European Alliance for Personalised Medicine (EAPM) highlighted the absolute need to embed molecular diagnostics into colorectal cancer care.

"The Future of Personalised Medicine is now", said Professor Lawler. "The initiative that we are launching today emphasises how testing for a particular gene called RAS allows us to tailor therapy to the individual patient and its widespread uptake by national health systems will ensure improved care for colorectal cancer patients throughout Europe", he added.

"For patients newly diagnosed with metastatic colorectal cancer, having a RAS biomarker test before starting first-line treatment is extremely important", said Professor Fortunato Ciardiello, Chairman of the ICCA, President-Elect of the European Society for Medical Oncology and Professor of Medical Oncology at the Seconda Università degli Studi di Napoli in Naples, Italy. "RAS tests can help select the most appropriate treatment as part of a patient's personalised treatment plan. Our campaign website gives patients more information on metastatic colorectal cancer and RAS testing so they can better understand the options available to them and discuss these with their physician."

Speaking at the campaign launch in Brussels, Elisabetta Gardini, MEP, Head of the Italian European People's Party said: "metastatic colorectal cancer is an example of a disease where selecting a 'personalised', or 'precision', medicine

Get tested
UNLOCK YOUR TREATMENT OPTIONS

approach through the use of biomarkers can potentially make a real difference to treatment success for patients. We need to rapidly reach a point where all European citizens, and those in other regions around the world, can be confident that appropriate diagnostic testing will be available following diagnosis of mCRC, wherever they are living."

The "Get Tested Campaign" and the Call to Action that was launched in Brussels, call on the European Parliament to ensure that RAS testing is available for treatment decision-making for all mCRC patients in Europe.

NI CANCER RESEARCH FORUM CONTRIBUTE TO CONFERENCES

Members of the NI Cancer Research Consumer Forum (NICRCF) have contributed to recent conferences. In May 2015, members of the NICRCF attended the Patients and Charity Session of the AICC Conference. This evening event, entitled 'Reclaiming Life after Cancer' involved discussion sessions, and various speakers, including Julia Rowland, Director of the Office of Cancer Survivorship, NCI. Margaret Grayson (NICRCF Chair) and Ruth Boyd (CRUK Senior Research Nurse) gave an oral poster presentation on Personal and Public Involvement (PPI) in cancer research in NI at the parallel session on clinical trials during the main conference.

There was also excellent representation of NICRCF at the National Cancer Intelligence Network Conference held in Belfast on 8 - 10 June. Margaret Grayson was one of the opening plenary speakers, advocating listening to the patient voice on issues relating to patient data. A poster describing the partnership working of the NICRCF and the NI Cancer Registry won 1st prize in the Day 2 Patient Choice category.

NICRCF members Dori-Anne Finlay Blackstock, Kate Burns, Hazel Fisher, Janine McCann, Margaret Grayson with Dr Anna Gavin, Director, NI Cancer Registry at the National Cancer Intelligence Network Conference

RACE FOR LIFE/PRETTY MUDDY

Cancer Research UK's premier women-only fundraising event, Race for Life, had some changes for 2015. This year the new Pretty Muddy obstacle run was added on Saturday 31 May, taking place in Ormeau Park. Lots of muddy women at the end but all had a great time – no doubt it will be even bigger in 2016! And Race for Life on Sunday 31 May at Stormont had a new 10k distance race in the afternoon in addition to the usual 5k morning race.

Nearly 6,500 women participated in the weekend's events and pledged an amazing £350,000 for Cancer Research UK's work.

Cancer Research UK-funded scientists and research nurses attended on the day, cheering on everyone who participated and handing out medals at the finish line.

Vicky Bingham, Gaurang Patel, Margaret Carr, Ruth Boyd, Sharon and Jake Dunwoody at Pretty Muddy

Pamela Maxwell, Keara Redmond, Margaret Carr and research nurse Kirsty at Race for Life

SENTINUS BIG BANG EVENT

In June, Cancer Research UK once again brought interactive activities to the Sentinus Big Bang Young Innovators event – the highlight of the year for STEM subjects. The event moved to the Sports Hall at Ulster University Jordanstown this year, and over 3,000 primary and secondary students attended; over 275 of them got involved in the activities delivered by nine of our scientists. Alongside the repeat activity of extracting DNA from a strawberry, students could make their own fire extinguisher and test the pH of a range of household products. This event is a great way to engage a large number of both primary and secondary students who are interested in science, and an excellent way to promote cancer research as a key science career.

School pupils visiting the CRUK stand

Dr Julia Miskelly at the Sentinus Big Bang event

NEW ALLIANCE TO CHAMPION PREVENTATIVE APPROACH THAT CAN SAVE THOUSANDS OF LIVES IN NORTHERN IRELAND

Participants of the Round Table meeting held at Stormont

In a Round Table meeting in Stormont, hosted by MLA Paula Bradley, a collaborative alliance was formed to develop a universal vaccination strategy to tackle Human Papilloma Virus (HPV), which causes at least 5% of human cancers. While an effective vaccination programme is in place for cervical cancer, HPV is also implicated in other cancers including head and neck cancer and anal cancer which affect males as well as females. HPV is also a major contributory factor to sexually transmitted disease, a particularly topical area given the data that has just been released by the Public Health Agency on the increase in sexually transmitted disease in Northern Ireland. The new alliance has a broad membership with cross party political support, bringing together all stakeholders in a united effort to prevent the preventable, through a vaccination strategy that will protect both men and women from HPV driven disease.

Welcoming the attendees, Paula Bradley MLA said: "I am a cervical cancer survivor and I am passionate about this initiative. Universal vaccination is a win-win situation – leading to better health outcomes for all members of our society and at a fraction of the cost that we are currently paying to treat HPV related cancers and sexually transmitted infections."

In his opening address Dr Ian Banks, President of the European Men's Health Forum (EMHF) and Honorary Senior Lecturer (CCRCB) said: "The evidence base is becoming overwhelming – the clock is ticking – how many more people have to die or suffer significantly before we act?". This initiative was launched in International Men's Health Week, highlighting how HPV causes cancer and sexual health issues in both men and women.

Dr Donna Graham, Clinical Research Fellow from CCRCB highlighted the cost savings that can be achieved through a universal vaccination approach, drawing on her experience from a cost effectiveness study she conducted at the Princess Margaret Hospital in Canada, where universal vaccination has been introduced in a number of provinces. "This research, which we recently published in the journal Cancer, the Journal of the American Cancer Society, highlights the significant cost savings that can be achieved through the prevention of oropharyngeal cancer (the most common form of head and neck cancer) if a universal vaccination strategy is pursued" she said.

From a Northern Ireland context, Dr Gillian Prue, also from Queen's University Belfast, showed the evidence base for the numbers of cancers that could be prevented with a universal vaccination programme. "Introducing a universal vaccination strategy in Northern Ireland makes sense", said Dr Prue, "as it will lead to improved survival rates and a better quality of life."

Maeve McLaughlin MLA and Chair of the Health Committee said: "HPV knows no geographical boundaries – there is a clear opportunity to develop an all island solution to this escalating problem, building on the cross border partnerships in health that have been forged over the last number of years."

"The time has come for us to lead the UK in a major public health initiative - there are significant health inequalities in our society - a universal vaccination approach provides a way in which we can really make a difference for all of our citizens, both men and women," said Professor Mark Lawler, CCRCB and European Cancer Concord who chaired the Round Table at Stormont.

STAFF WELLBEING

As part of the University's ongoing commitment to promoting and supporting staff wellbeing each School has drawn up a Health and Wellbeing Action Plan. Within the School of Medicine, Dentistry and Biomedical Sciences the programme is being led by Dr David Norwood, the School Safety Services Officer. Each Centre within the School has appointed a Wellbeing Champion to assist David in his role and Mrs Beryl Graham is the nominated Wellbeing Champion for CCRCB.

In order to ensure that there are effective communication mechanisms within the Centre, a suggestion box has been placed at the CCRCB Reception for staff and students to provide comments/ suggestions. The comments will be reviewed on a monthly basis and will be discussed at Senior Management Team and Health & Safety Committee meetings so that appropriate action can be taken where relevant.

The University currently offers a number of events throughout the year to promote staff wellbeing, from seminars on diet, to activity classes and health checks. For example, in August the University has organised walking tours in Botanic Gardens. Details of the staff wellbeing events will be circulated regularly to all CCRCB staff and students. Other services and facilities available include the Staff Perks Scheme, Occupational Health and Carecall which is a professional counselling service available to all staff. Full details on the University Staff Wellbeing Programme and how to register for an event can be found at www.qub.ac.uk/sites/wellbeing.

DONATIONS TO CANCER RESEARCH

A big thank you again to the Campbell family and friends for their significant donation of £3,200 to support Breast Cancer Research within the Centre. The funds were raised through an annual golf competition in memory of Sandra Campbell. This is the 20th year that the family have been organising this golf competition and the Centre is extremely grateful for their continuing commitment to support our research. Pictured from left (back row) Peter Campbell, Vincent Campbell, John Campbell, Kienan Savage (CCRCB), Michelle Napier and (front row) Yvonne O'Neill and Audrey Mallon.

Sisters Anne Campbell, Eleanor McMullan and Mary Kelly participated in the Belfast Marathon, raising £5418.85 for CCRCB

Queen's Foundation Marathon Success: Congratulations to the Casey family who participated in the Belfast Marathon 2015. Three sisters Anne, Mary and Eleanor completed the 8 mile walk while other family members participated in the full marathon as part of a relay team. They raised a fantastic £5418.85 for breast, ovarian and prostate cancer research. Kathryn Williams also completed the marathon and raised £3315.19 for prostate cancer.

David McGibbon from CCRCB receives a donation of £1,000 presented by Ms Toner (form teacher of winning Year 8 class), Mrs Elmore (Head of Year 8), Mr Mc Govern (Headmaster) and Oriel 8 pupils Jack Shields, John Mc Govern and Caolan Whitmarsh

Abbey Christian Brothers Grammar School in Newry made a donation of £1,000 to CCRCB, which was raised as part of the Sports/Fun Day held on Wednesday 20 May 2015. Pupils gave a £1 donation to participate, and each class gained points throughout the day with the winning class in each Year Group selecting a charity they wished to donate the money to. The winning Oriel class in Year 8 chose to support brain tumour and prostate cancer research in CCRCB.

Fundraising Manager Rachel Ketola with Mrs Anne Bell, Principal of Coleraine High School

Changing Times: All profits from a new book celebrating the history of Coleraine High School will be supporting breast cancer research in CCRCB. The book, 'Changing Times' is the brain child of current Principal, Mrs Anne Bell and traces the history of the school which started out as 'Gordonville Ladies School' in 1874.

Professor David Waugh attended the launch of the book at a recent dinner of the Old Girls Association in the Lodge Hotel and gave an overview of the work ongoing in breast cancer research.

Contact Rachel Ketola, Fundraising Manager (Medicine) on 028 9097 5073 or email r.ketola@qub.ac.uk to find out how to purchase a copy.

RECENT GRANTS AWARDED

Investigator(s)	Sponsor	Title	Amount	Start Date	End Date
Beirne, James	British Medical Association	DNA Methylation Markers for Early Detection of Ovarian Cancer: The Key to Successful Population Screening	£42,782	01/09/15	31/08/18
Coyle, Vicky	Cancer Research UK	Predicting Response to Treatment of Neutropenic Sepsis in Adult Patients with Cancer – Clinical Research Fellowship (Caroline Forde)	£260,000	01/10/15	30/09/18
Irvine, Sandra	Leukaemia & Lymphoma NI	Salary for Post Doctoral Research Fellow – Dr Lisa Crawford	£23,310	01/08/15	31/01/16
James, Jackie	Cancer Research UK	ECMC – Stratified Medicine	£10,500	01/01/15	31/12/15
Ladner, Robert	Invest NI	Developing Novel Combination Therapies to Overcome Critical Drug Resistance Pathways in Cancer	£670,439	01/04/15	31/03/17
Longley, Dan Scott, Chris Andrews, Gavin Bell, Steven	Medical Research Council CiC	Development and Delivery of Gold Nanoparticles for Oesophageal Adenocarcinoma	£67,688	01/07/14	31/08/16
McArt, Darragh	Cancer Research UK	The Integrative Landscape of Primary and Recurrent Glioma for Dynamic Biomarker Discovery – PhD Studentship (Aideen Roddy)	£141,390	01/10/15	30/09/19
Salto-Tellez, Manuel Hamilton, Peter James, Jackie Kennedy, Richard Lawler, Mark Waugh, David	CRUK Centres Network Accelerator	A National Digital Pathology and Image Analysis Platform for Solid Tumours, complemented by A Comprehensive Clinical Fellowship Programme in Molecular Pathology	£3,753,474	01/07/15	30/06/20
Salto-Tellez, Manuel	Technology Strategy Board	STRATFix: Enabling Stratified Medicine with Novel Fixatives for improved Pre-Analytical Pathology	£46,864	01/10/14	30/09/17
Waugh, David	Cancer Research UK	CRUK Centre Core Infrastructure Support	£512,500	01/04/15	31/03/16

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NEW APPOINTMENTS

Welcome to the following new staff recently appointed to the Centre:

Academic Staff:
Dr Melissa LaBonte Wilson
Dr Robert Ladner

Clinical Research Fellows:
Dr Aideen Campbell
Dr Rosie Douglas
Dr Caroline Forde
Dr Suzanne McPherson
Dr Adam Uprichard

Research Staff:
Dr Anna McCormick
Mr Richard Wilkinson

Technical Staff:
Mr Conor Breen

Clerical Staff:
Mr Colin Carberry

Visiting Researchers:
Dr Sean Hynes
Dr Lotte Kaasgaard Jakobsen
Dr Priya Lakshmi
Dr Gemma Logan
Mr Martin McCann
Dr Cheryl McFarlane
Ms Kylie McLaughlin
Ms Karina Trelborg

Honorary Staff:
Dr Graham Cotton
Dr Deirdre Donnelly
Dr Gerald Gavory
Dr Rob Grundy
Dr Nuala McCabe
Dr Colin O'Dowd
Dr Steve Walker

STAFF PROMOTION

Congratulations to Dr Paul Mullan who has been promoted to Reader.

EVENTS

Beatson Workshop on Next Generation Cancer Biology
6 - 8 September 2015
Cancer Research UK Beatson Institute, Glasgow
For further information and registration please refer to:
http://www.beatson.gla.ac.uk/beatson-workshop/beatson-workshop.html

2nd International Symposium on Clinical and Basic Investigation in Glioblastoma
9 - 12 September 2015
Fábrica de armas Campus, Toledo, Spain
For further information and registration please refer to:
http://gbm2015.com/

2nd Annual Meeting of the International Society of Cancer Metabolism (ISCaM)
16 - 19 September 2015
Venice, Italy
For further information and registration please refer to:
http://www.iscams.org/meetings

8th Annual Royal Marsden Breast Cancer Meeting 2015
2 October 2015
Royal College of Physicians, London
For further information and registration please refer to:
http://www.royalmarsden.nhs.uk/education/education-conference-centre/study-days-conferences/pages/2015-breast-meeting.aspx

NCRI Cancer Conference
1 - 4 November 2015
BT Convention Centre, Liverpool
For further information and registration please refer to:
http://conference.ncri.org.uk/

The 16th International Meeting on Human Genome Variation and Complex Genome Analysis
11 - 13 November 2015
UCSF Mission Bay Conference Center, San Francisco, USA
For further information and registration please refer to:
http://hgvmeeting.org/

Comments on the CCRCB Bulletin or suggestions for future editions should be forwarded to **katie.stewart@qub.ac.uk**