

OFFICIAL OPENING OF NI-MPL AND NI BIOBANK

On Wednesday 9 January 2013 the Northern Ireland Health Minister, Mr Edwin Poots, officially opened the Northern Ireland Biobank and the Northern Ireland Molecular Pathology Laboratory (NI-MPL). Mr Poots spoke of how this new development would help to put Northern Ireland at the leading edge of research and diagnostics in Europe and internationally. In addition to the speakers pictured below, Professor Nic Jones, Chief Scientist, Cancer Research UK, Professor Bernie Hannigan, Chief Scientific Advisor to the Department of Health, Social Services and Public Safety and Director of HSC Research & Development, and Professor Patrick Johnston, Dean of the School of Medicine, Dentistry and Biomedical Sciences also contributed to the formal opening ceremony.

A DVD highlighting the activities of the NI Biobank and the NI-MPL concluded the opening ceremony. The Centre was pleased that the family of Séan Crummey attended the official opening, given the significant funding that they are raising through the Séan Crummey Memorial Fund to support a PhD studentship in the NI-MPL.

The new facility, located in the basement of CCRCB, is a partnership between Queen's University Belfast and the Belfast Health and Social Care Trust. It is the first integrated laboratory of its kind in the UK and Ireland and is set to revolutionise cancer research and diagnosis for thousands of patients across Northern Ireland. Solid tumour samples are being examined at a molecular level which will help oncologists tailor individual treatments to individual patients, offering a new era of personalised medicine in Northern Ireland. It will also advance meaningful research in new cancer diagnostics and new cancer treatments. Professor Manuel Salto-Tellez, Professor of Molecular Pathology at Queen's and lead researcher within NI-MPL said: "Our distinctive combination of molecular diagnostics and research under the one roof, supported by the Biobank, makes this facility unique in these islands."



Pictured left to right are: Queen's Vice-Chancellor and President, Professor Sir Peter Gregson; Professor Manuel Salto-Tellez, QUB/ BHSCT; Health Minister, Edwin Poots; Chief Medical Officer, Dr Michael McBride and Mr Colm Donaghy, Chief Executive, BHSCT

The NI Biobank, led by Dr Jackie James, is establishing a broad collection of solid tumours, specifically focusing on colorectal, breast, head and neck, gynaecological, prostate and lung cancers and patients are asked to consent for the collection of tissue samples. The QUB digital pathology programme, one of the leading programmes of its kind in the UK and Ireland, was developed as a state-of-the-art facility



Leads of the NI-MPL Professor Manuel Salto-Tellez (pictured right) with Dr Jackie James (NI Biobank) and Professor Peter Hamilton (Digital Pathology)

by Professor Peter Hamilton and is now fully integrated as a key component of the overarching molecular pathology programme.

The launch event concluded with a series of talks in the afternoon by the President of the Royal College of Pathologists, Professor Archie Prentice, Professor Stephen Finn, Associate Professor of Pathology and Consultant Histopathologist, St. James's Hospital and Trinity College Dublin, Mr Derek Stewart, patient advocate representing the Confederation of Cancer Biobanks, Dr David Gonzalez de Castro, Head of Molecular Diagnostics, Institute of Cancer Research and Royal Marsden Hospital and Professor Manuel Salto-Tellez. This was an important day for the Centre as it highlighted Northern Ireland as one of the current leaders in molecular pathology and biobanking nationally. It stressed a new model of partnership to move academic medicine forward for the good of our patients and in support of our cancer researchers.

ROBIN MENARY FOUNDATION MAKES MAJOR DONATION TOWARDS BRAIN CANCER RESEARCH



The Robin Menary Foundation recently presented Dr Tom Flannery with a cheque for £17,000 towards brain cancer research. The Foundation was set up in the autumn of 2011 following Robin's death from brain cancer. Robin's family were determined to do something to raise money in his name and help fund research into brain tumours. None of the three trustees who set up the Foundation had any previous experience of charity work or fundraising but they have been overwhelmed by the support of Robin's friends, colleagues and people who never even knew him. They would like to thank everyone who has contributed to raising the donation.

Mrs Nicola Boyd and Mrs Patricia Menary (Robin Menary's sister and mother) present Dr Tom Flannery with a cheque for £17,000

FIGHTING CANCER WITH COMPUTERS

Contemporary cancer research produces an astonishing amount of data with high-throughput technologies like proteomics, microarrays or sequencing approaches. For this reason computerbased methods are required to explore, visualize and analyze such data by means of algorithms. Dr Frank Emmert-Streib and his colleague Professor Matthias Dehmer (UMIT, Austria) teamed up to edit the book 'Statistical Diagnostics for Cancer: Analyzing High-Dimensional Data', published by Wiley-Blackwell. This book provides a valuable collection of chapters addressing important topics that are centered around a sensible statistical analysis of the data.

Due to the breathtaking progress made during recent years, many experimental approaches that originated in molecular and cellular biology are now on the verge of entering medical and clinical practice. For this reason, a major goal of the book is to advocate and promote novel analysis methods that hold great promise of being beneficial for prognostic and diagnostic purposes in systems and personalized medicine.

Dr Frank Emmert-Streib said: "Despite the intriguing opportunities we are having nowadays in many areas of science, it is important to ensure that a conducted data analysis of any kind uses appropriate statistical approaches. However, in cancer research this is even more important because the data relate to real people. Our book aims to advocate a general awareness of this aspect and to provide an insight into current developments."



PROMOTING PUBLIC ENGAGEMENT

In December, Dr Pamela Maxwell gave a talk to staff and students from across Queen's about the importance of communicating the impact of research to the public. The talk was part of a public engagement skills workshop developed by Queen's.

As a CR-UK funded scientist, Dr Maxwell regularly gives talks to community groups, hosts lab tours in the CCRCB and attends CR-UK fundraising events to raise the profile of her work and the Belfast CR-UK Centre. This engagement helps to increase public understanding about the impact that cancer research is having on cancer diagnosis, treatment and survival rates.

The public engagement training event was a great opportunity to showcase the commitment that researchers in CCRCB have to public engagement and the breadth of activities that take place in the CCRCB and out in the community.

CHIEF EXECUTIVE OF MOVEMBER VISITS CCRCB

The Centre for Cancer Research and Cell Biology was delighted to host Paul Villanti, the Chief Executive of Movember, during his recent visit to the UK in February. Paul spent two busy days in Belfast, meeting the many stakeholders concerned with Men's Health issues and specifically prostate cancer from within the University, the Belfast Health and Social Care Trust, and the local cancer charitable sector.

During his visit, Paul joined those brave individuals from CCRCB who grew moustaches in November, raising almost £1,000 for prostate cancer research. In the few years that the Movember movement has been in existence, it has transformed the global research landscape for prostate cancer. Paul was given insights into the clinical and scientific prostate cancer research ongoing within CCRCB and the Northern Ireland Cancer Centre. In keeping with Movember's current global action plan around promoting well annotated prostate cancer tissue for research, he was especially impressed with his tour through the NI Molecular Pathology Laboratory and its digital pathology capabilities.



Paul Villanti (centre) visiting the CCRCB in February

VISIT FROM CHIEF EXECUTIVE OF BREAST CANCER CAMPAIGN

Baroness Delyth Morgan and her team from Breast Cancer Campaign made a site visit to CCRCB in November in order to view and publicise the Campaign-funded breast cancer research taking place here. Professor Kevin Prise and Dr Paul Mullan are currently funded by the Breast Cancer Campaign. Dr Jennifer Quinn has recently completed her Breast Cancer Campaign-funded Scientific Fellowship and Dr Niamh O'Brien has now commenced her five year Scientific Fellowship, which is also funded by the charity. On the day of the visit, all of the researchers presented their research and Baroness Morgan was provided with a tour of the Northern Ireland Molecular Pathology Laboratory and the second floor laboratory.

During Baroness Morgan's visit she was presented with a cheque for £575, which were the proceeds of the CCRCB's Wear it Pink coffee morning held in October. The coffee morning is held annually to raise funds for the Breast Cancer Campaign.



Dr Jennifer Quinn presents Baroness Morgan with a cheque for £575, raised by the CCRCB's Wear it Pink coffee morning. Also photographed are Dr Keara Redmond and Ms Paula Haddock



Teacher Hazel Carson and two of her pupils from Wellington College, Belfast, also presented Baroness Morgan with a cheque for £800, which they raised from their school's Wear it Pink Day. Hazel is a member of BRCA Link NI and hosted with Dr Jennifer Quinn an information day for families affected by the BRCA gene mutation at the CCRCB on Friday 26 October

QUEEN'S AND CR-UK LAUNCH NEW COMPETITION FOR SCHOOLS

Queen's University Belfast and Cancer Research UK have joined forces to launch an exciting new science competition to inspire the next generation of cancer researchers. The competition is open to all AS Level Biology students living in Northern Ireland.

Students are being asked to produce a poster to promote and raise funds for cancer research in Northern Ireland.

Shortlisted students will be invited to spend a day at the CCRCB in September 2013. During the day they will have a chance to spend time in the labs, learning techniques used in cancer research relevant to the A Level Biology specification, such as PCR and DNA extraction. There will also be an opportunity for them to take part in a career speed dating session with researchers involved in different types of cancer research.

The winner of this science competition will be announced during the day at CCRCB, receiving the prize of an iPad.

We hope the competition will encourage students across Northern Ireland to pursue a career in cancer research at Queen's.

For more information, visit www.qub.ac.uk/ ccrcb/competition or email belfastcentre@cancer.org. uk.

The competition is kindly sponsored by Almac.



AS Level Biology students Emma Campbell and Luke Smart, from Methodist College in Belfast, join Professor David Waugh in CCRCB to mark the launch of the new schools competition

A LEVEL TEACHER PLACEMENT AT CCRCB

Barbara Paul, an A Level Biology teacher at Rainey Endowed School in Magherafelt, recently enjoyed a two day placement at CCRCB. The placement was organised by Professor Ken Mills and Katie Stewart.

Ms Paul received a CEIAG STEM Teacher Placement Bursary and used it to find out about the career options in cancer research available at Queen's. During her visit she met with staff across the Schools of Pharmacy and Nursing, as well as the CCRCB, Northern Ireland Cancer Centre and Cancer Research UK.

Ms Paul will use the visit to inspire her students to pursue a career in cancer research and report back to students and teachers at her school about the skills required for different careers in the field.

CANCER, WE'RE COMING TO GET YOU!

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Ladies. It's time to show cancer who's in charge at Cancer Research UK's Race for Life. Join in by running, walking or dancing your way around the course at Stormont on Sunday 2 June 2013.

Race for Life in 2012 was a huge success across Northern Ireland – raising an incredible £287,150 for research that will help bring forward the day when all cancers are cured. Let's show the people of Northern Ireland how much researchers at CCRCB value all they do to raise funds for cancer research by joining them on the course this year. To sign up, go to www.raceforlife.org.



Take part in Race for Life on Sunday 2 June

ROCHE PRIZE WINNER 2012

Congratulations to Dr Adam Pickard, post doctoral research fellow in Professor Dennis McCance's research group, who has been awarded the Roche Prize for 2012. Dr Pickard was presented with a medal and cheque for £400 at the Centre for Cancer Research and Cell Biology on 30 November 2012. The winning presentation was entitled 'Inactivation of Rb in stromal fibroblasts promotes epithelial cell invasion.' The talk was on a paper of the same title which was published in the EMBO journal, EMBO J. (2012) 31, 14: 3092-103.

The Roche Researcher of the Year Award is an event launched by Roche Diagnostics Ireland designed to highlight and support excellence in life science research within the academic centres of Ireland, both in the Republic and Northern Ireland.



Dr Adam Pickard is presented with the Roche Prize by Professor David Waugh, CCRCB Director, and Julie McAlinden, Roche representative

PRIZES AND AWARDS

Congratulations to Dr Aidan Cole who has been awarded the ESTRO (European Society for Radiotherapy and Oncology) Accuray Award for his work on 'Radiobiological implications of respiratory motion in the treatment of lung cancer radiotherapy.' Aidan will receive his award and present his work at the ESTRO meeting being held in Geneva from 19 - 23 April 2013. Aidan is currently a joint College of Radiologists / CR-UK Clinical Fellow at CCRCB in the final year of his PhD. This is the first time this award has been made to a recipient from the UK and follows on from the success of the Jack Fowler ESTRO award to Dr Conor McGarry in 2011.

CCRCB PhD student **Ms Laura Kettyle** won a prize for her oral poster presentation at the IACR meeting in Dublin on 28 February – 1 March 2013. **Ms Joanna Majkut** also won a prize for her poster presentation.

Ms Kathryn Clarke won a Gold Sponsorship package from PrimerDesign worth over £3,000 of kits and training for Real Time PCR. Her submission in the international competition was chosen because of the 'elegant, ground breaking questions' she hoped to answer by qPCR.

The 19th Annual Conference of the Section of Bioengineering of Royal

Academy of Medicine in Ireland (RAMI) took place on 18 – 19 January 2013 with over 120 papers presented. Collaborative research between CCRCB Honorary Senior Lecturer **Dr Glenn Dickson**, the Royal College of Surgeons in Ireland and Trinity College Dublin won the RAMI Bronze Medal for the best paper of the entire meeting with research work entitled: 'Highly efficient non-viral gene-activated delivery from collagen nano-hydroxyapatite scaffolds for stem cell-mediated bone formation', by Curtin, C., Cunniffe, G., Lyons, F., Dickson, G., Duffy, G. and O'Brien, F.J.

MEASURES OF ESTEEM

The CCRCB/NICC Radiotherapy team have had two papers in the same issue of Physics and Medicine in Biology highlighted in the Medical Physics Web Research and Innovation News (http:// medicalphysicsweb.org/).

The paper by **Dr Aidan Cole** et al., a clinical fellow within CCRCB, presented the method developed and implemented in Belfast for in vitro investigation of the radiobiological consequences of respiratory motion. These models will allow on-going investigations to look at the radiobiological implications of a variety of advanced radiotherapy techniques that are currently used in lung cancer treatment and for studying newer

techniques such as gating or tracking. Cole, A.J., McGarry, C.K., Butterworth, K.T., Prise, K.M., O'Sullivan, J.M. and Hounsell, A.R. (2012) Development of a novel experimental model to investigate radiobiological implications of respiratory motion in advanced radiotherapy, Phys Med Biol., 57(22):N411-20.

The paper by **Dr Christina Agnew** et al. from the Radiotherapy Physics group, presented techniques developed to look at the accuracy of IMRT delivery. In this, data collected every 50ms during IMRT treatments was used to reconstruct the treatment delivery. As well as being highlighted on the Medical Physics website this article was selected as one of the editor's picks in the Quarterly ESTRO newsletter (no.86), highlighting the potential impact of this work. Agnew, C.E., King, R.B., Hounsell, A.R. and McGarry, C.K. (2012) Implementation of phantom-less IMRT delivery verification using Varian DynaLog files and R/V output, Phys Med Biol., 57(21):6761-77.

Ms Jodie Hay and Ms Gemma Logan,

CCRCB PhD students, presented posters at the American Society for Hematology Annual Meeting in December 2012 in Atlanta, Georgia. The meeting was attended by around 21,000 participants.

RECEINT GRAINTS AWARDED					
Investigator(s)	Sponsor	Title	Amount	Start Date	End Date
Kennedy, Richard Mullan, Paul	MRC	Development of a biomarker for the SRC pathway in ovarian cancer	£84,038	01/03/13	31/07/15
Longley, Dan Scott, Chris Van Schaeybroeck, Sandra	MRC	Development of EGFR- targeted camptothecin-loaded nanoparticles for targeting Kras wild-type colorectal cancer	£87,152	01/03/13	31/07/15
Mills, Ken	NILRF	Summer Studentships 2013	£6,000	01/07/13	31/08/13
Mills, Ken	NILRF	Funding for Post Doctoral Research Fellow – Fabio Liberante	£13,500	01/01/13	30/04/13
Mullan, Paul Kennedy, Richard	Breast Cancer Campaign	The identification of senescence bypass markers	£19,990	01/01/13	31/12/13
Mullan, Paul Williams, Rich	Darren Clarke Foundation	Characterisation of a novel TBX2-CST6-Legumain oncogenic signalling pathway and development of specific LGMN inhibitors for the treatment of poor prognosis breast cancers	£80,000	01/10/13	30/09/16
Quinn, Jennifer Salto-Tellez, Manuel Mullan, Paul	HSC R&D Fellowship	Characterising the cell of origin of high grade ovarian cancer	£192,265	01/08/13	31/07/16
Waugh, David Van Schaeybroeck, Sandra	Invest NI	A phase lb/ll study of combined MEK/cMET inhibition in KRASMT KRASWT CRC patients	£7,875	01/01/13	30/06/14

CCRCB PHOTO GALLERY



The Séan Crummey Memorial Fund currently supports a PhD studentship within the Centre. Thanks to Brendan Crummey (Séan's son) who raised a further £700 through a sponsored swim to continue to support our research.

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Professor Ken Mills recently attended the European Commission Research and Innovation Framework Programme / COST Joint Workshop on "The Relationship between Genome and Epigenome" for Horizon 2020, held in Brussels on 14-15 February 2013. Also pictured is Dr Ángeles Rodriguez-Pëna, President of the European Cooperation in Science and Technology, and Professor Roland Pochet, Chair of BMBS Domain.



You might think that motorbikes and cancer research are an unlikely mix, but this February Cancer Research UK visited the Adelaide Motorcycle Show at the King's Hall, to raise the profile of its work in Northern Ireland. Cancer Research UK-funded PhD student, Philip Burn, spent a weekend at the show talking to visitors about his breast cancer research and the recent progress made by the Belfast CR-UK Centre. Philip also helped to raise over £2,000 for the charity, encouraging people to "crack the safe" to win a brand new motorbike.



RECENT PUBLICATIONS

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BARBONE, D. et al. (2012) Vorinostat Eliminates Multicellular Resistance of Mesothelioma 3D Spheroids via Restoration of Noxa Expression, PLoS ONE, 7: e52753.

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DEL REY, M., O'HAGAN, K., DELLETT, M., FONTANILLO, C., DE LAS RIVAS, J., MILLS, K.I.*and HERNÁNDEZ, J.M.* (2013) Genome-Wide Profiling of CpG Methylation identifies Novel Targets of Aberrant Hypermethylation and Reduced Expression in Low-Risk Myelodysplastic Syndromes, Leukemia, 27:610-618. (*Joint Senior Author).

DORIA, D., KAKOLEE, K.F., KAR, S., LITT, S.K., FIORINI, F., AHMED, H., GREEN, S., JEYNES, J.C.G., KAVANAGH, J., KIRBY, D., KIRKBY, K. J., LEWIS, C. L., MERCHANT, M. J., NERSISYAN, G., PRASAD, R., PRISE, K.M., SCHETTINO, G., ZEPF, M. and BORGHESI, M. (2012), Biological Cell Irradiation At Ultrahigh Dose Rate Employing Laser Driven Protons, In: Light at Extreme Intensities 2011. (Osvay, K., Dombi, P., Fulop, J. A. & Varju, K. eds.). Melville: Amer Inst Physics, p135-138. EMMERT-STREIB, F. (2013) Personalized medicine: Has it started yet? A reconstruction of the early history, Front Genet, 3:313.

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SRIVASTAVA, S. and SALTO-TELLEZ, M. (2013) Reply: A morpho-molecular prognostic model for hepatocellular carcinoma, Br J Cancer, 19 February 2013, 108(3), p741.

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EVENTS 2013

Molecular Pathology Approach to Cancer

3rd EACR-OECI Joint Training Course 6-8 May 2013 Amsterdam, the Netherlands For further information and registration please refer to: www.eacr.org/mpathcourse2013/ index.php

International Melanoma Workshop

8-9 May 2013 Conway Institute, University College Dublin For further information and registration please refer to: www.targetmelanoma.com

7th Annual Drug Design and Medicinal Chemistry Conference

8-10 May 2013 Hyatt Regency, Boston, MA For further information and registration please refer to: www.gtcbio.com/drugdesign

Birmingham Cancer Epigenetics Conference - Translational Opportunities 16 May 2013

Winterbourne House, University of Birmingham For further information and registration please refer to: www.birmingham.ac.uk/epigenetics

Breakthrough Breast Cancer 2nd International Conference on Triple Negative Breast Cancer

26-28 June 2013 London, UK For further information and registration please refer to: www.breakthroughconference.org.uk

CCRCB EVENTS

CR-UK Centre Lecture 2013

16 May 2013 CCRCB Building Professor Laura Machesky Beatson Institute for Cancer Research

Summer School in Computational Biology

16-18 September 2013 Health Sciences Building, Queen's University Belfast For further information please contact: Dr Frank Emmert-Streib: f.emmert-streib@qub.ac.uk

Conference in Computational Biology

19-20 September 2013 Riddel Hall, Queen's University Belfast For further information please contact: Dr Frank Emmert-Streib: f.emmert-streib@qub.ac.uk

EpoCan EU Workshop

6-9 October 2013 Riddel Hall, Queen's University Belfast For further information please contact: Professor Terry Lappin: t.lappin@qub.ac.uk

NEW APPOINTMENTS

Welcome to the following new staff who have recently joined the Centre:

Academic Staff: Professor Mark Lawler (Chair) Dr Vicky Coyle (Senior Lecturer/ Consultant) Dr Jennifer Quinn (Lecturer)

Clinical Research Fellows: Dr Ciara Lyons

Visiting Researchers: Dr Rebecca Gallagher

Dr Rebecca Gallagher Dr Chang Sik Kim Ms Irene Scharf Dr Jai Seth

Research Staff: Dr Olga Abramczyk

Dr Olga Abramczyk Dr Basak Celtikci Dr Ravi Deevi Dr Fabio Liberante Ms Joanna Majkut Dr Adnan Malik Ms Melanie McKechnie Mr Kirtiman Srivastava

Technical Staff: Ms Angelina Madden

FAREWELL TO GIUSEPPE

The Radiation Group at CCRCB bid a fond farewell to Dr Giuseppe Schettino on15 February. Giuseppe, who has been at CCRCB since 2007, is leaving to take up a new prestigious position as a group leader at the National Physical Laboratory in London in the area of developing dosimetric standards for advanced radiotherapy. Giuseppe, who was a rising star at CCRCB, will be continuing to collaborate with the radiation group and we wish him all the best for the future.

STAFF PROMOTIONS

Congratulations to Dr David Waugh who has been promoted to Professor and to Dr Dan Longley who has been promoted to Reader.

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



Queen's University Belfast

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