

## Programme Overview

Registration and CEP sessions on Sunday are in the Charles Carter Centre. Registration from 1630 on Sunday onwards is in the George Fox Centre, where the main meeting hall is situated.

Sessions from Monday onwards take place in both buildings- as per the detailed programme.

	SUN 6	MON 7	TUE 8	WED 9	THUR 10
0800		REGISTRATION OPENS	REGISTRATION OPENS	REGISTRATION OPENS	REGISTRATION OPENS
0900		WELCOME & PLENARY LECTURE	PARALLEL SESSIONS SYMPOSIUM 5	PARALLEL SESSIONS SYMPOSIUM 7	PARALLEL SESSIONS SYMPOSIUM 9
1000		PARALLEL SESSIONS SYMPOSIUM 1 SYMPOSIUM 2 WORKSHOP 1	SYMPOSIUM 6 WORKSHOP 3	SYMPOSIUM 8 WORKSHOP 4	SYMPOSIUM 10 SYMPOSIUM 11
1200	REGISTRATION OPENS	LUNCH	LUNCH 1205: UKEMS AGM 1250: EEMS AGM	LUNCH FOLLOWED BY FREE AFTERNOON	CONFERENCE CLOSE, FOLLOWED BY LUNCH
1245					
1300					
1315					
1330	CONTINUING EDUCATION PROGRAM	LUNCHTIME LECTURE	POSTER SESSION		
1400		PARALLEL SESSIONS SYMPOSIUM 3 SYMPOSIUM 4 WORKSHOP 2	AWARD LECTURES AND YOUNG SCIENTIST SESSION		
1530					
1630					
1700					
1730	OPENING OF CONFERENCE	POSTER SESSION FOLLOWED BY DINNER AT 1930, BARKER HOUSE			
1740	FRITZ SOBELS AWARD LECTURE				
1830					
1900	WELCOME RECEPTION & BUFFET		COACHES LEAVE FOR IMPERIAL HOTEL, BLACKPOOL		
1915			GALA DINNER (TIL LATE)	BBQ	

Sunday 6th

### Charles Carter Centre, Foyer

1200 Registration Opens

### Charles Carter Centre, Lecture Rooms 16/17

#### EEMS Continuing Education Program: Comet Assay (Sponsored by HLS)

- 1330 Brian Burlinson, HLS UK: Introduction
- 1345 Ulla Plappert-Helbig, Novartis, Switzerland: How to perform a high quality *in vivo* comet assay that is acceptable to the regulators? (pg 30)
- 1415 Carol Beevers, Covance UK: Interpretation of comet data - what does it all mean? (pg 31)
- 1445 Melanie Guerard, Roche, Switzerland: Combination and Integration of the Comet assay *in vivo*: Experiences with repeated dosing of Methyl methanesulfonate, Temozolomide and Dibenzopyrene (pg 32)
- 1515 Coffee Break
- 1545 Bas-Jan Van Der Leede, Janssen Research & Development Belgium: Results of the EFPIA survey on the *in vivo* comet assay (pg 33)
- 1615 Roland Froetschl, BfArM Germany: Experience with *in vivo* comet assays in pharmaceutical testing: A regulator's view (pg 34)
- 1645 Brian Burlinson & Speakers: Round-up

### Charles Carter Centre, Lecture Rooms 18/19

#### EEMS Continuing Education Program: DNA Damage Responses

- 1330 Simon Reed: Introduction
- 1340 Ruth Morse: The mechanisms and mutations of BER
- 1410 Simon Reed: The mechanisms and mutations of NER
- 1440 George Johnson: Replicative Fidelity and Mutagenesis
- 1510 Simon Reed: The mechanisms and mutations of HR

### George Fox Centre, Lecture Room 1

- 1730 Opening of conference  
Welcome by Presidents of EEMS and UKEMS
- 1740 Fritz Sobels Award Lecture  
Introduced by Leon Mullenders

### George Fox Centre, Foyer

- 1900 Welcome reception and buffet, followed by dinner at Barker House

**George Fox Centre, Foyer**

0800 Registration Opens

**George Fox Centre, Lecture Room 1**

0810 Special Interest Group: Industrial genotoxicology: Ann Doherty &amp; Elisabeth Lorge

**George Fox Centre, Lecture Rooms 5/6**

0810 Special Interest Group: Therapeutic cancer prevention: Karen Brown

**George Fox Centre, Lecture Room 1**

0900 Welcome from Francis L Martin (Local Organiser, Lancaster University)

0905 Plenary Lecture

Dr Ketan J Patel (PNAC, MRC, Cambridge): The genetic basis of how mammals protect against genotoxic metabolites (pg 35)

**George Fox Centre: Lecture Room 1****Symposium 1: Next generation sequencing (NGS) and its impact on understanding mutagenesis***Chair: L Mullenders (Netherlands)*

1000 Marcel Tijsterman (LUMC, Netherlands): Polymerase theta-mediated end joining (TMEJ) of replication-associated DNA breaks (pg 36)

1030 Ludmil B Alexandrov (Wellcome Trust Sanger Inst, Cambridge, UK)  
Signatures of mutational processes in human cancer (pg 37)

1100 Coffee Break

1120 Nicola Crosetto (Goethe University, Germany): Mapping 'Breakomes' by Next Generation Sequencing: Methods and Perspectives (pg 38)

1150 Alain Nicolas (Paris, France) Mutational landscape of yeast mutator strains (pg 39)

1220 Anton Gartner (Dundee, UK) Genetic Toxicology by whole genome sequencing of *C. elegans* (pg 40)**George Fox Centre: Lecture Rooms 5/6****Symposium 2: The Exposome (Organised by UKEMS MEG)***Chairs: Volker M. Arlt (UK); Soterios Kyrtopoulos (Greece)*

1000 Zdenko Herceg (IARC, France): Characterizing the epigenome and exposome in evaluating environmental exposures and cancer risk (pg 41)

1030 Serena Nik-Zainal (Wellcome Trust Sanger Institute, UK): Signatures of mutagenesis in mammalian cells (pg 42)

1100 Coffee Break

1120 Toby Athersuch (Imperial College London, UK): The role of metabolomics in characterising the human exposome (pg 43)

1150 Theo de Kok (Maastricht University, The Netherlands): Internal exposome: 'omics' approaches for developing novel biomarkers of exposure (pg 44)

1220 Tsun-Jen Cheng (National Taiwan University): Effects of particulate air pollution on pulmonary alterations in promoter DNA methylation in healthy Sprague-Dawley rats (pg 45)

1235 Dave Phillips (King's College London, UK): Adductomics – measurement of DNA and protein adducts in human tissues as an approach to defining the exposome (pg 46)

Charles Carter Centre, Lecture Rooms 18/19

**Workshop 1: Regulatory genetic toxicology: new challenges and case studies  
(Organised by UKEMS IGG & EEMS Industrial Gp)**

Chairs: Ann Doherty (UK); Elisabeth Lorge (France)

- 1000 Steven Dertinger (Litron Laboratories, USA): Interpreting *in vitro* micronucleus positive results: Simple biomarker matrix discriminates clastogens, aneugens, and irrelevant positive agents (pg 60)
- 1030 Jim Harvey (GSK, UK)  
The ICH M7 guideline: industrial feedback & case studies (pg 61)
- 1100 Coffee Break
- 1120 Peter Kasper (BfARM, Germany): Genetic toxicology testing of therapeutic biologicals: Current discussions on best practices (pg 62)
- 1150 Melanie Guerard (Roche, Switzerland): Genotoxicity testing of peptides: folate deprivation as a marker of exaggerated pharmacology (pg 63)
- 1210 Marc Audebert (INRA / France): A high throughput genotoxicity screen using  $\gamma$ H2AX (pg 64)
- 1230 Michelle Kenyon (Pfizer R&D): Investigation of the effect of compensatory erythropoiesis on the outcome of the *in vivo* Pig-a Mutation Assay (pg 65)

**George Fox Centre, Foyer**

1300 Lunch

**George Fox Centre, Lecture Room 1**

1315 Lunchtime lecture (Supported by ECVAM)

Chair: Raffaella Corvi (ECVAM, Italy)

David Kirkland (Kirkland Consulting, UK): Mammalian cell results with Ames-positive chemicals – correlations with presence or absence of *in vivo* genotoxic or carcinogenic activity (pg 101)

## George Fox Centre, Lecture Room 1

**Symposium 3: Cellular stress, chromatin remodelling and epigenetics  
(Organised and sponsored by the GSN)***Chair: Simon Reed (UK)*

- 1400 Ivan Ahel (Oxford, UK): Structure and catalytic mechanism of adp-ribosyl glycohydrolases (pg 102)
- 1430 Haico van Attikum (LUMC, Netherlands): Dissection of DNA damage responses using genetic interaction maps (pg 103)
- 1500 Simon Reed (Cardiff University, UK): Nucleotide excision repair factors directly regulate dNTP synthesis in response to UV damage in yeast (pg 104)
- 1530 Coffee Break
- 1600 Svetlana Khoronenkova (Oxford University, UK): Coordination of DNA damage signalling and repair (pg 105)
- 1630 Elena Robeska (Johannes Gutenberg University): Influence of SIRT6 on the repair of oxidatively generated DNA modifications (pg 107)
- 1645 TBC

## George Fox Centre, Lecture Rooms 5/6

**Symposium 4: Therapeutic Cancer Prevention***Chairs: Karen Brown (UK); Clarissa Gerhauer (Germany)*

- 1400 Karen Brown (Leicester University, UK): Less is more for cancer chemoprevention: evidence of a non-linear dose response for the protective effects of resveratrol (pg 113)
- 1430 Ann Williams (Bristol University, UK): Cyclooxygenase inhibitors for the prevention of cancer (pg 114)
- 1500 Clarissa Gerhäuser (DKFZ, Germany): Epigenetics and cancer chemoprevention (pg 115)
- 1530 Coffee Break
- 1600 Farhat Khanim (University of Birmingham, UK): Drug repurposing: From cancer treatment to prevention (pg 116)
- 1635 Gareth Evans (Manchester University, UK): Current state of the use of SERMS for women unaffected with breast cancer: Uptake of tamoxifen in young women (pg 117)
- 1710 Ankur Karmokar (University of Leicester, UK): Assessing molecular mechanisms of curcumin and its *in vivo* efficacy in targeting colorectal cancer stem-like cells (pg 118)

## Charles Carter Centre, Lecture Rooms 18/19

### Workshop 2: Nanogenotoxicity (Sponsored by ECETOC)

Chairs: Roel Schins (Germany); Ben van Ravenzwaay (Germany)

- 1400 Alan Poole (ECETOC, Belgium): Consideration of Relevant Investigations Providing a Picture of Genotoxic Potential of Nanomaterials (pg 126)
- 1410 Shareen Doak (Swansea University, UK): Caveats to investigating the genotoxicity of nanomaterials (pg 127)
- 1440 Laetitia Gonzalez (VUB, Belgium): Novel insights in nano-genotoxicology: from 2009 till now (pg 128)
- 1510 Martin Cliff (University of Fribourg, Switzerland): The role of oxidative stress in nanomaterial related genotoxicity *in vitro* (pg 129)
- 1540 Coffee Break
- 1600 Roel Schins (University of Dusseldorf, Germany): Genotoxicity of nano and non-nano materials: Lessons from different dimensions (pg 130)
- 1630 Lan Ma-Hock (BASF, Germany): A life-time inhalation carcinogenicity study with two nano materials (pg 131)
- 1700 Bennard van Ravenzwaay (BASF, Germany + ECETOC, Belgium): Summary & Conclusions

## George Fox Centre, Lecture Rooms 2/3 & Foyer

1730 Poster session

First hour: odd numbered posters. Second hour: even numbered posters. Authors will stand by their work for discussion opportunities. Beer, wine and non-alcoholic refreshments will be served.

Please take time to visit our trade stands

## Barker House

1930 Dinner (Included in delegate pass)

**George Fox Centre, Foyer**

0800 Registration Opens

**George Fox Centre, Lecture Room 1**

0810 Special Interest Group: Genome stability network: Simon Reed

**George Fox Centre, Lecture Rooms 5/6**

0810 Special Interest Group: Molecular epidemiology: Volker Artt

**George Fox Centre, Lecture Room 1**

**Symposium 5: Replication and transcription control after DNA damage**

*Chair: Leon Mullenders (Netherlands)*

- 0900 Niels de Wind (LUMC, Netherlands): Genome instability following mitotic transmission of unreplicated DNA lesions (pg 139)
- 0930 Emmanuelle Despras (Paris, France): Regulation of canonical and non canonical functions of specialized DNA polymerase eta in response to DNA damage (pg 140)
- 1000 Peter McHugh (Oxford, UK): The role of exonucleases in replication-coupled DNA interstrand crosslink repair (pg 141)
- 1030 Coffee Break
- 1100 Jordi Surrallés (Universitat Autònoma de Barcelona, Spain): Discovery of novel Fanconi anemia genes: fundamental research and clinical implications (pg 142)
- 1130 Evi Soutoglou (IGBMC, France): NEDD4 and Cul3 dependent RNA pol II degradation in the presence of DSBs (pg 143)

**George Fox Centre, Lecture Rooms 5/6**

**Symposium 6: Systems biology (Sponsored by Unilever)**

*Chairs: Francis L Martin (UK); Yeyejide Adeleye (UK)*

- 0900 Maurice Whelan (ECJRC, Ispra, Italy): Using Adverse Outcome Pathways to support mechanistic based safety assessment (pg 148)
- 0930 Rebecca Clewell (The Hamner, RTP, USA): Applying the TT21C principles to safety assessments of new chemicals including DNA damaging agents (pg 149)
- 1000 Bob van de Water (Leiden University, The Netherlands): Towards a high throughput microscopy pathway in toxicity reporter platform for chemical safety assessment (pg 150)
- 1030 Coffee Break
- 1100 Yeyejide Adeleye (Unilever, UK): Implementing Toxicity Testing in the 21st Century (TT21C) using Quercetin as a Case Study for Consumer Safety Risk Assessment (pg 151)
- 1130 Daniele Avancini (Swansea University, UK): MutAIT, a genetic toxicology portal : Structure and Applications in health risk assessment Pg 152)
- 1145 Eleanor Wilde (Swansea University, UK) Developing an 'in vitro' carcinogenicity tool (pg 153)

## Charles Carter Centre, Lecture Rooms 18/19

### Workshop 3: Ecogenotoxicity

*Chairs: Awadhesh Jha (UK); J Kevin Chipman (UK)*

- 0900 Awadhesh Jha (University of Plymouth, UK): Applications of biomarkers in aquatic organisms: linking human and environmental health (pg 157)
- 0930 Claudia Bolognesi (National Inst. Cancer, Genoa, Italy): Mussel micronucleus cytome assay, an approach to evaluate cytotoxic and genotoxic environmental pollution: examples of field application (pg 158)
- 1000 Rebecca J Van Beneden (University of Maine, USA): Impact of environmental exposures on metabolic pathways and behavior in fish (pg 159)
- 1030 Coffee Break
- 1100 Kevin Chipman (University of Birmingham, UK): Reflection of exposure of aquatic organisms to environmental pollutants via the transcriptome and epigenome (pg 160)
- 1130 Helena Reinardy (Bermuda Institute of Ocean Sciences): Comparative DNA damage & repair in echinoderm coelomocytes exposed to genotoxicants (pg 161)
- 1145 Rebecca Strong (Lancaster University, UK) Biospectroscopy as a tool to detect the effects of environmentally-relevant levels of two fungicides in an amphibian cell line (pg 162)

### George Fox Centre, Foyer

1200 Lunch

### George Fox Centre, Lecture Room 1

1205 UKEMS AGM

### George Fox Centre, Lecture Room 1

1250 EEMS AGM

### George Fox Centre, Lecture Rooms 2/3 & Foyer

1330 Poster session

First hour: odd numbered posters. Second hour: even numbered posters. Authors will stand by their work for discussion opportunities.

Please take time to visit our trade stands



## George Fox Centre, Lecture Room 1

### **EEMS & UKEMS Award Lectures and Young Scientist Session: 1530 – 1800**

*Chair: EEMS President, Leon Mullenders, Veronique Thybaud (France)*

- 1530 EEMS Award Winner: George E Johnson (Swansea University, UK) Using Genetic Toxicity Data for Human Health Risk Assessment, the Quantitative Way... (pg 167)
- 1630 Lorna Dallas (University of Plymouth, UK): Adverse outcome pathways for metal and radionuclide exposure: an ecotoxicological perspective using mussels as a sentinel organism (pg 168)
- 1645 Ali Tabish (Katholieke Universiteit Leuven, Belgium): Epigenetic alterations induced by nanoparticles (pg 169)
- 1700 Anton Endutkin (SB RAS Institute of Chemical Biology and Fundamental Medicine): New insights into activity of the formamidopyrimidine-DNA glycosylase from E.coli Pg 170)
- 1715 Manuel Orta Vázquez (University of Seville, Spain): The PARP inhibitor Olaparib disrupts Base Excision Repair of 5-aza-2'-deoxycytidine lesions (pg 171)
- 1730 UKEMS Award Winner: Sabine Langie (Flemish Institute of Technological Research, Belgium) Using the comet assay to study DNA repair: progress in the past decade (pg 172)

## Chaplaincy Centre

- 1830 Coach depart from Chaplaincy Centre for Imperial Hotel, Blackpool
- 1915 EEMS Conference Dinner (included in delegate pass)  
Coaches return back to Lancaster University 2230 and 0100

### George Fox Centre, Foyer

0800 Registration Opens

### George Fox Centre, Lecture Room 1

0810 Special Interest Group: Ecogenotoxicity: Awadhesh Jha

### George Fox Centre, Lecture Room 1

#### **Symposium 7: The DNA damage response and human disease**

*Chair: Simon Reed (UK)*

- 0900 Keith Caldecott (University of Sussex, UK): DNA strand breaks and neurological disease (pg 173)
- 0930 Karen Crasta (NTU, Singapore): DNA breaks and chromosome pulverisation from errors in mitosis (pg 174)
- 1000 Laura Niederhofer (The Scripps Research Institute, USA): Unexpected sequelae of endogenous DNA damage (pg 175)
- 1030 Coffee Break
- 1100 María Abad (Madrid, Spain): Reprogramming *in vivo*: The power of manipulating cell plasticity (pg 176)
- 1130 Rebecca McIntyre (Wellcome Trust Sanger Institute, Cambridge, UK): High-throughput genetic screens to identify novel regulators of mammalian genome maintenance (pg 177)

### George Fox Centre, Lecture Rooms 5/6

#### **Symposium 8: New insights into genetic & epigenetic mechanisms of de novo germline (epi)mutation**

*Chairs: Martin Brinkworth (UK); Francesca Pacchierotti (Italy)*

- 0900 Mino Rassoulzadegan (Inserm, Nice, France): RNA-mediated heredity of paramutation and acquired phenotype in the mouse (pg 183)
- 0930 John McCarrey (University of Texas, USA): Epigenetic regulation of genetic integrity in germ cells and stem cells (pg 184)
- 1000 Andrew Wilkie (University of Oxford, UK): Selfish mutations in spermatogenesis and paternal age effects (pg 185)
- 1030 Coffee Break
- 1100 Martin Brinkworth (University of Bradford, UK): Alternative *in vitro* approaches to the *in vivo* assessment of genetic, reproductive toxicity (pg 186)
- 1125 Francesca Pacchierotti (ENEA, Rome, Italy): Germline transmission of enhanced susceptibility to radiation-induced brain tumors (pg 187)
- 1145 Francesco Marchetti (Health Canada, Ottawa, Canada) Transplacental mutagenicity of benzo(a)pyrene in the mouse

Charles Carter Centre, Lecture Rooms 18/19

**Workshop 4: Consensus recommendations of the 2013 IWGT**

Chairs: David Kirkland (UK); Hansjoerg Martus (Germany)

- 0900 Hansjoerg Martus (Novartis, Switzerland): Introduction (pg 194)
- 0910 Bhaskar Gollapudi, (Exponent Inc, USA): IWGT Workgroup report on the in-vivo Pig-a mutant phenotype assay (pg 195)
- 0940 Brian Burlinson (HLS, UK): 6th IWGT Meeting: Report from the comet assay working group, 'Critical issues with the *in vivo* comet assay' (pg 196)
- 1010 Yoshifumi Uno (Mitsubishi Tanabe, Japan): A report of the liver micronucleus test working group in the 6th IWGT (pg 197)
- 1040 Coffee Break
- 1100 Paul White (Health Canada, Canada): A toolbox to estimate point-of-departure metrics in genetic toxicology (pg 198)
- 1130 George Douglas (Health Canada): Approaches for identifying germ cell mutagens: Report of the 2013 IWGT workshop on germ cell assays (pg 199)

George Fox Centre, Foyer

1200 Lunch

Afternoon excursion to the Lake District

Coach departs from Chaplaincy Centre 1300, arrives back at university approx 1800  
Pre-booked in advance, but please enquire for availability

EEMS BBQ

1915 Conference BBQ, Lancaster University

**George Fox Centre, Foyer**

0800 Registration Opens

**George Fox Centre, Lecture Room 1**

0810 Special Interest Group: Mitochondrial mutagenesis: Jon Lyon

**George Fox Centre, Lecture Room 1**

**Symposium 9: Mitochondrial Mutagenesis**

*Chairs: Jon Lyon (UK); Eugenia Dogliotti (Italy)*

0900 Patrick Chinnery (Wellcome Trust, Newcastle University, UK): Mitochondrial DNA mutations in health and disease (pg 200)

0930 Ian Holt (MRC NIMR, London, UK): The accumulation of mutant mitochondrial DNA in disease and ageing – Beyond oxidative stress (pg 201)

1000 Eugenia Dogliotti (Istituto Superiore di Sanita, Rome, Italy): The role of mitochondrial dysfunction in human syndromes defective in DNA repair (pg 202)

1030 Coffee Break

1100 Bill Rumsey (GSK, USA): Mitochondrial DNA damage in smoking related pulmonary disease (pg 203)

1130 Chloe Moss (MRC NIMR, London, UK): Towards a Mitochondrial Fragilome (pg 204)

1150 Jon Lyon (GlaxoSmithKline, UK): Understanding Mechanisms of Drug Induced Mitochondrial Toxicity

**George Fox Centre, Lecture Rooms 5/6**

**Symposium 10: Are There Thresholds for Genotoxicity? (Sponsored by ILSI Health and Environmental Sciences Institute)**

*Chairs: Jennifer Young Tanir (USA); George Johnson (UK)*

0900 Véronique Thybaud (Sanofi, France): Impact Of Moving From Qualitative To Quantitative Approach On Genotoxicity Risk Assessment (pg 205)

0930 Bhaskar Gollapudi (Exponent, USA): Dose-response assessment in genetic toxicology: Thresholds or points of departure? (pg 206)

1000 George Johnson (Swansea University, UK): Roles of DNA repair in points of departure for genotoxicity (pg 207)

1030 Coffee Break

1100 Paul White (Health Canada, Canada): Analyses of genotoxicity dose-responses: pros and cons of the different approaches and biological relevance (pg 208)

1130 Shoji Fukushima (Japan Bioassay Research Centre, Japan): Threshold of genotoxic carcinogens: Consideration from no-effect doses for cancer-related markers in chemical carcinogenesis (pg 209)

Charles Carter Centre, Lecture Rooms 18/19

**Symposium 11: Environmental monitoring & sensor based technology (Sponsored by Lancaster University)**

*Chair: Francis L Martin (UK)*

- 0900 Pierre L Martin-Hirsch (Lancaster University, UK): Translation into a clinical setting: the studies that would be needed (pg 211)
- 0930 Francis L Martin (Lancaster University, UK): Biospectroscopy as a novel approach to diagnose underlying disease: from biofluids to cytology (pg 212)
- 1000 Walter Schubert (Otto-von-Guericke-University, Germany): Systematic toponome decoding of disease mechanisms in human tissue (pg 213)
- 1030 Coffee Break
- 1100 Janina Kneipp (Humboldt Universität zu Berlin, Germany): Nanomaterials in complex biological systems: insights from surface enhanced Raman scattering (SERS) (pg 214)
- 1130 Heqing Shen (Institute of Urban Environment, Xiamen, China): Metabolomics study in a Population-Based Health Risk Assessment of Chemical-Related Male Infertility: Epidemiology Study of Arsenic (pg 215)

**George Fox Centre, Lecture Room 1**

- 1200 Close of conference  
Leon Mullenders & Francis L Martin

**George Fox Centre, Foyer**

- 1215 Lunch
- 1330 Coach departs from Chaplaincy Centre for Manchester airport  
Pre-booked in advance, but please enquire for availability