

# ***Aerosol Dynamics and Health:*** ***Strategies to Reduce Exposure and Harm***



**Institute for Science and Health Conference  
held jointly with *The Aerosol Society***

**Co-host: Cardiff University, School of Biosciences, Wales, UK**

**22-26 June 2008**

## ***Conference Programme***

***Sunday, June 22***

**12:00 P – 6:00 P    **Check-in****

### **WELCOME RECEPTION and KEYNOTE PRESENTATION**

**7:30    Welcome – Conference Chairperson**

**8:00    Evening Welcome Reception and Keynote Presentation:**  
**Frank Kelly: *London air quality: A real world experiment in progress***  
**(King's College London)**

**Monday, June 23**

**DAY 1: DIFFERENTIAL HEALTH EFFECTS OF ENVIRONMENTAL AEROSOL**

**9:00 Introduction by Session Chair**  
Tim Jones

**Characterisation**

**9:15 John Sodeau:** *Shipping and port emissions* (University College Cork)

**10:00 Teresa Moreno:** *Physicochemical characterisation of inhaled inorganic airborne particles* (Jaume Almera Institute of Earth Sciences, CSIC)

**10:45** Break

**11:00 Thomas Kulbush:** *Sources and source contributions to fine particles* (Air Quality & Sustainable Nanotechnology Unit, IUTA e.V., Germany)

**Measurement**

**11:45 Giorgio Martini:** *Future European emission standards for vehicles: the importance of the UN-ECE Particle Measurement Programme (PMP)* (Joint Research Centre - European Commission)

**12:30** Lunch

**1:30 Paul Quincey** *PM10 and PM2.5: Developments in European measurement methods and legislation* (National Physical Laboratory, UK)

**2:15 Ralf Zimmermann:** *Sources of fine particles: New measurement techniques* (University Rostock)

**Anthropogenic Sources**

**3:00 Rodger Duffin:** *Carbon nanotubes and the asbestos fibre paradigm* (MRC/University of Edinburgh Centre for Inflammation Research, Queen's Medical Research Institute)

**3:45 – 4:45 Poster Session with Refreshments**

**4:45 Tim Jones:** *Geochemistry and bioreactivity of fly-ash from coal-burning power stations* (Cardiff University)

**5:30 Lata Koshy:** *Characterisation and bioreactivity of respirable airborne particles from a municipal landfill* (Cardiff University)

**Tuesday, June 24**

**DAY 2: AEROSOL DYNAMICS: MEASUREMENT, DOSIMETRY, TOXICOLOGY**

**8:30 Introduction by Session Chair**  
**John McAughey**

**Deposition**

**8:45 Chong Kim:** *Deposition of aerosol particles in human lungs: In vivo measurements and modelling* (US Environmental Protection Agency)

**9:30 Werner Hofmann:** *Modelling particle deposition in human lungs: Modelling concepts and comparison with experimental data* (University of Salzburg)

**10:15 – 11:15 Poster Session with Refreshments**

**Dosimetry**

**11:30 Robert Phalen:** *Aerosol dosimetry considerations for animal inhalation studies* (University of California, Irvine)

**12:15 John McAughey:** *Experimental studies of human aerosol dosimetry* (British American Tobacco)

**1:00-2:00 Lunch**

**Toxicology**

**2:15 Otmar Schmid:** *Dosimetry and toxicology of ultrafine particles* (GSF-National Research Center for Environment and Health)

**3:00 JeanClare Seagrave:** *Comparative toxicology of combustion aerosol mixtures* (Lovelace Respiratory Research Institute)

**3:45 Break-Out Session 1** [*Aerosol particles can be discriminated by size and source. What implications do differences in size and sources have for biological dose and toxicology?*]

**4:45 Report-Out Session 1**

**7:30 – 10:00 Dinner Reception at Millennium Stadium**

**Dinner Presentation –**

**Kelly BéruBé:** *London's killer smog: Toxicity of combustion-derived particles* (Cardiff University)

**Wednesday, June 25**

**DAY 3: PUBLIC HEALTH ISSUES INVOLVING ENVIRONMENTAL AND TOBACCO AEROSOLS**

**8:30 Introduction by Session Chair**  
**Roger Jenkins / Judy Zelikoff**

***Aerosol Exposure***

**8:45 Barbara Hoffmann:** *Traffic exposure and coronary heart disease* (University of Duisburg-Essen)

**9:30 Tony Calland:** *Environmental tobacco smoke* (BMA Welsh Council)

**10:15** Break

**10:30 Ian Matthews:** *Epidemiology of human exposure to ambient particulate pollution* (Cardiff University)

***Strategies to Reduce Tobacco Aerosols: Smokeless Tobacco***

**11:45 Carl Phillips:** *Smokeless tobacco: Epidemiology of harm* (University of Alberta) – presented by Karyn Heavner

**12:30-1:30** Lunch

**1:45 Asseih Melikian:** *Smokeless tobacco: A gateway to smoking or a way away from smoking* (New York University)

***Strategies to Reduce Tobacco Aerosols: Nicotine***

**2:30 Jed Rose:** *Alternative nicotine delivery* (Duke University)

**3:15 Nina Lindblom:** *Nicotine vaccines* (Karolinska Institute)

**4:00** Break

**4:15** Break-Out Session 2 [*What work needs to be done to validate aerosol reduction strategies and promote better health?*]

**5:15** Report-Out Session 2

**Thursday, June 26**

**DAY 4: BIOMARKERS OF EXPOSURE & HARM**

**8:30 Introduction by Session Chair**  
**Kelly BeruBe**

***Biomarkers of Pulmonary Toxicology***

**8:45 Nick Plant:** *Biomarkers using in silico toxicology modelling* (University of Surrey)

**9:30 Keith Sexton:** *Pulmonary biomarkers based on alterations in gene expression following in vitro exposure to tobacco smoke components* (Cardiff University)

**10:15 Break**

***Oxidative Stress as a Biomarker***

**10:30 Steve Faux:** *Cigarette smoke and oxidative stress* (ATC, UK)

**11:15 Ian Mudway:** *Assessing the oxidative potential of ambient particulate matter* (King's College London)

**12:00-1:00 Lunch**

**1:15 Break-Out Session 3** [*Can biomarkers of harm and exposure be used to predict aerosol-related harm? How do we validate biomarkers for this purpose?*]

**2:15 Report-Out Session 3**

***Current Applications and Novel Strategies of Biomarkers***

**3:00 Judy Zelikoff:** *Early life insult by cigarette smoke may be predictive of chronic diseases later in life: A mouse model* (New York University)

**3:45 Closing Message – Conference Chairperson**