

Biobanking 2013

27th February 2013

The Royal College of Pathologists, London

Biobanking 2013 will discuss the banking of Biospecimens used for basic research through clinical trials. Efficient and effective collection, processing, storage, and tracking of biospecimens will be discussed. Bringing together biomedical and biopharmaceutical researchers, regulators, biorepository managers, and practitioners this event will investigate the best methods for effective use of biospecimens in the 21st Century.

Meeting Chair

Kirstin Goldring - BioBank facilitator, UCL BioBank, London

This event has CPD accreditation

Who Should Attend

Academic and Research Institutes: Group and Lab Heads, Postdoctoral Scientists and Research Students, Technical staff

Biotech and Pharma Industry: CEOs, Chief Scientists, Group Heads, Senior and Junior Scientists, Research

Private Biobank Staff and Managers

From the following departments:

Research & Development

Biobanking

Biorepository

Biological Sample Management

Biosample Management

Pharmacogenomics

Pathology

Genomics

Translational Medicine

Personalised Medicine

Lab Management

Inventory Management

Molecular Technologies

Biologics Research

Data Privacy/Protection/Security Officers

Quality Control and Quality Management

9:00 – 9:45

Registration

9:45 – 9:50

Introduction by the Chair: *Kirstin Goldring* - BioBank facilitator, UCL BioBank, London

9:50 – 10:15

Current and Future Potential for the Banking of Cells from Umbilical Cord and Cord Blood

Dr John Girdlestone, NHS Blood and Transplant, H & I Research Group, Colindale, UK

Umbilical Cord Blood is used increasingly as an alternative to adult sources of haematopoietic stem cells such as bone marrow, and the rapid adoption of double cord transplants for adults has resulted in further demands. In recognition of these clinical developments, the government has recommended an increased target of 50k units to be banked in the UK. In future, there is the potential to exploit the cord and placenta for their content of other cell types, such as endothelia and mesenchymal stromal cells, which could be banked for use in regenerative medicine and cellular therapies.

10:15 – 10:40

Basic Principles of Cryopreservation for Biobanking

Dr Charles Hunt, UK Stem Cell Bank, NIBSC, UK

An essential pre-requisite for biobanking is suitable and effective protocols for cryopreservation and long-term storage. Whilst effective methods exist for the cryopreservation of a wide variety of cell type, many cell types (including some stem cells) still prove refractory to freezing, or yield unacceptably low rates of survival. Effective cryopreservation requires an understanding of the basic physical principles that underly the freeze/thaw process and the cells response to the imposition of such a process. Basic principles of cryopreservation and storage and their application under GMP/GLP conditions will be discussed.

10:40 – 11:05

Managing your Cryoroom Project

Stephen Robinson, Air Products, UK

Managing a cryoroom project is a very complex process with many factors to take into consideration. Due to the wide range of issues to be taken into account, it is a very time consuming process and can require the co-ordination of a range of suppliers.

A well managed project can save time, money and effort. This presentation is designed to advise on the key factors involved in the design process and the key issues to consider when designing a cryogenic storage facility.

11:05 – 11:30

Speakers' photo then mid-morning break and trade show

Please try to visit all the exhibition stands during your day at this event. Not only do our sponsors enable Euroscicon to keep the registration fees competitive, but they are also here specifically to talk to you

- 11:30- 12:55 **Cardiovascular magnetic resonance imaging in population based studies and plans for UK Biobank**
Dr Steffen E. Petersen, Barts and The London NIHR Biomedical Research Unit, The London Chest Hospital, UK
Population research studies include the evaluation of health outcomes of groups of individuals to study the distribution of outcomes within the group. They include health outcomes studies, studies of patterns of health determinants, policies and interventions. Clearly, this is a broad field which interfaces with public health, health promotion, and social epidemiology. The goal of this presentation is to discuss the aims and provide details on using cardiovascular magnetic resonance in large scale population based cohort studies.
- 11:55 – 12:20 **Biobanking, and Genetic Research**
Dr Sheelagh McGuinness, Birmingham Law School, UK
This talk will consider whether genetic research poses special questions regarding research duties in biobanking research. Issues that will be considered are consent to participation, feedback, and anonymity.
- 12:20 – 12:45 **Supplementing Informed Consent with Representative Participative Institutions for the Governance of (Dried Blood Spot) Biobanks**
Dr. Conor Douglas, VU University Medical Center Amsterdam
The case of biobanks and biobanking has raised serious questions about the efficacy of conventional informed consent (IC) procedures to govern these biological research resources (Tutton and Hoyer 2005; O'Doherty et al. 2011). Critiques of IC are derived in part from the future orientated uses of biobanks, which means that participants cannot know what research (topics) their bio-material will be used for, or who will be using them. The legitimacy of rescuing IC with open consent models in biobanking have also been questioned because "without additional measures, open consent neither ensures congruence between donors' values and the use of their samples, nor does it provide accountability to donors." (O'Doherty et al. 2011: 368). This lecture will explore the case of an emerging secondary-use biobank in the Netherlands (Douglas et al. 2012), and argue that IC procedures need to be supplemented with representative participative institutions for its socially responsible governance. In doing so, it will be shown why participants (or their proxies) should be involved with the management of this particular kind of biobank (Douglas et al. 2012), and an outline of concrete and practicable ways forward will be presented by drawing on the work of O'Doherty et al. (2011) and their notions of 'adaptive governance'
- 12:45 – 13:35 **Lunch and trade show**
- 13:35 – 14:00 **Question and Answer Session**
Delegates will be asked to submit questions to a panel of experts. Questions can be submitted before the event or on the day
- 14:00 – 14:15 **Solutions and advantages for large scale Genotyping of Biobanks**
Marco P. Cappelletti, Illumina, UK
- 14:15 - 14:40 **Disaster Recovery planning for Cryo Storage facilities**
Susan Sinclair, MTS Cryo Stores UK Ltd
The talk will be "Disaster Recovery planning for Cryo Storage facilities" and will include
- Common Ultra Low Temperature system failures
 - Contingency planning
 - The recovery process
- 14:40 - 14:55 **DNA BioBanking, High Throughput DNA extraction and downstream genetic analysis**
Mr. Niels Kruize, LGC Genomics GmbH, Utrecht, The Netherlands
As a service provider we have always had the need to develop the optimal solutions in hardware, software and chemistries to meet the need of our customers. This unique position as both service and instrumentation/reagent provider has enabled the development of a range of laboratory solutions for delivery of cost efficient, high throughput DNA extraction and SNP genotyping. Recently improvements in robotics and the development of new chemistries has enabled the delivery of multi million singleplex datapoint projects in both SNP genotyping and amplicon targeted re-sequencing (TRS). The presentation will include video's, animations and pictures of the workflow in our labs in London UK and Berlin GER and their use across the LGC Genomics business.
- 14:55 – 15:20 **Biobanking at the Natural History Museum London**
Jacqueline Mackenzie-Dodds, Molecular Collections Manager, Natural History Museum, UK
The NHM is the UK's national museum of natural history, a world centre of scientific excellence in taxonomy and biodiversity housing 70 million specimens. Around 25K specimens are received each year, from focussed and opportunistic collecting, donations, bequests, Customs confiscations; all sources of genetic material for analysis. The Molecular Collections Facility, a centralised biorepository for non-human molecular research, launched in February

2012, has tackled various obstacles in order to meet the imperative to bank genetic information in the face of the current biodiversity crisis. The talk shares some challenges faced: facility set up, operations, and implementation of policy and procedures

15:20 – 15:45 **Afternoon Tea**

15:45– 16:10 **Ethical tissue – the human research tissue bank at the University of Bradford**

Dr Sue Boyce, DI & Head Of Ethical Tissue, The ICT Biocubator, University of Bradford

Ethical Tissue is a unique, cost recovery human research tissue bank. We hold a Human Tissue Authority (HTA) licence (12191) for the research that is conducted at the University of Bradford and Ethical approval for the tissue bank (Leeds East, Yorkshire & the Humber; 07/H1306/98+5) which allows all researchers access to the tissues we obtain. Currently we support 45 studies across the UK with fresh, cryopreserved and processed tissue.

A panel of senior scientists and clinicians act as Independent Scientific Advisory Consultants (ISAC's) to review applications for tissue on the basis of their scientific merit. This streamlined process of accessing the tissue and the ethical approval for the research is usually concluded in 2-3 weeks.

Research & Development agreements are in place at several hospitals so that we can access patients to consent to donate tissue for research. This also gives Ethical Tissue a unique opportunity to work more closely with clinicians in pursuing their own research interests.

16:10 – 16:35 **Development of an Automated Paramagnetic Resin-Based System for the Isolation of Genomic DNA from Large Volume (3-10ml) Whole Blood Samples**

Ms Amy Peters, Promega UK, UK

16:35 – 17:00 **Automation of sample handling and storage to increase sample quality**

Professor Berthold Huppertz, Director and CEO, Biobank Graz, Austria

Biobank samples are used by academic and industrial partners to study molecular, genetic and other factors underlying disease progress and outcome. Development of biomarkers and targeted treatments lead to stratification of medical treatment.

In the age of -omics technologies, there is an increasing demand for large numbers of highest quality samples. To meet this demand, Biobank Graz has introduced innovative automation technologies at the levels of liquid handling, FFPE tissue storage and minus 80°C storage. Today, biobanks take over the part of research partners by interactively developing innovative technologies, hence contributing to the benefit of a healthy population

17:00 **Chairman's summing up**

Dont forget to sign up to Euroscicon's e-newsletter at www.euroscicon.com/signup.htm to keep up to date with European Life Science news and events and to be notified of the follow up to this event

*This meeting was **organised by Euroscicon** (www.euroscicon.com), a team of dedicated professionals working for the continuous improvement of technical knowledge transfer to all scientists. Euroscicon believe that they can make a positive difference to the quality of science by providing cutting edge information on new technological advancements to the scientific community. This is provided via our exceptional services to individual scientists, research institutions and industry.*

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About the chair

Kirstin Goldring is currently the Biobank Facilitator at UCL. The role has involved in developing centralised biobank infrastructure and supporting researchers across UCL and Partners in aspects of biobanking. This has included dissemination of information to researchers on the ethics and regulations for use of human samples, providing advice on protocols for sample collection and

processing and supplying information on available biobanking resources. Kirstin graduated in Physiology and Pharmacology (BSc) in 1994 and also studied for her PhD (1997) in asthma research, at Southampton University. She moved to London in 1994 to undertake Post-Doctoral research in to Muscular Dystrophy at King's College and Imperial College. Kirstin then took the role as manager of the UK Parkinson's Disease Society Tissue Bank when it moved to Imperial College in August 2002, until June 2009.

About the Speakers

Jackie Mackenzie-Dodds is the recently appointed manager of the new Molecular Collections Facility at the Natural History Museum London, with over 22 years of experience in laboratory management and molecular biology research from both industry and academia (NHM, Royal Free Hospital, London School of Hygiene and Tropical Medicine, and Glaxo Group Research). Research at the NHM has included a variety of projects in non-human (plants and animals) in evolutionary development, phylogenetics and phylogeography. From 2008 – 2012 she has been involved in molecular collections management collaborating in initiatives in the EU and US including GGBN, ISBER, ESBB, CPB (CETAF), SYNTHESYS.

Sheelagh McGuinness is a University Fellow based in the Centre for Health Law, Science & Policy, at Birmingham Law School. Her research interests span law and bioethics (particularly reproduction, medical migration, and disability) focusing on the interplay between law, ethics, and policy. She is a member of the Independent Ethics and Governance Council of UK Biobank and also sits on the Royal College of General Practitioners' Medical Ethics Committee.

Steffen E. Petersen graduated in 1998 in Mainz in Germany. From 1998 until 2002 he worked as a Cardiology Registrar at the University Hospital Mainz with a major research interest in the field of Cardiovascular Magnetic Resonance. Supported by grants from the German Academic Exchange Service and the British Heart Foundation he joined the Cardiovascular MR group at the University of Oxford set up by Prof Stefan Neubauer (OCMR) and received his DPhil in 2005 entitled "Insights into cardiac remodelling by multi-modal magnetic resonance imaging and spectroscopy". He then finished his Cardiology training and continued his research interests as a clinical lecturer in the Department of Cardiovascular Medicine at the University of Oxford/John Radcliffe Hospital. Following his CCT in Cardiology in autumn 2009 he took up his current position as Reader in Cardiovascular Imaging and Centre Lead in the new Advanced Cardiovascular Imaging Centre funded through the NIHR Cardiovascular Biomedical Research Unit.

John Girdlestone has over 30 years' research experience in molecular and cellular biology, gained as a senior scientist in university, MRC, biotech start-up and NHS laboratories. He currently is the senior research fellow and programme manager of the H&I Research group at NHS Blood and Transplant Colindale, which is responsible for the development of immunobiological and immunogenetic projects relevant to the R&D and service needs of NHSBT. Current projects funded by NHSBT and external agencies include: Immune Reconstitution Following Umbilical Cord Blood Transplantation (NHSBT), and Umbilical Cord Mesenchymal Stromal Cells for treating Graft-versus-Host Disease (LLR).

Charles Hunt's background has been in the fields of cryobiology and tissue banking. In 1978, he joined the MRC Medical Cryobiology Group at the University of Cambridge where his research involved the cryopreservation of cornea, pancreatic islets, and arteries. In 1992, he and colleagues founded the East Anglia Tissue Bank; where he was responsible for the heart valve and autologous stem cell banking programs and developing skin and amniotic membrane banking. In 2003, he took charge of the newly founded UK Stem Cell Bank at the National Institute for Biological Standards and Control, where he is currently the Operations Manager.

Sue Boyce is the Designated Individual (DI) and Head of Ethical Tissue (ET), for the University of Bradford human research tissue bank. ET acquires, processes, stores and distributes human tissue for relevant biomedical research through five different types of consent. Researchers obtain ethical approval for their research through the Independent Scientific Advisory Consultants who assess their suitability to access tissue through ET. 45 ISAC approved Studies are supported through a wide variety of tissue-types and preparations, acquired from a variety of sources which include the NHS, private hospitals and healthy volunteers. Dr Boyce maintains a personal research interest in neurodegeneration

Berthold Huppertz holds a PhD in biology, is specialist in human anatomy and has been appointed full professor of cell biology in 2006. He has published more than 140 scientific papers and is sitting on the editorial boards of a number of journals. Berthold's main scientific contribution is in the field of reproduction, especially human placenta and pregnancy pathologies and predictive biomarkers. He has taken over the leadership of Europe's largest academic biobank, Biobank Graz, in 2011, to maintain and even increase the significance of Biobank Graz and to integrate it into international networks.

Niels Kruijze holds a qualification in Biochemistry from the University of Hogeschool van Utrecht and has over 16 years' experience working in genomics and drug discovery. He has worked as a product specialist for a range of technology innovators and prior to his current role with KBioscience/LGC Genomics he was Business Unit Manager for genomic equipment at MWG UK, a position he held for two years. Since 2006 Niels has been an integral member of the team at KBioscience, Now LGC Genomics, helping to establish and develop a product and service portfolio which has positioned KBioscience as an integral and respected supplier of genomics research solutions to customers large and small across the world. Niels currently leads the commercial team for the recently combined LGC Genomics and KBioscience businesses where he directs the sales, marketing and business development efforts for the product and service portfolio for the combined LGC Genomics/KBioscience business. The LGC Genomics/KBioscience merger in July 2011, has created a unique provider into the genomics research market providing a full range of high quality genomics products, services and solutions including, sample preparation (primarily, nucleic acid extraction), nucleic acid sequencing, genotyping and biobanking. LGC

Genomics has laboratories in the UK, Germany and North America along with sales and support staff in over 15 locations in Europe, America and the Far East. Niels is based in Utrecht in The Netherlands.

Stephen Robinson has worked for Air Products for the past five years, having previously worked for CryoService, Brenntag and ICI. He has been the Biomedical Product Manager the last four years and has been involved in many cryoroom designs at many major UK facilities. His experience in the whole suppl chain of liquid nitrogen, tanks, SIVL and freezers allows him to be able to provide a detailed overview of his subject.

Keywords: public good; health; innovation, blood, Stem cells, Cord, biobank, DNA, biomarkers, cells, B cell, cell lines, tissue, cord blood, tissue, Biodiversity, taxonomy, biorepository, umbilical cord; cord blood; mesenchymal; biobanking; cell therapy , genetics, feedback, consent, anonymity, cardiovascular magnetic resonance, population based cohort studies, surrogate endpoint, Cryopreservation, freezing, storage, biobank, automation, liquid handling, storage, Liquid Nitrogen, Cryogenic, Freezer, Biobank, Storage

Registration Web Site: www.regonline.co.uk/biobanking2013

POSTER

THE EUROPEAN VIRUS ARCHIVE (EVA) FP7 CAPACITY, Research Infrastructures, GA 228292

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The objective of the European Virus Archive (EVA) project is to create and mobilise a strategic 'One Health' based European network of high calibre centres with the appropriate expertise to collect, amplify, characterise, standardise, authenticate, distribute and track mammalian and other exotic viruses. The network will also produce associated reagents on demand, to laboratories throughout Europe and worldwide. The current network of nine core EVA laboratories from 6 European Countries, represents an extensive range of virological disciplines and already holds approximately 50% of the 500 recognised virus species. These viruses and their derivatives can be distributed globally on request, offering improved access for researchers, improving standardisation of diagnostic tests and for drug development. EVA initially developed its platform on the basis of selected European laboratories that had already accumulated specialised virus collections and the expertise to take these to a state-of-the-art level through integration into EVA. EVA will also link up with other network-based virus-associated programmes that exist globally. The EVA network extends beyond the EC through association with non-EU collections including laboratories in South Africa, Russia, China, the Netherlands, Germany, Italy and Turkey.

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- There may be an independent meeting report published within a few months of this event. If this is published we will send you an email to let you know the reference details
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