PRELIMINARY PROGRAMME
Sunday 1 October

18.00 - 20.30  Registration opens at Hotel Royal Continental
20.00  Welcome Cocktail

*The dress code: smart/casual*

On 1 October only the venue will be Hotel Royal Continental (Via Partenope, 38/44, Naples).
09:30 - 10:00 Opening Session

10:00-10:30 Keynote lecture 1. Chair: Kate Jones (UK)
Increased precision in exposure and risk assessment by integration of biomonitoring: the cases of bisphenol A and phthalates
Wolfgang Dekant
University of Wuerzburg, Germany

10:30-11:00 Keynote lecture 2. Chair: Len Levy (UK)
Biomonitoring in the workplace: recent experience from REACH applications for authorisation
Tim Bowmer
European Chemicals Agency, Risk Assessment Committee (ECHA-RAC)

11:00-11:30 Coffee Break

11:30-13:00 Plenary session 1.
The role of biomonitoring in modern risk assessment
Chairs: John Cocker (UK) and Claude Viau (CA)

Improving risk assessment of chemicals by the use of human biomonitoring – HBM4EU Project Activities
*Finnish Institute of Occupational Health, Helsinki, Finland

The importance of toxicokinetics in the interpretation of human biomonitoring data
Peter J. Boogaard*, G. Bachler
*Wageningen University & Research, The Netherlands

Biological monitoring of workers exposed to inorganic molybdenum compounds and its use in risk assessment
Len Levy
Cranfield University, U.K.

Bio-monitoring of occupational exposures to carbon disulphide: A scoping review
Demosthenes Papameletiou
EC JRC

13:00-13:45 Lunch
13:45-14:30 Poster Session 1

**Topic 1: Effect and susceptibility biomarkers**

Chairs: Ivo Iavicoli (IT) and Jaroslav Mráz (CZ)

**P_01**  Health status of workers exposed to pollution stress  
*S. Bousil, C. Abdennour and M. Tegurin*  
*University Badji Mokhtar-Annaba, Algeria*

**P_02**  Biomarkers of early genotoxicity and oxidative stress for occupational risk assessment of exposure to styrene in the fiberglass reinforced plastic industry  
*INAIL, Rome, Italy*

**P_03**  Evaluation of sugarcane and orange vinasses phytotoxicity by means of germination and root growth tests in lettuce seeds  
*Centro Universitário Hermínio Ometto - FHOUinararas, Araras, São Paulo, Brazil*

**P_04**  Evaluation of the cytotoxic and genotoxic potential of the Cactinea Nutracea™ in culture of liver hepatocellular carcinoma HepG2  
*F.F. Navarro, F.D. Campos-Pereira, M.M. Roberto, C.A. Christofoletti, M.A. Marin-Morales*  
*Centro Universitário Hermínio Ometto - FHOUinararas, Araras, São Paulo, Brazil*

**P_05**  Assessment of oxidative damage in workers exposed to low-dose benzene  
*C. Costa, M. Teodoro, G. Briguglio, S. Gangemi, S. Catania, V. Rapisarda, C. Fenga*  
*University of Catania, Italy*

**P_06**  Study of health status in class four workers in a charitable rural hospital in India  
*S. Goyal, A. Jawarkar, S. Goyal*  
*Sri Ramachandra University, Chennai, India*

**P_07**  Oxidative damage and urinary mutagenicity in children living in industrial contaminated sites of Priolo (Italy)  
*C. Ledda, M. Bracci, D. Cinà, M. Pane, P. Pavone, V. Rapisarda*  
*University of Catania, Italy*

**P_08**  Analysis of the toxic potential of treated vinasse using an integrated treatment system with the CWS: histopathology of Nile tilapia (Oreochromis niloticus)  
*A.C.C. Marcato, C.P. Souza, C. Moreira-de-Sousa, C.S. Fontanetti*  
*UNESP - São Paulo State University, Rio Claro, Brazil*

**P_09**  PON1 status and HDL subclasses as cardiovascular disease biomarkers  
*Universidad Autónoma de Nayarit, Mexico*

**P_10**  DNA repair capacity and its association with the expression of DNA repair genes in newborns from a polluted urban city  
*N. Montes-Castro, I. Alvarado-Cruz, and B. Quintanilla-Vega*  
*Instituto Politécnico Nacional, Ciudad de México, Mexico*

**P_11**  Effects of occupational toluene and noise exposure on hearing loss  
*Z. Vadnjal Gruden, P. Gruden, L. M. Beović*  
*EOS Zora Vadnjal Gruden Occupational Medicine Clinic, Kranj, Slovenia*

**P_12**  Comparing the genotoxicity of a multiwalled carbon nanotube and crocidolite towards the evaluation of its potential impact on the workers’ health  
*C. Ventura, A. Sousa-Uva, M.João Silva*  
*Instituto Nacional de Saúde Doutor Ricardo Jorge, Lisboa*

**P_13**  Autophagy in the cerebellar Purkinje cell induced by exposure to acrylamide  
*Tokyo University of Science, Japan*
Topic 2: General issues in biomonitoring  
Chairs: Giuseppe De Palma (IT) and Craig Sams (UK)

P_14 Human biomonitoring for Europe (HBM4EU): the role of Italy  
A. Alimonti, A. Pino, B. Bocca, A.M. Ingelido, A. Abballe, A.L. Iamiceli, F. Ruggieri, E. De Felip  
Istituto Superiore di Sanità, Rome, Italy

P_15 Italian reference values: evolution and interpretative contribution also for the evaluation of exposures to carcinogenic/mutagenic substances  
M.C. Aprea, M. Bettinelli, I. Iavicoli, P. Lovreglio, S. Negri, L. Perbellini, A. Perico, M.C. Ricossa, F. Salamon  
Azienda USL Toscana Sud Est, Siena, Italy

P_16 Smoking habit, biomarkers and risk perception  
Department of Clinical and Community Sciences, University of Milan and Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico, Milan, Italy

P_17 Time-trends of the German population exposure to contaminants using the part for human samples of the German environmental specimen bank (ESB)  
University of Erlangen-Nuremberg, Erlangen, Germany

P_18 Human biomonitoring – The Austrian experience  
H. Moshammer, H-P. Hutter  
Medical University of Vienna, Austria

P_19 Cytotoxics in medical care: questions from occupational professionals and caregivers about biological monitoring  
J. Passeron, F. Pillière, S. Ndaw, O. Hanser, A. Guilleux  
National Research and Safety Institute for the Prevention of Occupational Accidents and Diseases (INRS), Nancy, France

P_20 A biobank for studies of normal variability of biomarkers  
G. Sallsten, L. Barregard  
University of Gothenburg, Sweden

A. St-Amand, C. Khoury  
Government of Canada, Ottawa, Canada
**Topic 3: Metals**

Chairs: Alessandro Alimonti (IT) and Gerd Sallsten (SE)

**P_22** Traditional remedies and risk of heavy metal poisoning  
*A. Bendjamaa, D. Boulkrinat, M.C. Chekkour, B. Alamir*  
*University Hospital, Oran, Algeria*

**P_23** Estimation of occupational exposure to metals in a paint factory  
*S. Djelad-Kaddour, A. Younes, A. Bendjamaa, S. Chaoui, B. Rezk-kallah, H. Rezk-kallah*  
*University Hospital, Oran, Algeria*

**P_24** A role of enterobacteria in arsenic intake from seaweed  
*A. Hata, M. Hasegawa, K. Yamanaka, Y. Endo, Y. Yamano, T. Yamauchi, N. Fujitani, G. Endo*  
*Chiba Institute of Science, Chiba, Japan*

**P_25** Occupational exposure to chromium and nickel in thermal spraying workers: Preliminary biological and atmospheric assessments  
*Institut National de Recherche et de Sécurité (INRS), Vandœuvre Cedex, France*

**P_26** Oxidative DNA damage and lipids peroxidation as effect biomarkers of mercury-exposed workers  
*R. Kuras, B. Janasik, M. Stanislawska, K. Mikołajewska, J. Gromadzinska, W. Wasowicz*  
*Nofer Institute of Occupational Medicine, Lodz, Poland*

**P_27** Effect of personal protective equipment in workers’ metal exposures  
*M. Jumpponen, P. Heikkinen, H. Rönkkömäki, J. Laitinen*  
*Finnish Institute of Occupational Health, Helsinki, Finland*

**P_28** Biological monitoring of zinc from urine samples with SFODME technique  
*S. Karimi Zeverdegani, M. Rismanchian, M. Shabab, H.A. Rangkooy*  
*Isfahan University of Medical Sciences, Isfahan, Iran*

**P_29** Recommendation of biological values for hexavalent chromium and its compounds for the biomonitoring of chemicals at workplace  
*F. Lamkarkach, F. Sissoko, D. Brunet and the Scientific Expert Committee on Occupational Exposure Limits*  
*French Agency for Food, Environmental and Occupational Health and Safety (ANSES), Maisons-Alfort, France*

**P_30** Chronic kidney disease of unknown origin in sugarcane industry: Metals analysis in biological samples  
*E.-T. Smokou, B. Caplin, J. Norman, J. Le Blond, J. Morton*  
*Health and Safety Executive, Buxton, UK*

**P_31** Metals biomonitoring in hair, blood and urine in the Northwest Territories, Canada  
*M. Ratelle, M. Bouchard, B. Laird*  
*University of Waterloo, Ontario, Canada*

**P_32** Associations of blood lead levels with neuropsychological symptoms and delta-aminolevulinic acid dehydratase genotype in glass cutters  
*T. Ratkajec*  
*Medicina dela Rogaska, Rogaska Slatina, Slovenia*

**P_33** Recommendation of biological values for beryllium and its compounds for the biomonitoring of chemicals at workplace  
*F. Sissoko, F. Lamkarkach, D. Brunet and the ANSES Scientific Expert Committee on Occupational Exposure Limits*  
*French Agency for Food, Environmental and Occupational Health and Safety (ANSES), Maisons-Alfort, France*

**P_34** Nrf2, Keap1 promoters and DNA methylation as early effects biomarkers of inorganic arsenic exposure  
*Nofer Institute of Occupational Medicine, Lodz, Poland*
Monday 2 October

14:30-15:00  Keynote lecture 3.

Assessing exposure to metals using biomonitoring. Achievements and challenges.
Benoît Nemery de Bellevaux
Catholic University of Leuven, Belgium

15:00-16:30  Plenary session 2.

Advances in metal biomonitoring
Chairs: Silvia Fustinoni (IT) and Natalia Pawlas (PL)

Biomarkers of metal exposure and toxicity in urine: new opportunities and new challenges
Alfred Bernard
Catholic University of Leuven, Belgium

Effects of environmental and occupational exposure to lead and other xenobiotics on telomere length
*Institute of Occupational Medicine and Environmental Health, Sosnowiec, Poland

Blood lead levels following consumption of game meat in Italy
Silvia Fustinoni*, S. Sucato, D. Consonni, P.M. Mannucci, A. Moretto
*University of Milan and Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico, Milan, Italy

Urinary manganese related to exposure among manganese alloy production workers
Dag Ellingsen*, B. Berlinger, K. Dahl, Y. Thomassen
*National Institute of Occupational Health, Oslo, Norway

Biological monitoring of inorganic mercury – can the kidney burden be estimated?
Gerd Sallsten*, M. Akerstrom
*Sahlgrenska University Hospital and Academy, University of Gothenburg, Sweden

Health-based guidance values for blood lead and urinary cadmium – do they protect us?
Lars Barregard
Sahlgrenska University Hospital and Academy, University of Gothenburg, Sweden

16:30-17:00  Coffee Break
17:00-18:30 Special Session 1.

Human biomonitoring in chemical disasters and accidents

Chairs: Gunnar Johanson (SE) and Paul Scheepers (NL)

Human biological monitoring following chemical incidents – experience with a guideline in The Netherlands

Paul Scheepers*, C. Gielkens, N. Nijhuis
*Radboud Institute for Health Sciences, Radboudumc, Nijmegen, The Netherlands

Human biomonitoring after chemical incidents – Concepts, examples and lessons learned

Michael Bader*, S. Bäcker, T. Jäger, G. Van Bortel, S. Webendörfer, C. Oberliner, S. Lang
*BASF SE, Ludwigshafen, Germany

Human biomonitoring as a tool of objective exposure assessment: A case-study of a major train accident with acrylonitrile in Belgium

*Scientific Institute of Public Health, Brussels, Belgium

High PFAS in serum in Swedish populations exposed to fire fighting foam contaminated drinking water

Christian Lindh*, K. Jakobsson, K. Forsell, K. Scott, T. Fletcher
*Lund University, Sweden

Incident preparedness – Identification of chemicals suitable for human biomonitoring (HBM)

Gunnar Johanson
Karolinska Institutet, Stockholm, Sweden
17:00-18:30 Oral communications session 1.
Population studies
Chairs: Michèle Bouchard (CA) and Thomas Göen (DE)

Assessment of the environmental levels and predictors of exposure to some endocrine disruptors in a Belgian adult population: focus on mercury, cadmium, organochlorine pesticides and PCBs
*Catherine Pirard, S. Compere, K. Firquet, C. Charlier
*CHU of Liège, Belgium

Exposure to environmental chemicals in adolescents in Flanders: geographical and temporal variability
*Vrije Universiteit Brussel, Belgium

Biomonitoring of some common non-persistent pesticides and dietary determinants in Swedish populations
*Lund University, Sweden

Biomonitoring of organophosphorus flame retardants in a Swedish population – Results from four investigations between years 2000 – 2013
*Lund University, Sweden

Contaminant and nutrient biomonitoring in the Northwest Territories, Canada:
Shedding light on the risks and benefits from food choices
M. Ratelle, M. Laird, H. Swanson, Brian Laird*
*University of Waterloo, Ontario, Canada

The Alberta Biomonitoring Program phase three: environmental chemicals in pooled maternal and cord serum samples
Amy MacDonald*, D. Kinniburgh, S. Gabos, B. Lee, P. Cheung, F. Ackah, J. Graydon, A. Lyon, J. Jarrell, G. Benade
*University of Calgary, Alberta, Canada
17:00-18:30  Oral communications session 2.
Occupational exposure biomarkers 1
Chairs: Enrico Bergamaschi (IT) and Susana Viegas (PT)

Exhaled breath condensate: A novel matrix for biological monitoring to assess occupational exposure to respirable crystalline silica
Jackie Morton*, J. Staff, E. Leese
*Health & Safety Laboratory, Buxton, UK

Occupational exposure to BTEX in an oil refinery assessed by urine analysis:
Comparison between standard work and special clean-up
Amandine Erb*, P. Marsan, M. Burgart, A. Remy, F. Jeandel, A-M. Lambert-Xolin, R. Gaudin,
P. Biette, O. Hanser, A. Robert
*Institut National de Recherche et de Sécurité (INRS), Vandoeuvre, France

Using two different urinary biomarkers of benzo(a)pyrene to assess occupational exposure and individual cancer susceptibility
Anne Maitre*, D. Barbeau, M. Marques, R. Persoons
*Biology and Pathology Institute, Grenoble Cedex 9, France

Occupational exposure of cashiers to Bisphenol S, alternative of Bisphenol A in thermal paper
Sophie Ndaw*, A. Robert, A. Rémy
*Institut National de Recherche et de Sécurité (INRS), Vandoeuvre, France

Evaluation of the exposure to solvents in workers from a thermoplastic panels factory:
Air, dermal and bio-monitoring
Matteo Creta*, H. Moldovan, S. Voidazan, L. Godderis, J. Vanoirbeek, R. Corneliu Duca
*University of Leuven, Belgium

Biomonitoring of the herbicide glyphosate in a population from Zarcero, Costa Rica
*Lund University, Sweden
09:00-09:30  Keynote lecture 4.  
Chair: Ivo Iavicoli (IT)

Biological monitoring of workers exposed to engineered nanomaterials  
*Paul Schulte*, I. Iavicoli, V. Leso  
*National Institute for Occupational Safety and Health, Cincinnati, OH, USA*

09:30:11:00  Plenary session 3.  
Nanomaterials  
Chairs: Ivo Iavicoli (IT) and Paul Schulte (US)

Risk assessment and management of engineered nanomaterials: The relevance of susceptibility biomonitoring  
*Ivo Iavicoli*, V. Leso, P. Schulte  
*University of Naples Federico II, Italy*

Biomonitoring of oxidative stress and inflammation in nanocomposites production workers  
*Charles University, Prague, Czech Republic*

The role of biological monitoring in nanotechnology hazard and risk assessment  
*Enrico Bergamaschi*  
*University of Turin, Italy*

First results of the nano long-term inhalation study with two nanomaterials, Ceria and Barium sulphate  
*L. Ma-Hock, J. Keller, S. Gröters, B. van Ravenzwaay, Robert Landsiedel*  
*BASF SE, Ludwigshafen, Germany*

Global and gene specific DNA methylation in workers exposed to multi walled carbon nanotubes  
*Catholic University of Leuven, Belgium*
11:30-13:00 Special Session 2.
Novelties in the use of human biomonitoring to characterise pesticide exposure
Chairs: Kate Jones (UK) and Paul Scheepers (NL)

Human biomonitoring data collection from occupational exposure to pesticides
Kate Jones*, C. Sams, R. Bevan, T. Brown, F. Matthies, J. Hanlon, M. La Vedrine
*Health & Safety Executive, Buxton, UK

Pesticide urinary biomarker discovery in small-scale human volunteer studies using LC-full scan HRMS
Hans Mol*, R. Nijssen, A. Oerlemans, P. Scheepers
*RIKILT – Wageningen University & Research, Wageningen, The Netherlands

Biomonitoring long and short term exposure to penconazole using hair and urine specimens
Rosa Mercadante*, E. Polledri, F.M. Rubino, S. Mandic-Rajcevic, C. Colosio, A. Moretto, S. Fustinoni
*University of Milan and Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico, Milan, Italy

Urine collection methods for non-toilet trained children in enviromental exposure assessment of pesticides
*Radboud University Medical Center, Nijmegen, The Netherlands

Simultaneous assessment of phenolic metabolites in human urine for a specific biomonitoring of exposure to organophosphate and carbamate pesticides
Heike Denghel*, T.Göen
*Friedrich-Alexander-University Erlangen-Nürnberg, Erlangen, Germany
11:30-13:00 Oral communications session 3.
Effect biomarkers
Chairs: Maurizio Manno (IT) and Benoit Nemery de Bellevaux (BE)

Comparison of PCB induced inhibition of telomerase gene expression bioassays and PCB concentrations in human plasma
*Theresa Vasko, T. Schettgen, T. Kraus, P. Ziegler
*RWTH Aachen University, Germany

Banana plantation workers: Occupational exposure to pesticides and health effects in Ecuador
*Hans Peter Hutter, H. Moshammer, P. Wallner, S. Shahrakianavi, H. Ludwig, M. Kundi
*Medical University of Vienna, Austria

Genotoxicity assessment of particulate matter occupational exposure in bakeries – A human biomonitoring case study
*Carina Ladeira, C. Ramos, A. Ferreira
*Instituto Politécnico de Lisboa (ESTeSL/IPL), Portugal

Evaluation of a challenge assay as an effect biomarker in environmental or occupational biomonitoring studies
*H. Louro, O. Monteiro-Gil, D. Penque, Maria João Silva
*National Institute of Health Doutor Ricardo Jorge (INSA), Lisbon, Portugal

School-aged girls' intellectual function is more affected by low lead exposure than boys’
*Federal University of Bahia, Brazil

Urinary biomarkers of exposure to PAHs and association with oxidative damage to nucleic acids
*Giovanna Tranfo, D. Pigini, F. Tombolini, E. Paci
*INAIL, Rome, Italy
11:30-13:00 Oral communications session 4.
Occupational exposure biomarkers 2
Chairs: Masayuki Ikeda (JP) and Tiina Santonen (FI)

Biomonitoring of occupational exposure to styrene: Determinants of exposure and risk management measures
J. Richard, A. Maitre, C. Herve, M. Marques, V. Bonneterre, D. Barbeau, Renaud Persoons*
*CHU Grenoble Alpes, La Tronche, France

Environmental and biological monitoring of occupational exposure to polynuclear aromatic hydrocarbons during highway paving in Italy
Giuseppe De Palma*, M. Paganelli, M. Sarnico, C. Tomasi, S. Garattini, P. Apostoli
*University of Brescia, Italy

Urinary trimethyltin reflects blood trimethyltin in workers
Gaku Ichihara*, M. Iida, T. Fujie, T. Kaji, Y. Kim
*Tokyo University of Science, Japan

Human biomonitoring of resorcinol exposure in Finland
Simo P. Porras*, M. Hartonen, K. Ylinen, T. Tuomi, T. Santonen
*Finnish Institute of Occupational Health, Helsinki, Finland

Urinary elimination of S-phenylmercapturic acid and urinary benzene 16 hours after the end of the exposure to low concentrations of benzene
Piero Lovreglio*, G. De Palma, A. Barbieri, R. Andreoli, I. Drago, L. Greco, E. Gallo, L. Diomede,
P. Scaramuzzo, J. Fostinelli, P. Apostoli, L. Soleo
*University of Bari Aldo Moro, Bari, Italy

Workplace drug testing in Australia. A snapshot and emerging issues
John Edwards
Medvet Science, Adelaide, Australia

13:00-13:45 Lunch
13:45-14:30 Poster Session 2.

**Topic 4: Exposure biomarkers**

*Chairs: Arnulfo Albores (MX) and Kate Jones (UK)*

**P_35** Simultaneous determination of urinary S-phenylmercapturic and trans,trans muconic acids by solid-phase microextraction and gas chromatography/mass spectrometry

*S. Dugheri, A. Bonari, I. Pompilio, N. Mucci, M. Montalti, M. Gentili, G. Arcangeli*

*Università degli Studi di Firenze, Firenze, Italy*

**P_36** Evaluation of the professional carbon monoxide exposure

*N. Belabbaci, R. Tekkouk, I. H. Yermes, N. Lachgueur*

*University of Oran, Algeria*

**P_37** Results of a 1-vinyl-2-pyrrolidone metabolism study in Sprague-Dawley rats

*J. Bertram, T. Kraus, J. Steitz, R. Tolba, T. Schettgen*

*RWTH Aachen University, Germany*

**P_38** A review on human biomonitoring following exposure to solid waste incinerator emissions

*L. Campo, P. Bechtold, L. Borsari, S. Fustinoni*

*Università degli Studi di Milano and Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico, Milan, Italy*

**P_39** Decline in breath ethanol after inhalation of ethanol vapors and use of mouth wash

*L. Ernstgård, A. Pexaras, G. Johanson*

*Karolinska Institutet, Stockholm, Sweden*

**P_40** Inhalational and dermal exposure of deuterium-labelled bis (2-ethylhexyl) phthalate [DEHP] and diethyl phthalate [DEP] and subsequent biomonitoring in human urine

*A. M. Krais, C. Andersen, J. H. Pagels, C. Lindh, A. Gudmundsson, A. Wierzbicka*

*Lund University, Sweden*

**P_41** Can Skellefteå model reduce fire fighters’ exposure to chemical agents in operative work?

*J. Laitinen, H. Lindholm, M. Aatamila, S. Hyttinen and P. Karisola*

*Finnish Institute of Occupational Health, Helsinki, Finland*

**P_42** Perfluorinated compounds biomonitoring in serum of Italian children

*C. Ledda, G. La Torre, D. Cinà, P. Pavone, C. Pomara, V. Rapisarda*

*University of Catania, Italy*

**P_43** Development of a fluorescent immunosensor for the benzene biomarker S-PMA in human urine

*K. Koopal, S. van Veen, A. Pronk, T. Meijster, J. Urbanus, P. Aston*

*TNO, The Hague, The Netherlands*

**P_44a** Urinary biomarkers for exposure to diesel exhaust

*C. Sams, K. Jones*

*Health & Safety Executive, Harpur Hill, Buxton, UK*

**P_44b** HBM4EU –Science and policy for a healthy future

*Tiina Santonen on the behalf of HBM4EU consortium*

*Finnish Institute of Occupational Health*

**P_45** Occupational exposure to mycotoxins. A reality in Portuguese bakeries?

*S. Viegas, B. Osteresch, A.Cebola de Oliveira, B. Cramer, C. Viegas*

*Surrey University, Lisbon, Portugal*
**Topic 5: New methods and matrices**

Chairs: Silvia Fustinoni (IT) and Bernd Rossbach (DE)

**P_46** Monitoring the exposure of the population to metal-nanoparticles: A new analytical challenge  
_B. Bocca, F. Petrucci, S. Caini, A. Alimonti_  
_Istituto Superiore di Sanità, Rome, Italy_

**P_47** Analysis of gene polymorphisms in urinary cells  
_P. Chiarella, D. Carbonari, P. Capone, D. Cavallo, S. Iavicoli, A. Mansi, R. Sisto, G. Tranfo_  
_INAIL, Rome, Italy_

**P_48** Saliva as a matrix for ototoxic solvents absorption  
_M. Gherardi, M.P. Gatto, A. Gordiani, N. L’Episcopo_  
_INAIL, Rome, Italy_

**P_49** Biological monitoring of bisphenol S in urine of occupationally non-exposed German adults  
_T. Jäger, S. Bäcker, O. Schmid, C. Ehnes, M. Bader_  
_BASF SE, Ludwigshafen, Germany_

**P_50** Investigation of methyl ethyl ketone from urine samples extracted with carbon nanotube sorbents  
_S. Karimi Zeverdegan, A.R. Bahrami, M. Rismachian, F. Ghorbani Shaha_  
_Isfahan University of Medical Sciences, Isfahan, Iran_

**P_51** Genotoxicity assessment of mobile phone radiation in exfoliated buccal cells in human samples  
_F. M. de Oliveira, A.M. Carmona, C. Ladeira_  
_Instituto Politécnico de Lisboa (ESTeSL/IPL), Portugal_

**P_52** Development of biological reference material for proficiency test program - Urinary total arsenic and phenol  
_H. Lee and M. Lee_  
_Occupational Safety and Health Research Institute, Ulsan, South Korea_

**P_53** Determination of N-(2-hydroxyethyl)valine in globin of ethylene oxide-exposed workers using total acid hydrolysis and HPLC/MS/MS  
_National Institute of Public Health, Prague, Czech Republic_

**P_54** Metabolomic findings in young obese men and controls  
_Institute of Occupational Medicine and Environmental Health, Sosnowiec, Poland_

**P_55** New perspectives on the properties of the protein corona from sequential elution using detergents  
_M. Pink, W. Lin, D. Segets, N. Verma, W. Peukert, S. Schmitz-Spanke_  
_Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany_

**P_56** A method to assess mercapturic acids in urine as biomarkers of exposure to electrophilic chemicals in tobacco smoke  
_E. Polledri, R. Mercadante, L. Campo, S. Fustinoni_  
_Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico, Milano, Italy_

**P_57** Determination of n-heptane metabolites in urine by headspace-solid phase dynamic extraction-gas chromatography/mass spectrometry (HS-SPDE-GC/MS)  
_B. Rossbach, P. Kegel, S. Letzel_  
_Johannes Gutenberg University, Mainz, Germany_

**P_58** Use of buccal micronucleus cytome assay to evaluate genotoxic and cytotoxic effects of antineoplastic drugs in workers of different Italian hospitals  
_INAIL, Rome, Italy_
**Topic 6: Pesticides**

Chairs: Cristina Aprea (IT) and Thomas Göen (DE)

**P_59** Butyrylcholinesterase activity and lipids parameters in workers occupationally exposed to pesticides


*Universidad Autónoma de Nayarit (UAN), Tepic, Mexico*

**P_60** Cholinesterase activity in indigenous Mexican farmworkers exposed to pesticides


*Universidad Autónoma de Nayarit (UAN), Tepic, Mexico*

**P_61** Biotoxicological assessment of occupational exposure to organophosphorus pesticides among employees of a national pesticide production company by the determination of plasma cholinesterase activity

_B. Chefirat, H. Ouazzani, H. Rezk-kallah_

*University Hospital of Oran, Algeria*

**P_62** A biomonitoring, dermal and inadvertent ingestion sampling study of small quantity pesticide users in the horticultural and amenity gardening sector

_A. Connolly, K. Jones, K.S. Galea, I. Basinas, L. Kenny, P. McGowan, M. Coggins_

*National University of Ireland, Galway, Ireland*

**P_63** Evaluation of health status and risk perception by the use and handling of pesticides in urban sprayers


*Universidad Autónoma de Nayarit, Tepic, México*

**P_64** Improving exposure assessment methodologies for epidemiological studies on plant protection products


*Health & Safety Executive, Buxton, UK*

**P_65** Application of molecularly imprinted polymers to modify the response of electrochemical sensors for determination of pesticides in environmental and biological samples

_M. Khadem, F. Faridbod, S.J. Shahtaheri, A.R. Foroushani_

*Teheran University of Medical Sciences, Iran*

**P_66** Stress protein and histopathology evaluation of two metallic insecticides in the midgut of the millipede Rhinocricus padbergi

_R.B. Souza, A.C.C. Marcato, C. Moreira-de-Sousa, Y. Ansoar-Rodríguez, M.P.M. Coelho, C.P. Souza, O.C. Bueno, C.S. Fontanetti_

*UNESP - São Paulo State University, Rio Claro, Brazil*

**P_67** Pesticide residue analysis in hair and nails

_R. Nijsen, M. Savova, H. Mol_

*RIKILT – Wageningen University & Research, Wageningen, The Netherlands*

**P_68** Relationship between micronuclei frequency and antioxidant enzyme activities in workers occupationally exposed to pesticides

_M.C. Xotlaníhua Gervacio, I.M. Medina Díaz, B.S. Barrón Vivanco, Y.Y. Bernal Hernández, C.A. González Arias, M. Sordo Cedeño, A.E. Rojas García_

*Universidad Autónoma de Nayarit, Tepic, Mexico*
14:30-15:00 Keynote lecture 5.

Air pollution stress and the ageing phenotype
Tim Nawrot
Hasselt University & Leuven University, Belgium

15:10-16:40 Oral communications session 5.

Metals

Promoting health in small and artisanal mining of gold (PROSAMIGO) – A feasibility study for human biological monitoring of mercury exposure
I. Ottenbros, R. Z. Boerleider, B. Jubitana, J. Quik, N. Roeleveld, Paul Scheepers*
*Radboudumc, Nijmegen, The Netherlands

Urinary mercury excretion in Bolivian workers and families engaged in small scale gold mining
Jean Grassman*, J. Caravanos, G. Johnson, Z. Cheng
*CUNY Graduate School of Public Health and Health Policy, New York, USA

Biological monitoring of exposure to selenium compounds in workers of the selenium processing industry
Thomas Göen*, J. Hildebrand, A. Greiner, H. Drexler
*University of Erlangen-Nuremberg, Erlangen, Germany

Metal exposure and oxidative stress in Tunisian electric steel foundry workers
Laura Campo*, M. Hanchi, S. Sucato, E. Polledri, D. Saidane Mosbahi, S. Fustinoni
*University of Milan and Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico, Milan, Italy

Annual trends in general population exposure to cadmium: Studies in Japan, Korea and China
*Kyoto Industrial Health Association, Japan

Manganese and lead levels in settled dust in elementary schools are correlated with biomarkers of exposure in school-aged children
*Federal University of Bahia, Brazil
15:10-16:40 Oral communications session 6.  
Biomonitoring in risk assessment  
Chairs: Giuseppe De Palma (IT) and Peter J. Boogaard (NL)

Using biomarker data to establish a benchmark dose limit for perfluoro-octanoic acid (PFOA)

Tony Fletcher*, L. Stayner  
*Public Health England & London School of Hygiene and Tropical Medicine, London, UK

Levels of speciated arsenic in urine from the Canadian health measure survey and using biomonitoring equivalents for estimating risk

Annie St-Amand*, M. Croteau, M. Guay, A. Vézina, R. Charron, K. Werry  
*Health Canada, Ottawa, Canada

Italian reference values of elements in urine: the example of chromium and nickel

I. Iavicoli, M. Bettinelli, P. Lovreglio, S. Negri, L. Perbellini, A. Perico, M.C. Ricossa, F. Salamon, Maria Cristina Aprea*  
*USL Toscana Sud Est, Siena, Italy

Improving risk assessment of vineyard mancozeb applicators by integrating environmental and biological monitoring results

Stefan Mandic-Rajcevic*, F. M. Rubino, E. Ariano, D. Cottica, S. Neri, C. Colosio  
*University of Milan and International Centre for Rural Health of the San Paolo Hospital, Milan, Italy

Biomonitoring of leukotriene-mediated neuroinflammation for risk assessment of the toxic brain damage in methyl alcohol exposure

*Charles University, Prague, Czech Republic

In-field personal cholinesterase assessment project (PCAP). A method of measuring cholinesterase insecticide exposures amongst farmers in Western Victoria, Australia

*Flinders University, Adelaide Australia
15:10-16:40 Special session 3. 
Antineoplastic drugs in urine
Chairs: Rudolf Schierl (DE) and Cristina Sottani (IT)

Biomonitoring of antineoplastic drugs in urine: Pros and Cons
Rudolf Schierl
University of Munich (LMU), Germany

Speciation analysis of antineoplastic platinum drugs in urine
G. Koellensperger, Stephan Hann*
*University of Natural Resources and Applied Life Sciences, Vienna, Austria

Biomonitoring of platinum in urine after drug application by hyperthermic intraperitoneal chemotherapy and pressurized intraperitoneal aerosol chemotherapy
Sophie Ndaw*, O. Hanser, M. Vidal, N. Bakrin, J. Passeron, A. Guilleux, A. Robert
*Institut National de Recherche et de Sécurité (INRS), Vandoeuvre, France

A new, sensitive and versatile assay for quantitative determination of α-fluoro-β-alanine (FBAL) in human urine by using the reversed-phase ultrahigh performance-tandem mass spectrometry (RP-UPLC-MS/MS) system
Cristina Sottani*, S. Collina, D. Santorelli, E. Grignani, D. Cottica
*ICS MAUGERI SPA SB IRCCS, Pavia, Italy

Biomonitoring of antineoplastic drugs in urine of clinical staff
Michael J. Koller*, R. Schierl
*University of Munich (LMU), Germany

16:40-17:00 Coffee Break
**Hydrolytic cleavage products of globin adducts in urine as a new type of biomarkers.**
*Studies in rats and humans*
*National Institute of Public Health, Prague, Czech Republic*

**Diisocyanate- lysine conjugates in urine. A specific diisocyanate metabolite?**
**Laura Kenny***, K. Jones
*Health & Safety Executive, Buxton, UK*

**Suitability of different naphthalene metabolites for their application in biomonitoring studies**
**Katrin Klotz***, M. Zobel, A. Schäferhenrich, H. Drexler, T. Göen
*Friedrich-Alexander University of Erlangen-Nuremburg, Erlangen, Germany*

**Kinetics of tri-(2-ethylhexyl) trimellitate (TOTM) and its metabolites in blood and urine after single oral dose exposure**
**Christine Höllerer***, E. Eckert, G. Becker, T. Göen
*Friedrich-Alexander University of Erlangen-Nuremburg, Erlangen, Germany*

**Urinary excretion of heptanones, heptanoles and 2,5-heptane-dione after controlled acute exposure of volunteers to n-heptane**
**Bernd Rossbach***, P. Kegel, S. Letzel
*Johannes Gutenberg University, Mainz, Germany*

**Exposure to mycotoxins in Cork industry – The importance of a multibiomarker approach**
**Susana Viegas***, B. Osteresch, Y. Hövelmann, A. Cebola de Oliveira, B. Cramer, C. Viegas, H. U. Humpf
*Instituto Politécnico de Lisboa, Portugal*
17:00-18:30 Oral communications session 8.
Genetics, epigenetics and omics
Chairs: Betzabet Quintanilla-Vega (MX) and Sahoko Ichihara (JP)

Biological monitoring of low level exposure to benzene in a refinery: Effect of modulating factors
(Mariella Carrieri*, G. Spatari, D. Doria, M.E. Fracasso, G. Tranfo, G.B. Bartolucci, M.L. Scapellato, M. Manno
*University of Padua, Italy

Pesticides and health in agriculture. Genetic damage and susceptibility
(C. Costa, J. García-Lestón, S. Costa, V. Valdiglesias, S. Bonassi, B. Laffon, J. Snawder, João P. Teixeira*)
*Portuguese National Institute of Health, Porto, Portugal

Associations between apolipoprotein E genotypes and Hg concentrations in cord blood
*Josef Stefan Institute, Ljubljana, Slovenia

Identification of smoking-induced changes in DNA methylation in an epigenome-wide scan
(Sahoko Ichihara*, M. Nakatochi, T. Matsubara, G. Ichihara, M. Yokota, K. Yamamoto
*Jichi Medical University, Shimotsuke, Japan

NMR-based metabolomics of exhaled breath condensate from subjects after low level occupational exposure to chemical mixtures
*ICS Maugeri SPA IRCCS, Telese, Italy

Discrimination of carbon black particles – loaded with different concentrations of diesel engine exhaust – using untargeted metabolomics combined with cellular assays
(M. Pink, N. Martner, N. Verma, Simone Schmitz-Spanke*)
*Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany
17:00-18:30 Special session 4.

Alternative matrices
Chairs: Jackie Morton (UK) and Giovanna Tranfo (IT)

**Determination of phthalate metabolites in amniotic and cerebrospinal fluids**
Giovanna Tranfo*, E. Paci
*INAIL, Rome, Italy

**Chromium speciation in exhaled breath condensate: Improved risk characterization?**
E. Leese, Jackie Morton*, P.H.E. Gardiner, V. A. Carolan
*Health and Safety Executive, Buxton, UK

**Determination of mercury in hair of children**
F. Petrucci, O. Senofonte, G. Forte, C. Majorani, A. Pino, B. Bocca, Alessandro Alimonti*
*Istituto Superiore di Sanità, Rome, Italy

**Hair analysis for biomonitoring of human exposure to organic pollutants**
Radu Corneliu Duca
Catholic University of Leuven, Belgium

**Alternative strategies for the analysis of nanoparticle corona**
Mario Pink*, N. Verma, W. Lin, D. Segets, S. Schmitz-Spanke
*Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany
09:00-11:00 SCOT-SCOEL Joint Session.
Biological limit values and biological guideline values: an international overview
Chairs: Kate Jones (UK) and Len Levy (UK)

The biological exposure indices (BELs®) of ACGIH® – Concept, framework and practical application
Michael Bader
BASF SE, Ludwigshafen, Germany

The SCOEL approach to biological limit values and biological guidance values
Gunnar Johanson
Karolinska Instiutet, Stockholm, Sweden

The German approach for the recommendation of biological limit and guideline values
Hans Drexel
Friedrich-Alexander University, Erlangen, Germany

Derivation of occupational biological limit values and biological reference values at the French Agency for Food, Environmental and Occupational Health & Safety
Claude Viau
University of Montreal, Canada

Biological monitoring without limits
John Cocker*, K. Jones
*Health and Safety Executive, Buxton, UK

11:00-11:30 Coffee Break

11:30-12:00 Keynote lecture 6. Chair: Antonio Mutti (IT)
What can metabolic profiling and the exposome tell us about chemical risks?
Elaine Holmes
Imperial College, London, UK

12:00-12:30 Keynote lecture 7. Chair: Maurizio Manno (IT)
Ethics and biomonitoring: what are the ingredients for a successful combination?
Karel Van Damme
University of Leuven, Belgium

12:30-12:45 SCOT Celebration

12:45-13:00 Closing remarks