The second edition of the Workshop on infectious disease and cancer in zebrafish was held in Spoleto, Italy on July 20-22, 2009. The first edition was in Leiden, The Netherlands, in 2007 and was supported by EMBO. We had the support of the EACR, The Company of Biologists and EC funded collaborative zebrafish projects for this edition. The workshop attracted over 80 researchers from Europe, United States, Australia, New Zealand, China and Singapore who use the zebrafish to model cancer and immune responses. The main objective of the conference was to provide a forum for and foster discussions on cancer models and related immune responses using the powerful zebrafish model. This small vertebrate is emerging as one of the most promising tools in disease modeling and drug screening, therefore researchers focusing on cancer models in zebrafish meet regularly to maximize their efforts in developing new approaches and refine tools.

International leaders in the field of cancer and inflammation models in zebrafish gave state-of-the-art overviews, aimed at surveying the current possibilities for integrating methods used for studying the molecular, cellular and organismal levels of the cancer models. Moreover, updates were presented on the successful use of zebrafish as a tool for drug discovery in hematopoietic stem cell biology and in melanoma biology.

**Melanoma models**

Five of the 12 cancer talks scheduled for the first day of the meeting dealt with fish melanoma models. E. Patton (Edinburgh, U.K.) gave the EACR sponsored lecture on chemical and genetic control of melanocyte and melanoma development. She illustrated the power of a multiple organism approach for screening chemical compound libraries. Here the zebrafish was used to identify compounds that affected pigmentation. M.Mione (Milan, Italy), A. Hurlstone (Manchester, U.K.), M. Schartl (Wuezburg, Germany) and C. Santoriello (Milan, Italy) presented the melanoma models developed in their laboratories. The session ended with intense discussion and comparison of the positive aspects of the different models.

**Cancer and hematopoiesis**

In the keynote talk of this session, L. Zon (Boston, USA) introduced Cancer and Stem Cell Biology in the zebrafish. During embryogenesis, hematopoietic stem cells (HSCs) arise in the aorta-gonad-mesonephros region and are capable of self-renewal and production of all mature blood lineages. HSCs in the adult are governed by cell-intrinsic transcriptional regulators maintained by extracellular signals from the niche. The understanding of these signals and their integration with transcriptional complexes likely defines the set of genes involved in self-renewal. These studies demonstrate the integration of developmental pathways and transcriptional regulators in the homeostasis and response of hematopoietic stem cells and...
cancer cells. J. Kanki (Boston, USA) investigated the in vivo role of the human nucleolar phosphoprotein nucleophosmin (hNPM1) in zebrafish hematopoiesis. Mutations in hNPM1 (hNMPc) are found in 30% of patients with Acute Myeloid Leukemia (AML) but the role of NPM1 is still elusive. J. Berman (Halifax, Canada) engineered a transgenic zebrafish harbouring the human AML-associated NUP98-HOXA9 translocation. In this transgenic system cell survival is dysregulated and hematopoiesis is reprogrammed with upregulated expression of myeloid-specific genes. N. Trede (Salt Lake City, USA) used a T-cell indicator transgenic line to identify new molecules with activity against human T-ALL. D.M. Langenau (Boston, USA) reported the use of clonal zebrafish lines for transplantation of T-ALL. The advantage of this system is that recipient fish do not need to be immunosuppressed with irradiation. L. Rudner and K. Frazer (Salt Lake City, USA) reported the first zebrafish screen to identify heritable predisposition to T-ALL. These models serve as platforms to define
multiple types of genetic events associated with the complex in vivo evolution of this important class of human cancers.

Other tumor models
A number of reports highlighted the increasing number of cancer types successfully modeled in zebrafish. J. Amatruda (Dallas, USA) identified a mutant zebrafish line with high incidence of testicular germ cell tumors (GCTs) confirming the relevance of the zebrafish model for understanding germ cell tumorigenesis. The tumor suppressor PTEN plays an important role during development and oncogenesis, but functional analysis of PTEN deficiency in a living organism has been hampered by embryonic lethality. J. den Hertog (Utrecht, the Netherlands) inactivated both zebrafish pten genes in a double mutant strain that allow to screen for genetic or chemical suppressors of pten loss-of-function and that could be useful in the clinic. B. E. Snaar-Jagalska (Leiden, the Netherlands) developed a novel engraftment model in zebrafish embryo to study Ewing’s sarcoma progression. Hepatocellular carcinoma (HCC) is a prevalent and deadly cancer for which efficient treatment is unavailable. S. He (Leiden, the Netherlands) established a stable zebrafish liver cell line expressing human RAF-1 that is useful for studying the molecular basis of HCC. To investigate the function of c-MYC and its underlying mechanism in liver cancer formation, Z. Li (Singapore) established a transgenic zebrafish model to conditionally overexpress mouse c-Myc in the liver. T. Look (Boston, USA) gave the meeting’s second keynote lecture. He reported the first zebrafish model of Neurofibromatosis 1 that was developed in his lab together with J. Epstein (Philadelphia, USA). NF1 is the most common inherited human cancer syndrome that confers a predisposition to a number of central and peripheral nervous system tumors and a zebrafish model of this disease provides a platform for genetic and chemical perturbations to suppress the nf1-deficient phenotype.

Immune responses
The remaining one and half days of the workshop were dedicated to immune responses in diseases including cancer and inflammatory bowel disease, with talks by P. Crosier (Auckland, New Zealand) and S. Brugman (Rotterdam, The Netherlands), inflammation due to skin injury (S. Renshaw, Sheffield, U.K.) and infection due to Salmonella typhimurium (A.H. Meijer, Leiden, The Netherlands), to mycobacterium (A.M. van der Sar, Amsterdam, The Netherlands), Pseudomonas aeruginosa (C. Kim, Orono, USA) and Penicillium marneffei (G.J. Lieschke, Parkville, Australia). H.P. Spanik (Leiden, The Netherlands) showed that embryo infections can be performed in high-throughput mode to allow chemical compound screens. An in depth analysis of the zebrafish immune and hematopoietic system was presented by P. Herbolomel (Paris, France) who made optimal use of the transparency of zebrafish embryos to film the development and behavior of leukocytes during zebrafish development. I. Hess (Freiburg, Germany) focused on lymphocyte development, J. Yoder (Raleigh, USA) gave an update on the form, function and phylogenetics of novel immune-type receptors (nitrts) in zebrafish and other bony fish, whereas J.P. Levraud (Paris, France) is studying the cytokine receptor family B (CRFB) proteins involved in signaling by viro-induced interferons. M. Vega Flores (Auckland, New Zealand) used runx1::EGFP transgenic lines to trace the origin of hematopoietic stem cells. C. Hall (Auckland, New Zealand) focused on the demand-driven or emergency hematopoiesis that occurs during infection. Finally, J.L.O. de Jong (Boston, USA) characterized the genes at putative major histocompatibility complex (MHC) loci, to facilitate long-term transplantation experiments in zebrafish.

From the above it is clear that the zebrafish has many advantages to offer as a model for the studies of human diseases. Although the parallels between immune responses against cancer cells and microbes are still poorly understood it is clear that the tools developed for the study of the progression of infectious disease and cancer will be equally beneficial for both fields. The growing number of scientists that now use zebrafish in their research in these areas promises many new exciting discoveries in the near future. Therefore a follow-up meeting is already scheduled to take place in 2011 after the European zebrafish meeting in Edinburgh.

A full report of the Meeting will be published by the journal Zebrafish, in an upcoming issue dedicated to cancer biology.
The 'Genes and Cancer' organising committee were once again extremely grateful for the sponsorship provided by EACR which helped ensure the success of our 26th meeting.

As with previous years, the meeting was split into five themes. The first talk of the first session which was focused on 'Inflammation and Cancer' was presented by Alan Clarke from Cardiff University. Alan presented data from his excellent mouse models of human cancer including a new model for serrated adenoma formation in the colon. Alan's talk was followed by talks by Manolis Pasparakis from the University of Cologne, who presented data related to inflammation in cancer driven through TNF receptor signalling. Fran also presented some very exciting new data relating to a phase II clinical trial targeting the inflammatory cytokine IL-6 in ovarian cancer.

The second session of the first day was focused on Systems Biology. Simon Tavere from Cancer Research UK’s Cambridge Research Institute got things under way with a talk about his very interesting work using combinations of experimental, computational and statistical approaches to understand the evolution of cancer cells. Simon’s talk was then followed by a presentation by Michael Boutros (German Cancer Research Centre, Heidelberg). Michael talked about his extremely fruitful transcriptome-wide forward genetic RNAi screens in Drosophila. In particular, he talked about his identification of the Evi/Wls protein and its role in Wnt signalling. The session was wrapped up by a great talk by Yossi Yarden (Weizmann Institute, Israel) which described a systems approach to understand signalling downstream of the EGFR and HER2 receptor tyrosine kinases.

The high point of any meeting is the Keynote address. This year at ‘Genes and Cancer’ was no exception with an excellent talk presented by Karen Vousden from The Beatson Institute for Cancer Research, Glasgow. Karen initially gave a retrospective of the last 30 years of p53 research in which, as we all know, she has made many important contributions. This was followed by presentation of some of her most recent work on the mechanism by which mutant p53 promotes cell migration. Suitably, the Keynote lecture was followed by a drinks reception for all. The first session of the second day focused on Tumour Biology and started with talks by Celeste Simon (University of Pennsylvania) and Bill Kaelin (Dana-Farber Cancer Institute, Boston). Celeste talked about the role of HIF2a in hypoxic stress and tumour development while Bill’s talk focused on new therapeutic opportunities emerging from studies of the VHL tumour suppressor, HIFs and prolyl hydroxylases. A talk by David Lane (A*Star, Singapore) followed, where he described an exciting new strategy to target p53 therapeutically in combination with mitotic poisons. The session was then perfectly rounded off by two excellent mouse model talks. Allan Balmain (UCSF) described his work on cancer susceptibility and Catrin Pritchard (University of Leicester) followed with a talk about her work on understanding Raf family kinase function in vivo.

After the success of having short talks chosen from proffered abstracts at last year’s meeting, we continued with this component of the meeting in 2009. It was extremely difficult to select two talks from the excellent collection of submitted abstracts. Finally, it was decided to go with talks by Marion Lohrum (University of Frankfurt) and Sonia Rocha (University of Dundee). Marion presented an excellent talk which reported the use of ChIP-Seq technology to understand the role of post-translational modifications in the choice of p53 response following activation. Not to be surpassed, Sonia Rocha followed Marion with an extremely interesting talk relating to her findings that components of the NF-kB cascade can modulate DNA-damage checkpoint signalling.

The next session of the meeting concerned ‘Gene Regulation’. The first two talks centred on understanding the E2F-Rb axis in model organisms. Firstly, Nick Dyson (Massachusetts General Hospital Cancer Center) talked about the regulation of mitotic chromatin condensation by one of the Rb proteins, RBF1, in Drosophila and this was followed by a talk from Jackie Lees (MIT) which reported some beautiful work on the role of Rb in cell fate decisions in mice. The theme then moved from the Rb family to the p53 family. Xin Lu (Ludwig Institute, Oxford) discussed some of her recent discoveries with the p53-binding ASPP proteins and then Roberto Mantovani reported the findings of his ChIP studies aimed at understanding the function of p63.

In addition to the two abstracts chosen for short talks, we once again received a large number of excellent abstracts which were presented as posters. The trade exhibitors kindly paid for a drinks reception that ensured maximum attendance at poster viewing time! The judging this year was extremely difficult with many quality pieces of work on show. Finally, a decision was made and the winners were announced in the evening at the conference party. They were, in reverse order: 3rd place - Sarah Rodriguez-Acebes, (University College, London) for her work on Cdc7 as a therapeutic target in p53-mutant breast cancer. 2nd place was awarded to Emma Davies (Cardiff University) for her development of a mouse model of metastatic serrated colonic adenocarcinoma. 1st Prize was warded to Amy Hansen.
(University College, London) for her study of the role of microRNAs in Kaposi sarcoma virus-induced reprogramming of endothelial cells. Many congratulations go to all prize winners and many thanks too to all who contributed work which made this part of the meeting such an enjoyable event.

The final session of the meeting related to recent advances in targeted therapies. Chris Lord from Breakthrough Breast Cancer (Institute of Cancer Research, London) talked about his synthetic lethality screens in situations where either BRCA1 or BRCA2 have been lost. Chris’s talk was then followed by Steve Taylor (University of Manchester) who talked about the development and characterisation of new anti-mitotic drugs. A change of system then followed in the next talk by Elizabeth Patton (University of Edinburgh) who told us about her small molecule screens in Zebrafish models of melanoma. Last, but not least, the final talk of the meeting was presented by Don Ogilvie (Paterson Institute for Cancer Research, Manchester) who presented data relating to the targeting of receptor tyrosine kinases in lung and thyroid cancer.

Overall, this year’s meeting was a great success with quality presentations throughout. As each year goes by, ‘Genes and Cancer’ grows in reputation and we once again managed to combine 48 hours of cutting edge high quality science with a very relaxed and informal atmosphere which promotes interaction and discussion with attendees of all levels. We would like to say a big ‘Thankyou’ to EACR for their continued support which helps make this event possible. It only remains to say that planning is already underway for ‘Genes and Cancer - 2010’ and we look forward to seeing as many of you as possible in Warwick this December. More details can be found in due course at: http://www.genesandcancer.org.uk

Kevin Ryan, Beatson Institute for Cancer Research (On behalf of the ‘Genes and Cancer Organising Committee’)

MDM2 Workshop V

Gent, Belgium
23-26 August 2009.

The International MDM2 workshop V was held in Gent last August (23-26th) and was organized by Chris Marine, Aart Jochemsen and Geertrui Denecker. EACR contributed to the event in several ways including speaker sponsorship and a prize for the best poster. This prize was awarded to Mark Wade (post-doc fellow from the Wahl’s lab).

The MDM2 workshops have been held biennially, in different cities around the world, for the past 10 years. They have served as important events to share preliminary data, to identify and debate emerging topics in Mdm2 and Mdmx-mediated regulation of the p19ARF-Mdm2-p53 signaling pathway during cell growth, embryonic and cancer development. It has been our goal to keep up with this tradition.

In addition to Mdm2 and Mdmx, regulation of the p53 tumour suppressor pathway by other modifiers was also discussed. Moreover, as Mdm2 and other key modifiers of p53 are considered as promising targets for cancer treatment an entire session was dedicated to this important issue. Hence, as in past Mdm2 Workshops, Workshop V featured new, exciting, and unpublished basic, translational, and clinical research findings.

More than 120 people participated to this event. Jo Bury (Director of VIB) opened the meeting with introductory notes and welcome all the participants. His introduction was followed by keynote lectures by Karen Vousden and Guillermina Lozano.

Beside talks by internationally recognized scientists, active in both academia and industry, such as Sir David Lane (EACR Speaker), Arnie Levine, Moshe Oren, Wei Gu, Geoffrey Wahl to name but a few, oral presentations from as many participating laboratories as possible were scheduled. As we could not accommodate everyone, there were also many posters of noteworthy viewing during the Poster Sessions.

In addition to the scientific program social events including a walking tour of the beautiful city of Gent was also organized.

The meeting was a great success and we are already looking forward for the MDM2 Workshop VI which will be organized by Carol Prives and James Manfredi. It will be held in New York (Columbia University) in the summer of 2011.
The Multiple Tiers of Gene Regulation in Cancer
Sunday July 4 – Wednesday July 7 2010 Glasgow, Scotland

Speakers and Sessions:
Keynote Address: Joseph Nevins (US)
Chromatin: Peter Adams (UK), Kristian Helin (DK), Peter Jones (US), Tony Kouzarides (UK), Irina Stancheva (UK)
Transcription Factors: Nick Dyson (US), Nick Hastie (UK), Gareth Inman (UK), Daniel Peeples (NL), Eric So (UK), Karen Vousden (UK)
Non-Coding RNAs: Reuven Agami (NL), Joshua Mendell (US), Frank Slack (US), Robert White (UK)
Translation: Eric Holland (US), Stefan Huttelmaier (DE), Adrian Krainer (US), Davide Ruggiero (US), Nahum Sonenberg (CA)
Systems: Joe Gray (US), William Hahn (US), Edison Liu (SG), Owen Sansom (UK)

Aims of the Conference
Misregulated gene expression plays a causal, or contributing, role in all cancers. This conference will focus on the various mechanisms, and their interactions, of gene control in cancer. Identifying and understanding these mechanisms and systems will lead to the development of novel diagnostics and treatments.

Short talks will be granted to the authors of outstanding abstracts. Some financial assistance will be available to the presenters of these short talks through sponsorship from the Association for International Cancer Research.

Website, on-line registration, payment and abstract submission instructions: http://www.beatson.gla.ac.uk/conf

For additional information please contact:
Tricia Wheeler, Conference Co-ordinator, Beatson Institute for Cancer Research, Garscube Estate,
Switchback Road, Bearsden, Glasgow G61 1BD, UK
Tel: +44 (0) 141 942 0855  Fax: +44 (0) 141 330 6426
E-mail: t.wheeler@beatson.gla.ac.uk

Deadline for registration payment and abstract submission April 28 2010
The Association for Radiation Research (ARR) Annual Conference

Glasgow UK
22 - 24 June 2009.

The meeting hosted around 150 delegates from the scientific and clinical world and was held in the beautiful Charles Wilson Lecture Theatre at Glasgow University. The meeting was a mix of stimulating and inspired presentations both proffered and invited, excellent poster presentations, lively debate and a Scottish themed social programme.

Monday began with welcome addresses from Dr Don Jones the ARR Chairman and Dr Marie Boyd the co-local organiser with Professor Robert Mairs. Professor Jim Cassidy of the Beatson Oncology Centre and Glasgow University added his welcome. The sessions on Monday were initiated by a session dedicated to the application of genomic and proteomic approaches in radiation research and two international speakers Professor Sally Amundson from Columbia University and Dr Richard Smith form McMaster explained how genomics and proteomics have contributed to the understanding of the mechanisms that may be involved in the radiation induced bystander effect. These exciting presentations opened the doors for future work that will have implication in both radiotherapy and radiation protection. Also on Monday in a session sponsored by The EMF Biological Research Trust, we heard from researches investigating the biology of non-ionising radiation and an excellent presentation from Professor Trevor McMillan (University of Leicester) discussed the biological consequences of UV irradiation. This was followed by several proffered papers discussing electromagnetic Fields an area of current public concern and controversial scientific interest. The session examining non-targeted effects of radiation, boasted invited presentation by two the world most published and eminent experts in the field Professor Amin Kassis (Harvard) and Professor Carmel Mothersill (McMaster) who gave excellent overviews of bystander effects elicited by targeted radionuclides and ionising radiation respectively. Proffered papers in this session expanded upon these themes.

The final academic session of the day was a general radiation science session. Several proffered papers in the session described work on various aspects of hypoxia in radiation biology, DNA damage and radiosensitivity. We were very honoured to then host the spectacular Keynote Address sponsored by the BACR, by Professor Eric Hall, Professor Emeritus, Columbia University, New York, discussing “some characteristics of biological damage induced by ionising radiation”. Professor Hall is the Grandfather of current radiation research and his book “Radiobiology for the Radiologist” is the key text for all radiobiologists. His insightful and provocative lecture was an honour to witness and his presence at the meeting both as a speaker and in the lively debates was much appreciated and treasured. Needless to say Professor Hall also contributed his own brand of humour to the social events of Monday evening, namely a Burns supper where he took on the role of “Auld Nick” for our entertainment. I am sure anyone present will remember that night for the rest of their careers!

On Tuesday morning we had two excellent presentations from Dr John Babitch (Molecular Insight Pharmaceuticals) and Professor John Valliant (McMaster) (sponsored by one of our major sponsors Molecular Insight Pharmaceuticals (MIP) who described the current state of chemo-radiobiology and provided an excellent education for the less well versed in the promise and excellence that is coming from this field into the radiobiology arena. Both talks demonstrated the promise for clinical translation and provided an excellent platform to support future multidisciplinary collaborations within the radiation biology field. Further proffered papers in this session also contributed to this multidisciplinary approach. In this session we also had a presentation from Dr Steven McMahon (Belfast) who was the first of our EACR sponsored young scientists describing his work on utilisation of Gold Nanoparticles to enhance the efficacy of radiotherapy.

The targeted radionuclide therapy session, sponsored by the CSO and DOH, had invited presentations from Professor Jorgen Carlsson (Sweden) and Dr Kim Orchard (Southampton). Both presentations offered an insight into the use of radiolabelled agents in tumour therapy and their translation into clinical practice. The proffered papers in this session were an interesting mix of scientific and clinical presentation and left the audience with a clear perspective that this area of radiotherapy has great promise and new and exciting ideas are certainly coming through.

This theme was continued in the Translational Research Session with invited presentations from Dr Anthony McCluskey (Glasgow sponsored by the CSO) and Dr Thomas Brunner (University of Oxford, sponsored by Martin and White). Both presentations described how basic radiation research has been successfully moved to clinical reality and were encouraging to the audience as they demonstrated successful application of different radiation therapies into patient care. Proffered papers in the session including one from a PhD student Mathias Tesson, who was the recipient of the EACR Student Award, which described other potential therapies utilising radiation alone and in combination which could also have implications for the
treatment of paediatric and adult malignancies.

The Molecular genetics session hosted Dr Horst Zitelburger (Germany) and Dr Olga Kolvalcuk (Canada) who presented their work on cytogenetic studies in radiation induced carcinogenesis and the role of epigenetics in radiation induced genomic instability. Subsequent proffered papers included one from Angelike Velissariou (DIT), who was sponsored by the EACR, presenting findings on in vitro and in vivo chromosomal and DNA effects following irradiation in cells and pre-clinical models.

Following the ARR AGM and Poster sessions on Monday night, the delegates gathered for the Conference Dinner and presentation of Prizes. This began by the presentation of the Tom Wheldon memorial Award to professor Rob Mairs for his achievements in multidisciplinary Radiation research and was sponsored by the Beatson Oncology Centre. There were also several Poster Prize Awards including two sponsored by The EACR. The conference dinner and much dancing followed into the wee small hours.

On the final day things began with a very valuable and CRUK sponsored informative workshop, discussing animal models in radiation research. First class presentations from Dr Adam Hurlistone (Manchester), Dr Anton Gartner (Dundee), Dr Owen Sansom (Glasgow) and Dr Mike Atkinson (Germany) discussed the potential for using Zebra Fish, C.Elegans and mice for radiation research, both at the basic science and translational levels. I am sure this session will lead to many new in vivo studies in radiation research and the presentations were much appreciated by the audience. In this session Gulmay Medical also sponsored Dr Eric Ford from Johns Hopkins, Baltimore to describe a small animal Irradiator system that has potential for in vivo radiotherapy studies.

Children with Leukaemia sponsored a Radiation Biology in Haematology session with exciting and evocative plenary lectures from Professor David Brenner (Columbia) and Professor Eric Wright (Dundee). After lunch we were delighted to host an Ex-Scot professor Bill McBride who discussed the proteome as a target for radiation therapy and ARR’s own Dr Tracey Robson who discussed the Belfast group’s novel anti-angiogenic protein that targets CD44. The proffered papers in this session discussed hypoxia targeted radionucleide therapy, chemotherapeutic challenge of the Chernobyl rodents and the utility of gold nanoparticles as novel radiosensitisers.

The final session of the conference was a stimulating and inspiring clinical showcase that certainly ended the meeting with optimism and enthusiasm. We were very fortunate to hear from Professor Kate Mathay (sponsored by the Neuroblastoma Society) about the current state of the utilisation of [131I]MIBG for the treatment of neuroblastoma. Professor Robert Timmerman (University of Texas) sponsored by the CSO, completed our plenary lectures discussing the major advances in Steriotactic Irradiation. The final proffered papers from three excellent clinical scientists discussed target localisation, NIS expression and its relationship with oestrogen receptor status in breast cancer and late radiation toxicity issue related to the RAPPER study. This was without doubt one of the best clinical showcases of ARR meetings and it was inspiring for the scientists and clinicians in the audience to see clinical application of such high calibre in radiation biology.

Overall the meeting in Glasgow was a pleasure to host and I am confident that it will lead to much productive collaboration in the future. It was also gratifying to see so many young clinicians and scientists attend and contribute excellent presentations and posters and as these people are the future of radiation biology I am confident that we are in safe hands. Thanks must be finally given to the sponsors of the meeting without whom we could not have had such a high quality programme or so many young folk attend. Thanks in particular to the EACR who enabled attendance of so many young scientists. As ever their support of the ARR is appreciated and we hope for an excellent association for many years to come.

EACR Sponsored Student Bursary

Lynn Martin
Division of Radiation Therapy, Trinity College Dublin

I am currently a PhD student in the Division of Radiation Therapy, Trinity College Dublin, Ireland and I am working in the area of low dose radiation hypersensitivity research. I am extremely grateful to the EACR for their generous sponsorship which allowed me to attend the annual meeting of the Association for Radiation Research in Glasgow.

The programme covered a wide range of topics including targeted radiotherapy, molecular therapeutics, non-targeted effects and general radiation science. The meeting was a great opportunity for me to learn about emerging topics in radiation research and extend my knowledge in areas outside of my own research. Coming from a small radiobiology group I was particularly excited to present my work to other researchers and have constructive discussions with experts in the field.

The ARR social programme was also a great experience, my first taste of Haggis is something I’ll remember for a long time to come. I would like to thank the EACR for this wonderful opportunity, given the current climate it would not have been possible for me to attend the meeting without their support.
The Young Life Scientists
2009 Networking Angiogenesis Symposium
Organised in partnership with the Biochemical Society.
University of Chester, UK
14th July 2009.

The Young Life Scientists
2009 Networking Angiogenesis
Symposium was organized in partnership with the Biochemical Society. It was held at the University of Chester on 14th July 2009. We wanted the meeting to be a forum for young life scientists, both early postdoctoral fellows and graduate students, in the field of angiogenesis to present their work and interact with their peers.

There were five of us on the organizing committee, all from the University of Oxford – myself, Miriam Bazan-Peregrino, Richard Sainson, Chern Ein Oon and Clemens Thoma.

Organising this meeting helped us appreciate the many issues that needed to be sorted out for such things to run smoothly, from deciding invited speakers to hiring the venue, organizing the catering and poster boards. One of our first priorities was fundraising, as the budget from the Biochemical Society, although generous, would have been insufficient for the entire meeting. We approached a number of companies to look for sponsorship and we were fortunate that a number of them came on board. Then in October 2008, I went along to a seminar from Professor Richard Marais, the secretary general of the EACR, at the institute. At the beginning of his presentation, he promoted membership to the EACR and after his seminar, I took the opportunity to ask him if the EACR would be interested in supporting the symposium. He put me in contact with the right people to apply for funding through. One thing led to another and in the end we were able to secure generous funding from the EACR. The moral of the story for PhD students and postdocs? Go along to departmental seminars! And don’t be afraid to ask (questions, for reagents, funding sources etc), you just never know how things are going to work out.

Most things flowed smoothly in the lead up to the meeting. As with any meeting, though, there were some tense moments as the day drew nearer. The one that stands out is perhaps getting the abstract books finalized for printing. On the day itself, we were all excited that the symposium had finally arrived but a bit nervous as well. However, everything went smoothly, from the morning registration to the setting up of posters and the oral presentations. We were grateful that all the speakers kept to their allotted time, a bit of a rarity at some meetings! Both of our plenary speakers, Rafaella Giavazzi from the Mario Negri Institute of Pharmacological Research in Milan, Italy, who gave the EACR sponsored lecture, and Len Seymour from the University of Oxford, gave excellent talks and interacted with younger participants of the meeting during the breaks. The poster sessions went really well, with delegates visiting the other posters and talking to the presenting authors. There was a good mix of graduate students and postdoctoral fellows at the meeting; the oral and poster presentation prizes deservedly went to a mix of both students and postdocs.

For us, it was very rewarding to see the delegates interacting with their peers without too much apprehension. All in all, the meeting was a success and was a great experience for us. We would like to take this opportunity to thank the EACR again for their wonderful support to help us make the day happen.

(L-R) Clemens Thoma, Chern Ein Oon, Anassuya Ramachandran and Miriam Bazan-Peregrino (members of the organising committee)
The inspiring surroundings of Magdalen College, Oxford again hosted the August 2009 Gordon Research Conference on the Mechanisms of Cell Signalling, in part sponsored by the EACR. The meeting focused on key ideas and the latest research in a number of cell signalling areas: understanding signalling networks; cell polarity; how cells sense their physical environment; cell adhesion and motility; how cellular signalling operates to control cell behaviour; how dys-regulation of cell signalling causes disease, in particular cancer.

The Conference brought together a collection of investigators who are at the forefront of their field, and provided opportunities for junior scientists and graduate students to present their work in poster format and to exchange ideas with leaders in the field. The variety of scientific disciplines covered by the invited speakers, included structural, computational, developmental and molecular-cell biology. A key theme of the meeting was discussion of advances in our understanding of cell signalling at the level of networks rather than individual pathways.

The meeting featured sessions on: Activation of small GTPases, Cell Polarity, Signalling at the network level, Sensing the physical environment, Ubiquitin networks, Organismal biology and development, Cell adhesion and migration, Signalling and cancer. In addition to the formal talks and discussions there were well-attended poster sessions with over 100 posters presented in the four afternoon sessions.

The conference was well supported financially by a number of contributors including the EACR who generously supported the travel for a European speaker as well as contributing to the meeting as a whole. The EACR-sponsored speaker was Professor Ivan Dikic from the Goethe University School of Medicine, Frankfurt who gave a talk in the Ubiquitin Networks session entitled “Targeting Ubiquitin networks”. On behalf of the co-chairman and myself I would like to thank the EACR for their substantial contribution to the conference. Each attendee was asked to rate the conference and here are just a few of the many positive comments: “Great science and good discussions!” “Top people were here.” “Many excellent speakers at the frontier of the field.” “Interesting talks. Good speakers. Friendly meeting.” “A good mix of European, Asians and US speakers. A very egalitarian, no-one dominated and free and easy discussion.” “Great location. Some good talks on general interest topics. Well organized.” “Excellent speaker composition and diversity.” “Cutting edge science and lots of wonderful opportunities for interacting with conference attendees.”

The collegial atmosphere of this Conference, with programmed discussion sessions as well as opportunities for informal gatherings in the afternoons and evenings, again provided an avenue for scientists at different stages of their career and from different disciplines to meet, discuss and further scientific thinking over a five day period and for cross-disciplinary collaborations to be fostered between the various research areas represented at the meeting.

For a full scientific meeting report please visit: www.eacr.org
The 5th International Conference on Tumour Microenvironment: Progression, Therapy and Prevention

Versailles, France, October 20-24, 2009

Isaac P. Witz

The 5th International Conference on Tumour Microenvironment: Progression, Therapy, and Prevention was held at the Palais des Congres de Versailles, Versailles, France from October 20 to October 24, 2009. The beautiful conference venue was highly suitable for personal interactions between participants, a most important factor in a scientific gathering.

With about 700 scientists representing 43 countries, this conference was the largest Tumour Microenvironment conference ever held. One hundred and eighty oral presentations were delivered in 6 plenary and 14 symposium sessions. In addition, 221 posters were presented.

Adriana Albini from Milan, Italy was the EACR sponsored speaker. The title of her lecture was: The Role of the Tumour Microenvironment in Angiogenesis and in Prediction of Breast Cancer Metastasis.

Of significance was the fact that a large fraction (36%) of the participants was graduate students and post-doctoral fellows making their first steps in Tumour Microenvironment research. This demonstrated that young scientists consider the area of Tumour Microenvironment as being of prime importance in the cancer process and worthwhile of focusing on. In order to familiarise the younger generation with the roots of the Tumour Microenvironment research area, Isaac Witz, the Conference Chair summarized the major developmental stages of this research area.

In a plenary poster session, five scientists whose posters were selected by the “Best Posters” review committee chaired by Catherine Sautés-Fridman presented their results. Two of the “Best Poster” prizes, sponsored by the European Association for Cancer Research were awarded to Dominique Arsenault from Sherbrooke, QC, Canada and to Andrei Bakin from Buffalo, NY, USA. The other three prizes were awarded to Niels Halama from Heidelberg, Germany, to Emily Paterson from Adelaide, SA, Australia and to Jennifer Isaacs from Charleston, SC, USA. Two citations were awarded to Julien Cherfils-Vicini and to Marie Tosolini, both from Paris, France.

The major goal of all cancer researchers worldwide, including of course the tumour microenvironmentalists, is to cure cancer or at least block its progression. Indeed results of the last decade as well as findings presented at the Versailles meeting, clearly demonstrate that drugs that interfere with malignancy-promoting interactions between tumour cells and their microenvironment such as anti angiogenesis drugs, signalling inhibitors or anti inflammatory drugs exert beneficial influences on cancer patients. Similarly drugs that promote anti malignancy interactions between tumour cells and their microenvironment, for example various immunotherapy modalities are also highly valuable.

The Versailles conference was a truly multidisciplinary event where the focal issue was approached and discussed thoroughly by specialists from a wide spectrum of biomedical sciences. The conference met the intention of the programme committee to solidify the realization about the significance of the tumour microenvironment in tumour progression. We also succeeded to create a friendly forum that promotes a critical review of novel basic findings, and of innovative clinical studies pertaining to the cancer
The majority of topics discussed in the Versailles conference dealt with basic and translational aspects of tumour-microenvironment interactions. Numerous lectures and posters presented at the conference focused on the characterization and functions of the non tumour cell component of the Tumour Microenvironment such as endothelial cells, bone marrow derived cells, cancer associated fibroblasts, lymphatic and myeloid immunocytes as well as on a variety of microenvironmental growth factors, cytokines, chemokines, as well as extracellular matrix proteins. Several presentations dealt with tumour progenitor or cancer stem cells and the relevance of premetastatic niches. Essentially all major cancer sites – solid tumours as well as hematopoietic malignancies were well represented at this meeting.

Below is a list of some interesting topics discussed in the conference.

Intra-tumour Heterogeneity; Key Players in Endothelial to Mesenchymal Transition and its Reversion; Cell Migration and Tumour Associated Macrophages; Molecular Signatures of Non Tumour Cells in the Tumour Microenvironment; Bone Marrow Derived Cells; Hypoxia; Chemoine-Chemokine Receptor Axes; Escape from Anti Tumour Immunity and Inflammation; Bone Metastasis and Targeting Non-Tumour Cells in the Tumour Microenvironment.

In conclusion I wish to thank Suresh Mohla from the NCI, NIH who contributed significantly to the preparation of this Report and express my appreciation to all those who contributed to make the Versailles Conference a success. Above all, appreciation is due to our organizing partners, the American Association for Cancer Research and the National Cancer Institute of France.

Special thanks are due to the sponsors of the conference for their generosity, the programme committee for putting together an interesting and challenging programme, the session chairs for their skills and leadership, the coordinator of the conference and her team for supervising and coordinating the scientific and social events, the conference secretariat for a highly efficient administration and the technical team of the Palais des Congres de Versailles for facilitating our various activities in this beautiful venue.

Isaac P. Witz, President,
The International Cancer Microenvironment Society

Andrei Bakin receives his award from Catherine Sautès-Fridmani and (below) gives his talk

Dominique Arsenault gives his talk and (below) receives his award from Isaac P Witz

EACR was well represented at meetings throughout the year. Rachel Warden and Andrew Binns from the Secretariat were available to talk to delegates about the Association and EACR-21 during session breaks at the meeting

68
Radiation and the Genome: from risks to opportunities for therapeutic exploitation

Radiation and Cancer Biology committee of the BIR
1st Dec 2009

Tracy Robson and Catharine West

On 1st Dec 2009, the Radiation and Cancer Biology committee of the BIR held a one day conference on the theme of radiation and the genome. Talks covered genomic instability: its importance for radiation-induced carcinogenesis and potential for exploitation in the development of novel chemoradiotherapy combinations; and the prospects of exploiting knowledge of the genome to understand how individual genetic variation impacts on a patient’s likelihood of developing toxicity following radiotherapy. The meeting also provided an overview of stem cell biology and its relevance for radiotherapy in terms of both tumour (somatic) and normal tissue (germline) sensitivity to radiation and the possibility that manipulation of stem cells could be used to reduce radiation-induced normal tissue damage.

Constant challenges to the mammalian genome can result in genomic instability. Exposure to reactive oxygen species, environmental genotoxic agents and radiation causes DNA damage. Failure to repair this damage, which is enhanced by defects in DNA metabolism and error prone DNA repair, makes the genome unstable and prone to a wide variety of chromosome aberrations. Genomic instability is a key process in carcinogenesis. Prof Eric Wright (University of Dundee) gave an overview of radiation induced genomic instability, with an emphasis on the non-targeted effects of radiation, i.e. radiation-induced effects in cells that are descendents of irradiated cells or in cells neighbouring irradiated cells (radiation-induced bystander effects). These radiation-induced effects are genotype-dependent and have properties associated with inflammatory processes. The effects correlate with macrophage stimulation in mice and the activation of a cascade of pro-inflammatory response genes, such as tumour necrosis factor and nitric oxide synthase. Stimulated macrophages appear to contribute to secondary non-targeted and delayed radiation effects. Work in the area is consistent with a persistent tissue reaction to radiation injury characteristic of an inflammatory response. Importantly, the available data suggest that ionising radiation may contribute to tumourigenesis, and particularly the development of childhood leukaemia, by promoting initiated cells rather than being the initiating agent. A long term inflammatory response may also contribute to other radiation-associated pathologies, e.g. late normal tissue damage.

Prof Thomas Helleday (Gray Institute for Radiation Oncology and Biology, Oxford) overviewed the genetics of genome instability associated with cancer cells. He described how DNA repair pathways can enable tumour cells to survive DNA damage induced by chemotherapy and discussed how they provide therapeutic targets to increase genomic instability and enhance tumour cell kill. Furthermore, he described how mutations can make some cancer cells reliant on a reduced set of DNA repair pathways for survival. There is evidence that drugs that inhibit one of these pathways in such tumours could prove useful as single-agent therapies, a process known as synthetic lethality, with the potential advantage that this approach could be selective for tumour cells and have fewer side effects. A few examples included treating BRCA1/2 deficient tumours, which are defective in homologous recombination (HR) repair with poly ADP ribose polymerase (PARP) inhibitors. These agents induce single-strand breaks that can result in DSBs as a result of stalled replication forks. Such lesions would normally be repaired by HR, but this is prohibited in BRCA1- or BRCA2-deficient cancer cells. This strategy is showing promise in clinical trials. Prof Helleday also suggested that PARP inhibitors might be useful in combination with radiation, since fractionated radiotherapy forces cells into G2 where the cells become dependent on homologous recombination for repair. Finally, he suggested that both ATM and DNAPK inhibition would useful in combination with radiation. DNA-PK is important in the process of non-homologous end joining (NHEJ) which is required for the repair of radiation-induced double stand breaks. Cells defective in DNAPK are highly sensitive to ionizing radiation indicating that inhibition of DNAPK might sensitize tumours to radiation treatment. Likewise, ATM is central to cellular responses to DSBs. The rationale behind the clinical use of ATM inhibitors depends on the premise that ATM inhibition should improve the therapeutic index by hypersensitizing tumour cells to agents that cause DSBs, such as radiotherapy.

Dr Geoff Lawrence (Clatterbridge Centre for Oncology) continued the theme of radiation-induced genomic instability by highlighting the risk of secondary cancers following radiotherapy. The risk was illustrated using the findings from the United States study that analysed 1,319 patients with Hodgkin’s lymphoma and showed 181 patients developed secondary malignancies and that risk was higher with increasing radiation field size. The potential was highlighted for adaptive image guided radiotherapy to reduce long-term secondary cancer risk by reducing radiation field sizes during treatment while improving local control via dose escalation to smaller central tumour volumes.
Another approach being investigated to reduce radiation-induced normal tissue toxicity involves exploitation of knowledge gained through sequencing the human genome and developments in high throughput techniques for assessing genetic variation. Improvements in radiotherapy are increasing the number of cancer survivors, which makes it important to find ways to reduce the number of patients suffering long-term side effects of treatment. Dr Chris Talbot (University of Leicester) described the potential of identifying genetic polymorphisms that predispose to or protect against radiation toxicity. The identification of these genetic variants might provide a way of predicting a patient’s likelihood of developing side effects and be exploited by developing a genetic test that could be used to personalise radiotherapy dose prescriptions. Work in this area requires detailed recording and analyses of radiation toxicity data, which will increase understanding of the relationships between different endpoints. A study carried out in Leicester showed a relationship between the development of telangiectasia and the long-term risk of developing cardiovascular disease in breast cancer patients, which suggests a common aetiology might be involved. Genotyping studies require large numbers of patients, facilitated by local, national and international collaboration. Attention was drawn to the recent establishment of the international Radiogenomics Consortium for pooling genotyping data to enable adequately powered studies to be carried out.

Gill Barnett (University of Cambridge) described some of the first results emerging from the national RAPPER (Radiogenomics: Assessment of Polymorphisms to Predict the Effects of Radiotherapy) study. RAPPER has collected over 2,500 samples from patients enrolled in radiotherapy trials across the UK. The first data analysed showed no relationship between polymorphisms in the TGFB1 gene, currently the most widely studied gene in this area, and radiotherapy toxicity. Ongoing work is attempting to validate 68 single nucleotide polymorphisms that have previously been reported to be associated with radiation toxicity. With the exception of one or two of the genes, most showed no association with toxicity highlighting the need for confirmatory studies and large sample sizes.

The afternoon session centred around stem cell biology and was led off by a fascinating talk by Dr Robert Coppe (University of Groningen, The Netherlands). He provided compelling evidence that stem cells could be used to reduce the types of radiation-induced normal tissue damage introduced by the previous speakers. In particular, he focused on xerostomia or dry mouth syndrome resulting from radiation-induced hyposalivation; a problem after radiotherapy for head and neck cancer. Using the salivary gland as a model, he clearly demonstrated both in vitro and in vivo that stem cells isolated from salivary ducts could be used to restore damaged salivary ducts following exposure to radiation, with increased saliva production in mice after transplantation of donor stem cells. The ability to translate this into the clinic looks promising, since he demonstrated that stem cells could be effectively isolated from patients before radiotherapy. These cells self-renew in vitro for up to seven passages, could form salivary gland structures and had the potential to reduce radiotherapy-induced salivary gland dysfunction.

Dr Susan Short (University College, London) then presented data on the use of mesenchymal stem cells (MSC) to study the genetics of tumourigenicity and its effect on radiosensitivity. In an elegant series of experiments she used a range of cell lines demonstrating the transition to tumourigenesis by stepwise transformation with hTERT, HPV16, SV40 and HRas. She was able to show that the more tumorigenic cells had increased radiosensitivity, more residual double strand breaks and increased apoptosis than immortalized parental cells or the less fully transformed MSCs, demonstrating that at least in this cell type the fully transformed MSCs did not demonstrate the typical radioresistant phenotype often reported for cancer derived stem cells.

Dr Rob Clarke (University of Manchester) then presented evidence that breast cancer stem cells (CSCs) are resistant to radiotherapy. He was able to demonstrate that both primary cancer and breast cancer cell line derived CSCs preferentially survive radiotherapy, showing a huge (50-90%) increase in survival compared to normal cells. However, he also presented data to suggest that targeting the Notch 4 receptor, which plays a key role in tumour initiation by CSC-enriched populations, may be effective in preventing radiation resistance. Notch inhibition decreased SCSC activity in vitro and reduced the growth of breast tumours by up to 50%. The combination with radiation certainly suggests a way forward.

Two talks followed which further interrogated the hypothesis that CSCs contribute to radioresistance in a range of cell lines/tissues of different tumour types. Dr Anthony Chalmers (Brighton and Sussex Medical School) went on to discuss similar features with respect to CSCs derived from glioblastoma cells. Glioblastoma multiforme are high grade brain tumours that are refractory to radiotherapy possibly because of a radioresistant CSC population. He was able to demonstrate that, under certain conditions, CSCs derived from both primary and glioma cell lines enriched for CD133 expression were resistant to radiation, however, he highlighted the complexity of these experiments since the cellular response appeared to be dependent on the microenvironment and stressed that conditions needed to be carefully monitored in order to observe these effects. Dr Thomas Brunner (Gray Institute for Radiation Oncology and Biology, Oxford) then went on to assess the radioresistant phenotype of CSCs derived from a whole series of cell
lines used routinely. He was able to demonstrate that CSCs derived from MDA-231 cells sorted for CD24-/CD44+/ESA+ were indeed radioresistant and had elevated Notch 1, increased ability to repair damage after radiation. After 3 weeks growth these cells developed radiosensitivity again as they became more heterogeneous; the radioresistant phenotype was better maintained in serum free conditions. However, these effects were not observed in a second breast cancer cell line, MDA-MB-468, even though Notch 1 was high, or in HCT-116 cells. Cell type will, therefore, be important when analyzing CSCs in vitro.

Finally, Dr John Hall (University of Manchester) finished the day with a presentation on cervical cancer, stem cells and radiosensitivity. He used a microarray approach to derive a gene signature using pre-treatment formalin-fixed paraffin embedded cervical carcinoma specimens, for which intrinsic radiosensitivity (surviving fraction at 2 Gy, SF2) had previously been measured. The gene profiling identified a novel gene not previously implicated in tumour radiosensitivity. The gene was validated by immunohistochemistry and high expression strongly correlated with SF2 and a good outcome following radiotherapy.

Overall the symposium provided a balanced reflection of radiation-induced genomic instability and its association with tumourigenesis and normal tissue toxicity following radiotherapy. Our ability to target genomic instability with new DNA repair inhibitors as well as highlighting approaches to measure normal tissue and tumour radiosensitivity were major themes. Finally, the day also provided a thorough overview of the fascinating role of stem cells in promoting radioresistance and how these could be targeted with novel Notch-targeted agents to improve outcome or harnessed to repair normal tissue damage following radiotherapy; an exciting area to follow in the future.

The meeting was sponsored by CRUK and EACR

The 51st Annual National Meeting of the Italian Cancer Society (SIC) “Cancer research in the technological post-industrial era”

23 – 26 November 2009
Milan, Italy

The 51st Annual National Meeting of the Italian Cancer Society (SIC) “Cancer research in the technological post-industrial era” was successfully held in Sesto San Giovanni in the Milan area, where several institutions and laboratories involved in cancer research field are present. Sesto San Giovanni grew during the end of the 19th century and in the early 1900s, becoming one of the most important sites of Italian industrialization (Falck, Campari, Magneti Marelli and Breda).

The scientific coordinator was the SIC president Dr Adriana Albini, Director of Oncology Research of the Casa di Cura Multimedica-IRCCS, Milan, helped by Adriacongresx (Chiara Valentini).

One of the most important partners of SIC is the European Association for Cancer Research (EACR) represented by its president Prof. Dr. Anne-Lise Børresen-Dale and Dr. Andreas Gescher as invited speakers. American Association for Cancer Research (AACR) actively participated to the conference. During the inaugural session the

Dr. Paolo Macor, Dr. Alfredo Budillon, Dr. Adriana Albini, Dr. Alfredo Fusco, Dr. Raffaella Giavazzi

AACR chief Executive Officer Dr Margaret Foti presented the American Association, underlining the importance of the international collaborations in cancer research.

During these last years the number of scientific presentations and people taking part in the event has constantly increased. Furthermore, starting as a national meeting, it counts now a large number of international speakers, with English as official language. The SIC’s principal activities are the promotion of experimental, molecular and translational oncology, to foster cancer research in Italy and to attract young scientists into oncology. In this way, this year roughly 80% of the members of the society are under 35 years old. A Young Educational Section opened the 51st meeting. It was a satellite symposium that gave several companies the opportunity to present new technologies to young scientists.

The meeting was sponsored by CRUK and EACR
The sessions mainly focused on the definition of crucial topics such as tumour immunology, tumour microenvironment and innovative cancer treatments. Nanotechnology, an innovative approach in cancer prevention and treatment, was extensively discussed. As referred to by Dr. Mauro Ferrari (Professor and Chairman of The Department of NanoMedicine and Biomedical Engineering (nBME) at The University of Texas Health Science Center at Houston), nanotechnology will revolutionize all aspects of oncology from basic research to molecular imaging, from targeted therapeutics to early detection and mass screening.

As every year travel grants and awards were given to the best posters presented in the meeting. A fellowship by “Pezcoller Elena e Ferruccio Bernardi” has been assigned to a young promising researcher interested in oncology studies. EACR awarded a prize to Dr. Nicola Ivan Orlotti for the best poster presented at the meeting. The Gorgio Prodi lecture, in recognition of long term scientific activity in Italian cancer research with international recognized achievement and active participation in the society, was given by Prof Leonardo Santi. EACR was also present with a stand, an information point very useful to the young investigators.

Senior and young researchers attended the social event that traditionally takes place in a discotheque, this year the mythical Milan Atlantique.


The Program of SIC 2009 can be found at www.cancerologia.it

The BACR continues to develop its programme of focussed conferences and to support its members, to enable attendance at scientific meetings or training/exchange visits to laboratories. During 2009 one Mid-career Fellowship and 2 Exchange Fellowships were awarded to enable member to learn new techniques and facilitate ongoing collaborations.

Meetings held in 2009 were: The Joint BACR/EACR Conferences on “Chromatin & Cancer” and “Transcription & Cancer” held at Cambridge in July and reported in this issue of the EACR Year Book. The BACR Hamilton-Fairley poster prize was presented to Noel Wortham of Dundee University for his presentation at the “Chromatin & Cancer” conference.

Meetings planned for 2010 are on “Predictive Biomarkers of Response to Cancer Therapeutics” 25th March and the BACR 50th Anniversary meeting on “Hallmarks of Cancer: from Mechanisms to Therapies” 13th to 15th June at Edinburgh Conference Centre at Heriot-Watt University. Further details at: http://www.bacr.org.uk

The BACR, as in previous years, organised two educational workshops at the 5th NCRI Cancer Conference on “Clinical trial design for non-clinicians” and “DNA Repair” and once again the BACR/AstraZeneca and the BACR Translational Research Awards were presented at parallel symposia.

Finally, Barbara Cavilla, Administrative Secretary of the BACR, will be retiring in June of this year following the anniversary meeting and we are pleased to welcome Janet Alexander who will be based at the Leeds Institute of Molecular Medicine.

The BACR Secretariat will move to Leeds on 1st April 2010.