

Workshop on Transgenerational and Epigenetic Mechanisms of Radiation Toxicity at Chronic Doses

St Catherine's College, University of Oxford, Oxford, UK

10th – 12th December 2014

Aim

Bring together biological scientists studying transgenerational and epigenetics effects during chronic and long-term chemical and radiological exposures in the laboratory and field to:

- gain a greater understanding of the epigenetic changes in organisms exposed to ionizing radiation and of their relevance for key biological functions and transgenerational effects
- discuss current methods for epigenetic studies applicable across disciplines
- discuss current methods for data integration in systems biology
- agree future research priorities and identify promising approaches within two working groups (WG)
 - WG1 : Transgenerational and epigenetics in radioecology and ecotoxicology - similarities, differences and common future aims and approaches. Chair : Karel De Schamphelaere
 - WG2 : Integrating epigenetics and systems biology – approaches, tools and bioinformatics. Chair : Peter Kille?)

Day 1 - Wednesday 10 th December		
12.30	1.15	Arrival
Introducing the aims of the meeting and the MELODI Roadmap		
1.15	1.30	Introduction to the meeting. Oxford, topics, working groups and aims Dave Spurgeon
1.30	2.00	ALLIANCE and a Roadmap for Challenge 2: epigenetics and transgenerational effects Hildegarde Vandenhove
2.00	2.30	Report on the MELODI Barcelona meeting on epigenetics Simon Bouffler
Epigenetics in biology and toxicology (Chair: D. Spurgeon)		
2.30	3.00	Epigenetic Marking of the Zebrafish Developmental Program Peter Alestrom
3.00	3.30	Tea Break
3.30	4.00	Epigenetics and systems biology in endocrine disruption Eduardo Santos
4.00	4.30	Epigenetics of the model organism <i>E12</i> global and single-base resolution DNA methylation and its response to natural and chemical stressors Karel De Schamphelaere
4.30	5.00	Like father like son – transgenerational effects of paternal exposure to mutagens Yuri Dubrova
Day ends		
6.30		Dinner in St Catherine's College Main Hall

Day 2- Thursday 11 th December		
8.00	9.00	Breakfast in College
Epigenetics and transgen effects in ecotoxicology (Chair: D. Spurgeon)		
9.00	9.30	Multigenerational effects and epigenetic control in ecotoxicology of invertebrates Dick Roelofs
9.30	10.00	Genomes, epigenome and transcriptome: Analysis and integration for system biology in a soil sentinel Peter Kille
10.00	10.30	Discussion on common transgenerational and epigenetics research themes in ecotoxicology All in plenary
10.30	11.00	Tea D42Break
Epigenetics and transgen effects in radioecology (Chair: C. Adam-Guillermin)		
11.00	11.30	Transgenerational effects of radium and gamma exposure in fish and mammals Carmel Mothersill
11.30	12.00	DNA alterations and reprotoxic effects of gamma radiation over 3 generations of <i>Daphnia magna</i> Floran Parisot
12.00	12.30	Linking DNA damages and transgenerational effects of radionuclides in invertebrates Frédéric Alonzo
12.45	1.30	Lunch
Epigenetics and transgen effects in radioecology (Chair: C. Adam-Guillermin)		
1.30	2.15	Study of epigenetic changes induced by ionizing radiations in non human organisms : approach adopted within COMET-WP4 and first results Christelle Adam-Guillermin
2.00	2.45	Transgenerational non-targeted effects of parental exposure to ionizing radiation in <i>Daphnia</i> Elena I. Sarapultseva
2.30	3.15	Epigenetics of low dose radiation effects in eukaryotes Olga Kovalchuk
3.00	3.45	Tea Break
Epigenetics and transgen effects in radioecology (Chair: C. Adam-Guillermin)		
3.45	4.15	Origin and inheritance of spontaneous and induced epigenetic variants: lessons from <i>Arabidopsis thaliana</i> Claude Becker
4.15	4.45	Interactions between genetic and epigenetic effects Munira Kadhim
4.45	5.15	Discussion on common transgenerational and epigenetics research themes in radioecology All in plenary
Day ends		
7.00		Dinner in the pub
Day 3 - Friday 12 th December		
8.00	9.00	Breakfast in College
9.00	11.00	Breakout session. Epigenetics in radio-(eco)toxicology. Prioritising research questions. WG1: Transgenerational and epigenetics effects WG2: Epigenetic integration within system biology 2 Groups
11.00	11.20	Tea Break
11.20	12.15	Breakout group priority lists G1, G2
12.15	1.00	Consolidation of priority options All
Meeting ends		
Head for Home		