



## Sunday 8th September 2013

### Drinks Reception

08/09/13                    The Lowry Centre Art Gallery

## Monday 9th September 2013

### Registration

08:30 – 09:00

### Opening session

09/09/13 09:00 - 09:45 Main theatre

### Keynote: Kurt Straif, IARC

09/09/13 09:45 - 10:20 Main theatre

- K.1                            The IARC Monographs Program: the increasing use of mechanistic data in cancer hazard identification.  
*Kurt Straif*  
*International Agency for Research on Cancer, Lyon, France*

### Coffee

### Session 1: Adduct biomarkers

09/09/13 10:45 - 12.15 Main theatre

- 1.1                            Biomarkers of Polycyclic Aromatic Hydrocarbon Exposure in German Coke Oven Workers: relationship between PAH internal dose markers and target organ DNA adduct levels  
*Glenn Talaska<sup>1</sup>, Jeff Thoroman<sup>1</sup>, Brenda Schuman<sup>1</sup>, Heiko Kafferlein<sup>2</sup>*  
*<sup>1</sup>University of Cincinnati, Department of Environmental Health, Cincinnati, OH, USA, <sup>2</sup>Inst. For Prevention of Workplace Disease, Ruhr University Bochum, Bochum, Germany*
- 1.2                            Amino acid adducts in urine as a new type of biomarkers of alkylating agents  
*Jaroslav Mráz<sup>1</sup>, Igor Linhart<sup>2</sup>, Duškova Šárka<sup>1</sup>, Iveta Hanzlíková<sup>1</sup>, Ludmila Dabrowská<sup>1</sup>*  
*<sup>1</sup>National Institute of Public Health, Prague, Czech Republic, <sup>2</sup>Institute of Chemical Technology, Prague, Czech Republic*
- 1.3                            Suitability of N,N-dimethylformamide derived hemoglobin adduct as long-term biomarker  
*Thomas Göen, Elisabeth Eckert, Sonja Kilo, Hans Drexler*  
*Institute and Outpatient Clinic of Occupational, Social and Environmental Medicine, Erlangen, Germany*
- 1.4                            Biomonitoring of 4,4'-methylenediphenyl diisocyanate (MDI) with new specific biomarker MDA-Val-Hyd  
*Gabriele Leng, Wolfgang Gries*  
*Currenta GmbH & Co.OHG, Security-Health protection-Institute of*



*Biomonitoring, Leverkusen, Germany*

## **Session 2: New and emerging hazards**

**09/09/13 10:45 - 12.15 Compass room**

- 2.1 Testing for new emerging contaminants in biomonitoring studies:  
How confident are we?  
*Alain LeBlanc, Pierre Dumas*  
*Centre de toxicologie / INSPQ, Sainte-Foy, Quebec, Canada*
- 2.2 Background levels of metals in urine samples to assist with  
exposure assessments.  
*Jackie Morton, Liz Leese, Emma Tan, John Cocker*  
*Health & Safety Laboratory, Buxton, UK*
- 2.3 Perfluorinated compounds: advantages and disadvantages of  
biomarker versus dose in epidemiological research.  
*Tony Fletcher<sup>1</sup>, Debapriya Monda<sup>2</sup>*  
*<sup>1</sup>LSHTM, London, UK, <sup>2</sup>University of Salford, Salford, UK*
- 2.4 Blood and exhaled air can be used for biomonitoring of  
hydrofluorocarbons in humans.  
*Lena Ernstgård, Bengt Sjögren, Gunnar Johanson*  
*Karolinska Institutet, Institute of Environmental Medicine,  
Stockholm, Sweden*

## **Lunch**

## **Poster session**

**09/09/13 13:00 - 13:30**

## **Session 3: Effect Biomarkers**

**09/09/13 13:30 - 15:00 Main theatre**

- 3.1 GENOTOXIC EFFECTS OF OCCUPATIONAL AND  
ENVIRONMENTAL EXPOSURE TO LOW CONCENTRATIONS OF  
BENZENE  
*Piero Lovreglio<sup>1</sup>, Francesca Maffei<sup>2</sup>, Mariella Carrieri<sup>3</sup>, Maria Nicolà  
D'Errico<sup>1</sup>, Ignazio Drago<sup>1</sup>, Patrizia Hrelia<sup>2</sup>, Giovanni Battista  
Bartolucci<sup>3</sup>, Leonardo Soleo<sup>1</sup>*  
*<sup>1</sup>Interdisciplinary Department of Medicine, Section of Occupational  
Medicine "E.C. Vigliani", University of Bari, Bari, Italy, <sup>2</sup>Department  
of Pharmacology, University of Bologna, Bologna, Italy,  
<sup>3</sup>Department of Molecular Medicine, Section of Occupational  
Medicine, University of Padova, Padova, Italy*
- 3.2 Influence of genetic polymorphism on t,t-MA/SPMA ratio in 301  
benzene exposed subjects  
*Damiano Carbonari, Anna Rita Proietto, Giovanna Tranfo, Enrico  
Paci, Maddalena Papacchini, Antonella Mansi*  
*INAIL Research, Monteporzio Catone (Rome), Italy*
- 3.3 Clara cell protein in serum or urine as biomarker for airway effects -  
aspects on variability  
*Lars Barregard, Ghofran Jasem*  
*Occupational and Environmental Medicine, University of*



*Gothenburg, Gothenburg, Sweden*

- 3.4 Association of Past Diseases with Levels of Cadmium and Tubular Dysfunction Markers  
*Masayuki IKEDA, Jiro MORIGUCHI, Sonoko SAKURAGI, Fumiko OHASHI*  
*Kyoto Industrial Health Association, Kyoto, Japan*

## **Session 4: Occupational exposures 1**

**09/09/13 13:30 - 15:00 Compass room**

- 4.1 Occupational exposure to cytotoxic drugs. French survey from 13 hospitals and about 300 health-care workers.  
*Sophie Ndaw, Alain Robert, Flavien Denis, Philippe Marsan*  
*INRS, Vandoeuvre, France*
- 4.2 Results and implications of a longitudinal biomonitoring study on mercury exposure  
*Michael Bader<sup>1</sup>, Sandra Brill<sup>1</sup>, Axel Schlieter<sup>1</sup>, Christoph Uebler<sup>2</sup>, Josef Guth<sup>2</sup>*  
*<sup>1</sup>BASF SE, Occupational Medicine & Health Protection, Ludwigshafen, Germany, <sup>2</sup>BASF SE, Electrolysis I, Ludwigshafen, Germany*
- 4.3 Results of a large Italian survey of biomonitoring of carcinogenic risk factors in secondary metallurgical plants.  
*Giuseppe De Palma, Pietro Apostoli*  
*University of Brescia, Dept. of Medical and Surgical Specialties, Radiological Sciences, and Public Health, Section of Public Health, Brescia, Italy*
- 4.4 Determinants of exposure to chromium, nickel and manganese during gas metal arc welding (GMAW)  
*Renaud PERSOONS<sup>1,2</sup>, Damien ARNOUX<sup>3</sup>, Damien BARBEAU<sup>1,2</sup>, Sarah MONTLEVIER<sup>1,2</sup>, Anne MAITRE<sup>1,2</sup>*  
*<sup>1</sup>Joseph Fourier University, EPSP team, TIMC Laboratory, Grenoble, France, <sup>2</sup>Grenoble teaching hospital, Occupational and Environmental Toxicology Laboratory, Grenoble, France, <sup>3</sup>Drôme des Collines Occupational Health Department, Valence, France*

## **Coffee**

## **Session 5: Maternal and children's exposures**

**09/09/13 15:30 - 17:00 Main theatre**

- 5.1 Cell Proliferation of umbilical cord blood cells as a biomarker of environmental exposures  
*Lena Novack<sup>1</sup>, Ester Manor<sup>2,1</sup>, Elena Gurevich<sup>1</sup>, Maayan Yitshak-Sade<sup>1</sup>, Daniella Landau<sup>2,1</sup>, Batia Sarov<sup>1</sup>, Relli Hershkovitz<sup>2</sup>, Isabella Karakis<sup>3,1</sup>*  
*<sup>1</sup>Ben-Gurion University, Beer-Sheva, Israel, <sup>2</sup>Soroka University Hospital, Beer-Sheva, Israel, <sup>3</sup>Ministry of Health, Jerusalem, Israel*
- 5.2 Phthalates metabolites in amniotic fluid and maternal urine samples  
*Giovanna Tranfo<sup>1</sup>, Enrico Paci<sup>1</sup>, Daniela Pigni<sup>1</sup>, Silvia Capanna<sup>1</sup>, Sergio Iavicoli<sup>1</sup>, Maria Cristina Muzi<sup>2</sup>, Gianfranco Gelli<sup>2</sup>*  
*<sup>1</sup>INAIL Research, Occupational Medicine Department, Monteporzio Catone, Italy, <sup>2</sup>UOSA of Medical Genetics, Woman's Health Center S.Anna, Rome, Italy*



- 5.3 Biomonitoring for HCHs, DDTs and PBDEs in breast milk in Shenzhen, China  
*JianQing Zhang, YouSheng Jiang, RongJie Shi, Jian Zhou pops lab, Shenzhen Center for Disease Control & Prevention, Shenzhen, Guangdong, China*
- 5.4 High levels of manganese exposure and neurobehavioral effects on children  
*José A. Menezes-Filho<sup>1</sup>, Chrissie F. Carvalho<sup>2</sup>, Gustavo F.S. Viana<sup>1</sup>, Juliana L.G. Rodrigues<sup>1</sup>, Júnia R. Dutra<sup>1</sup>, Gustavo Siquara<sup>2</sup>, Nenader Abreu<sup>2</sup>*  
*<sup>1</sup>College of Pharmacy, Federal University of Bahia, Salvador, Bahia, Brazil, <sup>2</sup>Institute of Psychology, Federal University of Bahia, Salvador, Bahia, Brazil*

## Session 6: New biomarkers

09/09/13 15:30 - 17:00 Compass room

- 6.1 DNA Methylation Modifies Urine Biomarker Levels in 1,6-Hexamethylene Diisocyanate (HDI) Exposed Workers  
*Leena Nylander-french<sup>1</sup>, Michael Wu<sup>2</sup>, Jayne Boyer<sup>1</sup>, Alison Sanders<sup>1</sup>, John French<sup>3</sup>, Rebecca Fry<sup>1</sup>*  
*<sup>1</sup>Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, <sup>2</sup>Department of Biostatistics, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, <sup>3</sup>National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, USA*
- 6.2 Quantification of the mercapturic acids of acrylonitrile and its genotoxic metabolite cyanoethylene-epoxide in a pilot human biomonitoring study  
*Thomas Schettgen, Jens Bertram, Thomas Kraus*  
*RWTH Aachen, Institute for Occupational and Social Medicine, Aachen, Germany*
- 6.3 Identification and quantification of tebuconazole urinary metabolites in agriculture workers  
*Silvia Fustinoni<sup>1</sup>, Rosa Mercadante<sup>1</sup>, Elisa Polledri<sup>1</sup>, Samuele Scurat<sup>2</sup>, Federico Maria Rubino<sup>3</sup>, Stefan Mandic-Rajcevic<sup>3</sup>, Claudio Colosio<sup>3</sup>, Angelo Moretto<sup>4</sup>*  
*<sup>1</sup>Dipartimento di Scienze Cliniche e di Comunità, Università degli Studi di Milano e Fondazione IRCCS Ca 'Granda Ospedale Maggiore Policlinico, Milano, Italy, <sup>2</sup>AB Sciex Italia, Brugherio, Italy, <sup>3</sup>Dipartimento di Scienze della Salute, Università degli Studi di Milano, Milano, Italy, <sup>4</sup>Dipartimento di Scienze Biomediche e Cliniche "L. Sacco" Università degli Studi di Milano e Centro Internazionale per gli Antiparassitari e la Prevenzione Sanitaria Azienda Ospedaliera "Luigi Sacco", Milano, Italy*
- 6.4 Determination of Bis(2-propylheptyl)phthalate (DHPH) exposure in the general population  
*Gabriele Leng<sup>1</sup>, Wolfgang Gries<sup>1</sup>, Holger Koch<sup>0,1</sup>*  
*<sup>1</sup>Currenta GmbH & Co.OHG, Security-Health protection-Institute of Biomonitoring, 51368 Leverkusen, Germany, <sup>2</sup>Institute for Prevention and Occupational Medicine of the German Social Accident Insurance – Institute for the Ruhr-Universität Bochum (IPA), 44789 Bochum, Germany*



**Keynote: Michèle Bouchard, University of Montreal**

**09/09/13 17:00 - 17:35 Main theatre**

- K.2 Importance of toxicokinetics in understanding and interpreting biological monitoring results  
*Michèle Bouchard*  
*University of Montreal, Montreal, Quebec, Canada*

**SCOTT Business Meeting**

**17:45 – 18:30 Main theatre**

**Tuesday 10th September 2013**

**Keynote: Paolo Vineis, University College London**

**10/09/13 09:00 - 09:35 Main theatre**

- K.3 State of the art in exposome research.  
*Paolo Vineis*  
*Imperial College London, London, United Arab Emirates*

**Short Oral Session A: Public health**

**10/09/13 09:35 - 10:20 Main theatre**

- A.1 Measuring community exposures to solvent vapours from groundwater solvent plumes  
*Richard Oliver, Kateryna Babina, John Edwards*  
*School of the Environment, Flinders University, Adelaide, Australia*
- A.2 Phthalate, bisphenol A, triclosan and parabene exposure of general population in Slovenia  
*Janja Snoj Tratnik, Darja Mazej, Tina Kosjek, Ester Heath, Milena Horvat*  
*Jožef Stefan Institute, Ljubljana, Slovenia*
- A.3 Urinary nicotine metabolites: usefulness as biomarkers of smoking status  
*Ilse Van Overmeire<sup>1</sup>, Anca Elena Gurza<sup>2</sup>, Fátima Reis Reis<sup>3</sup>, Gudrun Koppen<sup>4</sup>, Milena Horvat<sup>6</sup>, Ioana-Rodica Lupsa<sup>2</sup>, Sónia Namorado<sup>3</sup>, Dominique Aerts<sup>5</sup>, Darja Mazej<sup>6</sup>, Pedro Aguiar<sup>3</sup>, Janja Snoj Tratnik<sup>6</sup>, Joris Van Loco<sup>1</sup>, Koen De Cremer<sup>1</sup>*  
<sup>1</sup>Scientific Institute of Public Health, Brussels, Belgium,  
<sup>2</sup>Environmental Health Center, Cluj-Napoca, Romania, <sup>3</sup>Institute of Preventive Medicine, Lisbon Faculty of Medicine, Lisbon, Portugal,  
<sup>4</sup>Flemish Institute of Technological Research, Environmental Risk and Health unit, Mol, Belgium, <sup>5</sup>Federal Public Service Health, Food chain safety and Environment, Brussels, Belgium, <sup>6</sup>Jozef Stefan Institute, Ljubljana, Slovenia

**Short Oral Session B: New biomarkers**

**10/09/13 09:35 - 10:20 Compass room**



- B.1 Fire Fighters' multiple exposure to perfluoroalkyl acids and 2-butoxyethanol present in AFFFs  
Juha Laitinen<sup>1</sup>, Jani Koponen<sup>2</sup>, Janne Koikkalainen<sup>3</sup>, Hannu Kiviranta<sup>2</sup>  
<sup>1</sup>Finnish Institute of Occupational Health, Kuopio, Finland, <sup>2</sup>National Institute for Health and Welfare, Kuopio, Finland, <sup>3</sup>University of Eastern Finland, Kuopio, Finland
- B.2 Internal exposure to perfluoroalkyl compounds in a French population of fish consumers  
Sébastien Denys, Virginie Desvignes, Camille Bellet, Oumar Moussa, Sandrine Fraize-Frontier, Jean-Luc Volatier  
Anses, Maisons-Alfort, France
- B.3 Mercapturic Acids Derived from 2- and 3-Nitrobenzanthrone  
Igor Linhart<sup>1</sup>, Jaroslav Mráz<sup>2</sup>, Iveta Hanzlíková<sup>2</sup>, Emil Frantik<sup>2</sup>  
<sup>1</sup>Institute of Chemical technology, Prague, Prague, Czech Republic, <sup>2</sup>National Institute of Public Health, Prague, Czech Republic

### Coffee

### Session 7: Interpretation of population surveys

10/09/13 10:45 - 12:15 Main theatre

- 7.1 Interpreting Population Level Biomonitoring Data in a Risk-Based Context: A Canadian Perspective  
Annie St-Amand<sup>1</sup>, Kate Werry<sup>1</sup>, Andy Nong<sup>1</sup>, Sean Hays<sup>2</sup>, Lesa Aylward<sup>2</sup>  
<sup>1</sup>Health Canada, Ottawa, Ontario, Canada, <sup>2</sup>Summit Toxicology LLP, Lyons, CO, USA
- 7.2 Trends of chemical exposure in Finland in recent years based on biomonitoring results  
Mirja Kiilunen  
Finnish Institute of Occupational Health, Helsinki, Finland
- 7.3 Interpreting biomarker data from the COPHES-DEMOCOPHES twin projects: Using lifestyle and environmental data to understand biomarker differences among countries  
Roel Smolders<sup>1</sup>, Elly Den Hond<sup>1</sup>, Eva Govarts<sup>1</sup>, Gudrun Koppen<sup>1</sup>, Hanny Willems<sup>1</sup>, Reinhard Joas<sup>2</sup>, Ludwine Casteleyn<sup>3</sup>, Anke Joas<sup>2</sup>, Pierre Biot<sup>4</sup>, Dominique Aerts<sup>4</sup>, Angerer Juergen<sup>5</sup>, Marika Berglund<sup>6</sup>, Louis Bloemen<sup>7</sup>, Argelia Castaño<sup>8</sup>, Milena Cerna<sup>9</sup>, Pierre Crettaz<sup>10</sup>, Marta Esteban<sup>8</sup>, Karen Exley<sup>11</sup>, Eleonora Fabianova<sup>12</sup>, Ulrike Fiddicke<sup>13</sup>, Marc Fischer<sup>14</sup>, Arno Christian Gutleb<sup>15</sup>, Adamos Hadjipanayis<sup>16</sup>, Katarina Halzlova<sup>12</sup>, Milena Horvat<sup>17</sup>, Marek Jakubowski<sup>18</sup>, Andromachi Katsonouri<sup>19</sup>, Lisbeth Knudsen<sup>20</sup>, Holger Koch<sup>5</sup>, Marike Kolossa-Gehring<sup>13</sup>, Andrea Krskova<sup>9</sup>, Andrea Lehmann<sup>10</sup>, Danuta Ligocka<sup>18</sup>, Ioana-Rodica Lupsa<sup>21</sup>, Darja Mazej<sup>17</sup>, Maurice Mulcahy<sup>22</sup>, Sónia Namorado<sup>23</sup>, Jeanette Nielsen<sup>20</sup>, Fátima M. Reis<sup>23</sup>, Peter Rudna<sup>24</sup>, Gerda Schwedler<sup>13</sup>, Ovnair Sepai<sup>11</sup>, Janja Tratnik Snoj<sup>17</sup>, Greet Schoeters<sup>1</sup>  
<sup>1</sup>VITO, Mol, Belgium, <sup>2</sup>BiPRO, München, Germany, <sup>3</sup>KULeuven, Leuven, Belgium, <sup>4</sup>FPS Health, Food chain safety and Environment, Brussels, Belgium, <sup>5</sup>Ruhr Universität Bochum, Bochum, Germany, <sup>6</sup>Karolinska Institutet, Stockholm, Sweden, <sup>7</sup>Environmental Health Sciences International, Hulst, The Netherlands, <sup>8</sup>Instituto de Salud Carlos III, Madrid, Spain, <sup>9</sup>National Institute of Public Health, Prague, Czech Republic, <sup>10</sup>Federal Office of Public Health (FOPH),



Bern, Switzerland, <sup>11</sup>Health Protection Agency, Chilton, UK, <sup>12</sup>Urad Verejného Zdravotníctva Slovenskej Republiky, Banská Bystrica, Slovakia, <sup>13</sup>Umweltbundesamt (UBA), Berlin, Germany, <sup>14</sup>Laboratoire Nationale de Santé, Luxembourg, Luxembourg, <sup>15</sup>Centre de Recherche Public – Gabriel Lippmann, Belvaux, Luxembourg, <sup>16</sup>Larnaca Hospital, Larnaca, Cyprus, <sup>17</sup>Jožef Stefan Institute, Ljubljana, Slovenia, <sup>18</sup>Nofer Institute of Occupational Medicine, Lodz, Poland, <sup>19</sup>State General Laboratory, Nicosia, Cyprus, <sup>20</sup>Københavns Universitet, København, Denmark, <sup>21</sup>Environmental Health Center, Cluj-Napoca, Romania, <sup>22</sup>Health Service Executive, Galway, Ireland, <sup>23</sup>Faculdade de Medicina de Lisboa, Lisboa, Portugal, <sup>24</sup>National Institute of Environmental Health, Budapest, Hungary

- 7.4 Benchmark Dose for cadmium (Cd) among general Japanese populations  
Masayuki IKEDA<sup>1</sup>, Sonoko SAKURAGI<sup>1</sup>, Ken TAKAHASHI<sup>2</sup>, Tsutomu HOSHUYAMA<sup>2</sup>, Jiro MORIGUCHI<sup>1</sup>, Fumiko OHASHI<sup>1</sup>  
<sup>1</sup>Kyoto Industrial Health Association, Kyoto, Japan, <sup>2</sup>University of Occupational and Environmental Health, Kitakyushu, Japan

## Session 8: Occupational exposures 2

10/09/13 10:45 - 12:15 Compass room

- 8.1 Towards a biological monitoring guidance value for acrylamide  
Craig Sams<sup>1</sup>, Kate Jones<sup>1</sup>, Nicholas Warren<sup>1</sup>, John Cocker<sup>1</sup>, Sarah Belf<sup>2</sup>, Peter Bull<sup>2</sup>, Michael Cain<sup>2</sup>  
<sup>1</sup>Health & Safety Laboratory, Buxton, UK, <sup>2</sup>BASF Performance Products plc, Bradford, UK
- 8.2 Circulating mitochondrial DNA as an effect-biomarker after exposure to halo-alkane based pesticides  
Lygia Therese Budnik<sup>1</sup>, Stefan Kloth<sup>1</sup>, Xaver Baur<sup>2,4</sup>, Alexandra Preisser<sup>1</sup>, Heidi Scharzenbach<sup>3</sup>  
<sup>1</sup>Institute for Occupational and Maritime Medicine, Department of Occupational Health, School of Medicine, University of Hamburg, Hamburg, Germany, <sup>2</sup>Institute for Occupational Medicine, Campus Benjamin Franklin, Charité-School of Medicine, Berlin, Germany, <sup>3</sup>Department of Tumor Biology, School of Medicine, University of Hamburg, Hamburg, Germany, <sup>4</sup>Norwegian Center of Maritime Medicine, Haukeland University Hospital, Bergen, Norway
- 8.3 Human Biomonitoring of N-methyl- and N-ethyl-2-pyrrolidone in automobile industry workers and non-exposed controls  
Stephan Koslitz, Tobias Weiss, Swetlana Meier, Birgit K. Schindler, Holger M. Koch, Thomas Bruening, Heiko U. Kaefferlein  
Institute for Prevention and Occupational Medicine of the German Social Accident Insurance - Institute of the Ruhr-University Bochum (IPA), Bochum, Germany
- 8.4 Occupational exposure to Polycyclic Aromatic Hydrocarbons (PAHs) during bitumen application  
Anne MAITRE<sup>1,2</sup>, Damien BARBEAU<sup>1,2</sup>, Tu N'GUYEN<sup>1,2</sup>, Marie MARQUES<sup>1</sup>, Renaud PERSOONS<sup>1,2</sup>  
<sup>1</sup>Joseph Fourier University, TIMC Laboratory, EPSP team, Grenoble, France, <sup>2</sup>Grenoble teaching Hospital, Occupational and Environmental Toxicology Laboratory, Grenoble, France

Lunch



## Poster session

### Session 9: Derivation of guidance values

10/09/13 13:30 - 15:00 Main theatre

- 9.1 Updated proposal for biological limit value of 1-hydroxypyrene in urine  
Frans Jongeneelen  
*IndusTox Consult, Nijmegen, The Netherlands*
- 9.2 Occupational exposure limit values for cadmium: the challenge of an integrated approach considering biomarkers and airborne concentrations  
Cointot Marie-Laure<sup>1</sup>, El Yamani Mounia<sup>1</sup>, Brunet Dominique<sup>1</sup>, Viau Claude<sup>2</sup>, Amzal Billy<sup>3</sup>  
<sup>1</sup>French Agency for Food, Environmental and Occupational Health and Safety (ANSES), Maisons-Alfort, France, <sup>2</sup>Head of the ANSES Biological Exposure Indices scientific committee, Maisons-Alfort, France, <sup>3</sup>Member of the Anses Occupational Exposure Limits scientific committee, Maisons-Alfort, France
- 9.3 A perspective on biological monitoring guidance values  
John Cocker  
*Health & Safety Laboratory, Buxton, UK*
- 9.4 A quantitative determination of provisional Biological Exposure Indexes (BEI) for pesticides  
Federico Maria Rubino<sup>1</sup>, Stefan Mandic-Rajčević<sup>1,2</sup>, Giorgio Vianello<sup>2</sup>, Eugenio Ariano<sup>3</sup>, Claudio Colosio<sup>1,2</sup>  
<sup>1</sup>Department of Health Sciences, Università degli Studi di Milano, via A. di Rudini, 8 I-20142 Milano, Italy, <sup>2</sup>International Centre for Rural Health – WHO Collaborating Centre, via S. Vigilio, 43 Milano, Italy, <sup>3</sup>Local Health Unit of Lodi, Piazza Ospitale, 10, I-26900 Lodi, Italy

### Session 10: Dermal exposures

10/09/13 13:30 - 15:00 Compass room

- 10.1 Skin permeation and metabolism of di(2-ethylhexyl) phthalate (DEHP)  
Nancy B. Hopf<sup>1</sup>, Aurelie Berthet<sup>1</sup>, David Vernez<sup>1</sup>, Emilie Langard<sup>2</sup>, Philip Spring<sup>3</sup>, Rene Gaudin<sup>2</sup>  
<sup>1</sup>Institute for Work and Health (IST), Lausanne, Vaud, Switzerland, <sup>2</sup>Institut National de Recherche et de Sécurité, Vandoeuvre Cedex, France, <sup>3</sup>Centre Hospitalier Universitaire Vaudois, Lausanne, Vaud, Switzerland
- 10.2 The association between urinary N-methylformamide and dermal N,N-dimethylformamide assessed by the tape-stripping method  
Yun Kyung Chung<sup>1,2</sup>, Kyong Sok Shin<sup>1</sup>, Mi-young Lee<sup>1</sup>  
<sup>1</sup>Occupational Safety and Health Agency, Incheon, Republic of Korea, <sup>2</sup>Hallym University Sacred Heart Hospital, Anyang, Republic of Korea
- 10.3 Biomonitoring of dermal exposure to cyclosiloxanes from consumer products using end-exhaled air  
Jacqueline Biesterbos, Gwendolyn Beckmann, Paul Scheepers  
*Radboud University Medical Centre, Nijmegen, The Netherlands*





- 10.4 Uptake and elimination of permethrin related to the use of permethrin treated clothing for forestry workers  
*Bernd Rossbach, Adrian Niemietz, Peter Kegel, Stephan Letzel*  
*University Medical Center of the Johannes Gutenberg University Mainz / Institute of Occupational, Social, and Environmental Medicine, Mainz, Germany*

## Coffee

### Session 11: Toxicokinetics

10/09/13 15:30 - 17:00 Main theatre

- 11.1 Metabolism of *N*-ethyl-2-pyrrolidone (NEP) - validation of biomarkers in urine for exposure assessment  
*Holger M Koch<sup>1</sup>, Stephan Koslitz<sup>1</sup>, Michael Bader<sup>0,2</sup>, Tobias Weiss<sup>1</sup>, Heiko U Käfferlein<sup>1</sup>, Thomas Brüning<sup>1</sup>*  
*<sup>1</sup>Institute for Prevention and Occupational Medicine of the German Social Accident Insurance - Institute of the Ruhr-University Bochum (IPA), Bochum, Germany, <sup>2</sup>BASF SE, Occupational Medicine & Health Protection, Ludwigshafen, Germany*
- 11.2 BIOMONITORING SHORT AND LONG TERM TERBUTHYLAZINE EXPOSURE BY HAIR AND URINE SPECIMENS  
*Rosa Mercadante, Elisa Polledri, Pier Alberto Bertazzi, Silvia Fustinoni*  
*Department of Clinical Sciences and Community Health, University of Milan and Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milano, Italy*
- 11.3 Inter- and intra-individual variability in biomarker values over a continuous six-day sampling period  
*Roel Smolders<sup>1</sup>, Nick Warren<sup>2</sup>, Kevin McNally<sup>2</sup>, John Cocker<sup>2</sup>, Kate Jones<sup>2</sup>, Sean Hays<sup>3</sup>, Lesa Aylward<sup>3</sup>, Chris Kirman<sup>3</sup>, Len Levy<sup>4</sup>, Ruth Bevan<sup>4</sup>, Holger Koch<sup>5</sup>*  
*<sup>1</sup>VITO, Mol, Belgium, <sup>2</sup>Health & Safety Laboratory (HSL), Buxton, Derbyshire, UK, <sup>3</sup>Summit Toxicology, Allenspark, CO, USA, <sup>4</sup>Institute of Environment and Health, Cranfield University, Cranfield, Bedfordshire, UK, <sup>5</sup>Institute for Prevention and Occupational Medicine, Ruhr-Universität Bochum, Bochum, Germany*
- 11.4 Elimination and biological half-time of cadmium in kidney  
*Gerd Sallsten<sup>1</sup>, Magnus Akerstrom<sup>1</sup>, Thomas Lundh<sup>2</sup>, Lars Barregard<sup>1</sup>*  
*<sup>1</sup>Department of Occupational and Environmental Medicine, Sahlgrenska University Hospital and Academy, Gothenburg, Sweden, <sup>2</sup>Department of Occupational and Environmental Medicine, Lund University Hospital and Academy, Lund, Sweden*

### Session 12: Population surveys

10/09/13 15:30 - 17:00 Compass room

- 12.1 Overview of Biomonitoring Initiatives Under the Government of Canada's Chemicals Management Plan  
*Julie Yome, Tye Arbuckle, Shawn Donaldson, Maria Ooi, Douglas Haines*  
*Health Canada, Ottawa, Ontario, Cambodia*
- 12.2 Bisphenol A and Organophosphate Exposure in the Israeli Population: Sources and Risk Factors



*Judith Spungen<sup>1</sup>, Tamar Berman<sup>1</sup>, Rebecca Goldsmith<sup>1</sup>, Thomas Goen<sup>2</sup>, Lena Novack<sup>3</sup>, Hagai Levine<sup>4</sup>, Yona Amital<sup>5</sup>, Tami Shohat<sup>6</sup>, Itamar Grotto<sup>1</sup>*

<sup>1</sup>Public Health Services, Ministry of Health, Israel, Jerusalem, Israel,

<sup>2</sup>Institute and Outpatient Clinic for Occupational, Social and Environmental Medicine, University Erlangen-Nuremberg, Erlangen, Germany, <sup>3</sup>Ben Gurion University, Beer Sheva, Israel, <sup>4</sup>Hebrew University-Hadassah, Jerusalem, Israel, <sup>5</sup>Bar Ilan University, Ramat Gan, Israel, <sup>6</sup>Centers for Disease Control, Ministry of Health, Israel, Tel Hashomer, Israel

12.3

Mercury and cadmium levels in Belgian children and their mothers  
*Catherine Pirard<sup>1</sup>, Koen De Cremer<sup>2</sup>, Ilse Van Overmeire<sup>2</sup>, Gudrun Koppen<sup>3</sup>, Marie-Christine Dewolf<sup>4</sup>, Els Van De Mieroop<sup>5</sup>, Dominique Aerts<sup>6</sup>, Pierre Biot<sup>6</sup>, Joris Van Loco<sup>2</sup>, Corinne Charlier<sup>1</sup>*

<sup>1</sup>CHU of Liège, Laboratory of Clinical, Forensic and Environmental Toxicology, Liège, Belgium, <sup>2</sup>Scientific Institute of Public Health, Brussels, Belgium, <sup>3</sup>Flemish Institute of Technological Research, Environmental Risk and Health unit, Mol, Belgium, <sup>4</sup>Provincial Institute for Hygiene and Bacteriology (IPHB), Mons, Belgium, <sup>5</sup>Provincial Institute for Hygiene (PIH), Antwerp, Belgium, <sup>6</sup>Federal Public Service Health, Food chain safety and Environment, Brussels, Belgium

12.4

Exposure to PAHs in subjects living in the vicinity of a solid waste incinerator

*Laura Campo<sup>1</sup>, Silvia Fustinoni<sup>1</sup>, Laura Erspamer<sup>2</sup>, Andrea Ranzani<sup>2</sup>, Giulia Gatti<sup>3</sup>, Petra Elisabeth Bechtold<sup>3</sup>, Carlo Alberto Goldoni<sup>3</sup>, PierAlberto Bertazzi<sup>1</sup>, Paolo Lauriola<sup>2</sup>*

<sup>1</sup>Department of Clinical Sciences and Community Health, University of Milan and Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy, <sup>2</sup>Environmental Health Reference Centre, Regional Agency for Environmental Prevention of Emilia-Romagna, Modena, Italy, <sup>3</sup>Department of Public Health, Local Health Unit, Modena, Italy

### **Keynote: Stephan Bose-O'Reilly, University Hospital Munich**

**10/09/13 17:00 - 17:35 Main theatre**

K.4

Human Biomonitoring in mercury and lead contaminated hot spots in Africa and Asia.

*Stephan Bose-O'Reilly*

*University Hospital Munich, Munich, Germany*

### **Conference Dinner**

**10/09/13 19:30 - 23:00 Manchester Town Hall**



## Wednesday 11th September 2013

### Session 13: Incident exposures

11/09/13 09:00 - 10:30 Main theatre

- 13.1 Biological Monitoring of Industrial Cleaners after a Large Scale Chemical Incident- a Complex (Mixture) Case Study  
*Henri Heussen, Jolanda Willems*  
*Arbo Unie, Harderwijk, The Netherlands*
- 13.2 Biomonitoring after chemical incidents and during maintenance works: a versatile tool for exposure analysis and assessment in the chemical industry  
*Michael Bader, Stefan Lang, Christoph Oberlinner*  
*BASF SE, Occupational Medicine & Health Protection, 67056 Ludwigshafen, Germany*
- 13.3 Implementation of a guidance for human biomonitoring following chemical incidents  
*Paul T.J. Scheepers<sup>0,1</sup>, Rob B.M. Anzion<sup>0,1</sup>, Gwendolyn Beckmann<sup>0,1</sup>, Henk Jans<sup>0,2</sup>, Janine Oosting<sup>0,1</sup>*  
*<sup>1</sup>Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands, <sup>2</sup>Regional Health Service Brabant and Zeeland, Tilburg, The Netherlands*
- 13.4 Are aircrews exposed to neurotoxic o-tricresyl phosphate during fume events?  
*Tobias Weiss<sup>1</sup>, Birgit K. Schindler<sup>1</sup>, Stephan Koslitz<sup>1</sup>, Horst Christoph Broding<sup>1</sup>, Jürgen Büniger<sup>1</sup>, Christian Felten<sup>2</sup>, Jörg Hedtmann<sup>2</sup>, Holger M. Koch<sup>1</sup>, Thomas Brüning<sup>1</sup>*  
*<sup>1</sup>Institute for Prevention and Occupational Medicine of the German Social Accident Insurance – Institute of the Ruhr-University Bochum (IPA), Bochum, Germany, <sup>2</sup>BG Verkehr, Hamburg, Germany*

### Session 14: New approaches and new analytical techniques

11/09/13 09:00 - 10:30 Compass room

- 14.1 Arsenic Speciation in Urine using micro liquid chromatography-ICP-MS for Routine Biological Monitoring  
*Liz Leese<sup>1,2</sup>, Jackie Morton<sup>1</sup>, Vikki Carolan<sup>2</sup>*  
*<sup>1</sup>Health & Safety Laboratory, Buxton, UK, <sup>2</sup>Sheffield Hallam University, Sheffield, UK*
- 14.2 Benefits of ICP-qqq-MS in MS/MS mode for challenging clinical trace element applications  
*Raimund Wahlen, Glenn Woods*  
*Agilent Technologies, Cheshire, UK*
- 14.3 A simple and cost-effective benzene biomonitoring test kit.  
*Lathan Ball<sup>1</sup>, John Cocker<sup>2</sup>, Kate Jones<sup>2</sup>*  
*<sup>1</sup>Biomark Limited, Cardiff, UK, <sup>2</sup>Health and Safety Laboratory, Buxton, UK*
- 14.4 Measurements of polybrominated diphenyl ethers and polychlorinated biphenyls in a single drop of blood  
*Jianwen She<sup>1</sup>, Dasheng Lu<sup>2</sup>, Ho Sai Simon Ip<sup>1</sup>*  
*<sup>1</sup>California Department of Public Health, Richmond, CA, USA, <sup>2</sup>Shanghai Municipal Center for Disease Control and Prevention, Shanghai, China, <sup>3</sup>Association of Public Health Laboratories, Silver Spring, MD, USA*

**Coffee****Discussion: How to promote the use of BM**

11/09/13 11:00 - 13:00 Compass room

**Closing session**

11/09/13 13:00 - 13:30

**Lunch & Close**

11/09/13 13:30 -

**\*\*\*Additional Workshop\*\*\***

After lunch on Wednesday 11<sup>th</sup> September, we will be holding a workshop on a CEFIC LRI project that is currently on-going. The workshop will focus on the identification of user requirements that will drive the technical specifications of the developed methodology and the respective computational platform. If you are interested in participating in this workshop, please register your interest at <http://www.surveymonkey.com/s/28TTBB2>.

**INTEGRA (Integrated External and Internal Exposure to Chemicals)**

The **objective** of **INTEGRA** is to bring together all available information within a coherent methodological framework for assessing the source-to-dose continuum for the entire life cycle of substances covering an extensive chemical space. Hence, the major component of INTEGRA will be a **unified computational platform** that integrates environmental fate, exposure and internal dose dynamically in time. In this way, the platform will be able to differentiate between biomonitoring data corresponding to steady exposure patterns as opposed to acute, one-off exposures. The platform will be largely validated using human biomonitoring data from Europe and the USA. The INTEGRA computational platform will be based on the existing platform developed in the frame of the [LRI-B4 INTERA](#) and [LRI-B5 TAGS](#) projects extending it to incorporate several **advances**:

1. Incorporation of ART (and its dermal exposure-integrated version, DART) for assessing occupational exposure, coupled to a generic PK model for linking exposure to internal dosimetry and estimating total body burden
2. Refinement of the TAGS multimedia model to account for multi-scale interactions affecting the environmental transport and fate of chemicals
3. Refinement of the TAGS/INTERA micro-environmental modeling for improved personal exposure assessment.
4. Refinement of the TAGS/INTERA generic PBTK model so as to incorporate life stage changes and physiological and metabolic efficiency change over an individual's lifetime (from conception till 80 years of age). The model will be able to cover perinatal exposure including exposure routes such as lactation, being practically a mother-fetus interaction model.
5. Inverse modeling for exposure reconstruction and HBM data assimilation.



## Posters

- P.1 Biological monitoring of workers exposed to indium compounds in Korea  
*Yong Lim Won, Gwang Yong Yi, Mi-young Lee*  
*Occupational Safety and Health Research Institute, Incheon, Republic of Korea*
- P.10 Quantification of cyclosiloxanes in exhaled air by thermal-desorption gas chromatography mass spectrometry.  
*Gwendolyn Beckmann, Jacqueline Biesterbos, Paul Scheepers*  
*Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands*
- P.11 Human metabolism and renal elimination of selenium according to the absorbed species  
*Thomas Jäger, Hans Drexler, Thomas Göen*  
*Institute and Out-Patient Clinic for Occupational, Social and Environmental Medicine of the University Erlangen-Nuremberg, Erlangen, Germany*
- P.12 Biomonitoring as an early warning of increased exposure to toxic substances in humans  
*Natalia Kotova, Stina Wallin, Eva Warensjö Lemming, Ingalill Gadhasson, Sanna Lignell, Anders Glynn, Per Ola Darnerud*  
*The Swedish National Food Agency, Uppsala, Sweden*
- P.13 The development of a "point of care" test (POCT) for benzene biomonitoring.  
*Lathan Ball<sup>1</sup>, Karen Whiting<sup>2</sup>, Amanda Harris<sup>2</sup>, John Cocker<sup>3</sup>, Kate Jones<sup>3</sup>*  
*<sup>1</sup>Biomark Limited, Cardiff, UK, <sup>2</sup>BBInternational, Cardiff, UK, <sup>3</sup>Health and Safety Laboratory, Buxton, UK*
- P.14 Biomarkers of manganese exposure and neuropsychological deficits in adults environmentally exposed  
*Gustavo F.S. Viana<sup>1</sup>, Chrissie F. Carvalho<sup>2</sup>, Lorena Nunes<sup>1</sup>, Diego Andrade<sup>1</sup>, Caroline M. Baptiste<sup>2</sup>, Jonatas R. Bessa<sup>2</sup>, Junia R. Dutra<sup>1</sup>, Neander Abreu<sup>2</sup>, José A. Menezes-Filho<sup>1</sup>*  
*<sup>1</sup>College of Pharmacy, Federal University of Bahia, Salvador, Bahia, Brazil, <sup>2</sup>Institute of Psychology, Federal University of Bahia, Salvador, Bahia, Brazil*
- P.15 Manganese biological monitoring by noninvasive biomarkers in adults living near an alloy-plant  
*Gustavo F.S. Viana<sup>1</sup>, Nathália R. Santos<sup>1</sup>, Vanesca L. Silva<sup>1</sup>, Lorena Nunes<sup>1</sup>, Sérgio S. Prado<sup>1</sup>, Chrissie F. Carvalho<sup>2</sup>, Juliana L.G. Rodrigues<sup>1</sup>, Neander Abreu<sup>2</sup>, José A. Menezes-Filho<sup>1</sup>*  
*<sup>1</sup>College of Pharmacy, Federal University of Bahia, Salvador, Bahia, Brazil, <sup>2</sup>Institute of Psychology, Federal University of Bahia, Salvador, Bahia, Brazil*
- P.16 Relationship between exposure to low level VOCs and oxidative stress  
*Massimiliano Mascelloni<sup>1</sup>, Marcus S. Cooke<sup>2</sup>, Silvia Fustinoni<sup>3</sup>, Rosa Mercadante<sup>3</sup>, Elisa Polledri<sup>3</sup>, Luca Olgiati<sup>3</sup>, Laura Campo<sup>3</sup>, Roy M. Harrison<sup>1</sup>, Juana Maria Delgado-Saborit<sup>1</sup>*  
*<sup>1</sup>University of Birmingham, Birmingham, UK, <sup>2</sup>University of Leicester, Leicester, UK, <sup>3</sup>University of Milano, Milano, Italy*
- P.17 Background Levels of Environmental Chemicals in Blood Collection and Storage Supplies for Alberta Biomonitoring Program Studies  
*Amy MacDonald<sup>1</sup>, Detlef Birkholz<sup>2</sup>, Stephan Gabos<sup>3</sup>, Weiping Zhang<sup>4</sup>, David Kinniburgh<sup>1,5</sup>*  
*<sup>1</sup>Alberta Centre for Toxicology, Calgary, Alberta, Canada, <sup>2</sup>ALS Environmental, Edmonton, Alberta, Canada, <sup>3</sup>Office of the Chief Medical Officer of Health, Alberta Health, Edmonton, Alberta, Canada, <sup>4</sup>Health Protection, Alberta Health, Edmonton, Alberta, Canada, <sup>5</sup>Department of Physiology & Pharmacology, University of Calgary, Calgary, Alberta, Canada*
- P.18 The relationship between exposure to benzene and the excretion of urinary t,t-muconic acid in petrochemical factory turnaround process workers  
*Jaehoon ROH, Seung Min LEE, Jong Uk WON, Chi Nyon KIM, Woo Jin JUNG*



*Yonsei University, Seoul, Republic of Korea*

- P.19 Effect biomarkers in a UK study of workers exposed to silica.  
*Howard Mason<sup>1</sup>, Ian Smith<sup>1</sup>, Nick Warren<sup>1</sup>, David Fishwick<sup>1,2</sup>*  
*<sup>1</sup>Health and Safety Laboratory, Buxton, UK, <sup>2</sup>Royal Hallamshire Hospital, Sheffield, UK*
- P.2 Evaluation of the current biological exposure index of toluene in Korea  
*Mi-young Lee<sup>1</sup>, Yong Lim Won<sup>1</sup>, Hochun Choi<sup>1,2</sup>*  
*<sup>1</sup>KOSHA, Incheon, Republic of Korea, <sup>2</sup>KIHA, Seoul, Republic of Korea*
- P.20 Design of Environmental Health Biomonitoring Physical Activity and Nutrition Survey called "Esteban"  
*Clémence Filloi, Amivi Oleko, Emmanuelle Szego, Juliette Contrerès, Christelle Lemoisson, Corinne Delamaire*  
*Institut de veille sanitaire, Saint-Maurice, France*
- P.21 Occupational PCB exposure in Finland: results of biomonitoring in 2002-2012  
*Simo Porras<sup>1</sup>, Tuula Karttunen<sup>1</sup>, Markus Sillanpää<sup>2</sup>, Tiina Santonen<sup>1</sup>*  
*<sup>1</sup>Finnish Institute of Occupational Health (FIOH), Helsinki, Finland, <sup>2</sup>Finnish Environment Institute (SYKE), Helsinki, Finland*
- P.22 Maintenance workers' multiple exposure to metals in biomass-fired power plants  
*Mika Jumpponen<sup>1</sup>, Pirjo Heikkinen<sup>1</sup>, Hannu Rönkkömäki<sup>0,2</sup>, Juha Laitinen<sup>1</sup>*  
*<sup>1</sup>Finnish Institute of Occupational Health, Kuopio, Finland, <sup>2</sup>Finnish Institute of Occupational Health, Helsinki, Finland*
- P.23 An inter-laboratory comparison for the analyses of pyrethroid metabolites in urine with respect to the comparability of exposure levels in national population studies  
*Thomas Göen<sup>1</sup>, Jun Ueyama<sup>2</sup>, Michihiro Kamijima<sup>2</sup>, Ulrike Fiddicke<sup>3</sup>, Marike Kolossa-Gehring<sup>3</sup>*  
*<sup>1</sup>Institute and Outpatient Clinic of Occupational, Social and Environmental Medicine, Erlangen, Germany, <sup>2</sup>Department of Occupational and Environmental Health, Nagoya, Japan, <sup>3</sup>Federal Environmental Agency (UBA), Dessau-Roßlau/Berlin, Germany*
- P.24 Biomarkers of sevoflurane exposure in operating room personnel: a still open debate  
*Maria Luisa Scapellato<sup>1</sup>, Mariella Carrieri<sup>2</sup>, Isabella Maccà<sup>1</sup>, Giovanna Tranfo<sup>3</sup>, Fabiola Salamon<sup>2</sup>, Giovanni Battista Bartolucci<sup>2</sup>*  
*<sup>1</sup>Occupational Medicine Unit, University Hospital of Padova, Padova, Italy, <sup>2</sup>Department of Molecular Medicine – University of Padova, Padova, Italy, <sup>3</sup>INAIL-Research, Department of Occupational Medicine, Roma, Italy*
- P.25 Investigation of saliva as an alternative to blood samples for the biological monitoring of inorganic lead  
*James Staff<sup>1</sup>, Jackie Morton<sup>1</sup>, Kate Jones<sup>1</sup>, Erica Guice<sup>2</sup>, Thom McCormick<sup>2</sup>*  
*<sup>1</sup>Health & Safety Laboratory, Buxton, UK, <sup>2</sup>Coventry Diagnostics LLC, Troy, Michigan, USA*
- P.26 Methamidophos volunteer study to define expected urine levels after ingestion of the Acceptable Daily Intake.  
*Fiona Garner, Kate Jones*  
*Health & Safety Laboratory, Buxton, UK*
- P.27 Biological Monitoring of Exposure to Carbamate Fungicides:determination of ethylene- and propylenethiourea by UHPLC-ESI-MS/MS  
*Cristina Sottani<sup>1</sup>, Davide Gatti<sup>3</sup>, Enrico Finozzi<sup>1</sup>, Claudio Colosio<sup>2</sup>, Claudio Minoia<sup>1</sup>*  
*<sup>1</sup>S. Maugeri Foundation, Pavia, Italy, <sup>2</sup>Department of Health Sciences of the University of Milan, Milan, Italy, <sup>3</sup>Ecotoxicology Department, Pavia, Italy*
- P.28 Can Occupational Biological Limit value be recommended for Acrylamide?  
*Mounia El Yamani<sup>1</sup>, Nolwenn Noisel<sup>3</sup>, Marie-Laure Cointot<sup>2</sup>*  
*<sup>1</sup>Institut de veille sanitaire, Saint Maurice, France, <sup>2</sup>Agence Française de sécurité sanitaire de l'alimentation l'environnement et le travail, Maisons Alfort, France, <sup>3</sup>Université Montréal, Montreal, Canada*



- P.29 Reference ranges for heavy metals in blood and urine in a random population sample in Spain  
Susana Torrado<sup>1</sup>, Mateu Serra<sup>2</sup>, Elisabet Palomera<sup>2</sup>, Enrique Gadea<sup>1</sup>  
<sup>1</sup>*Instituto Nacional de Seguridad e Higiene en el Trabajo. Centro Nacional de Condiciones de Trabajo, Barcelona, Spain,* <sup>2</sup>*Consorci Sanitari del Maresme, Mataró, Spain*
- P.3 Biological monitoring of occupational exposure to di(2-ethylhexyl) phthalate (DEHP) linked to wearing vinyl gloves  
René Gaudin  
*INRS, Vandoeuvre, France*
- P.30 REFERENCE VALUES FOR SELECTED ORGANOCHLORINATED COMPOUNDS IN SERUM BY USING TRIPLE QUADRUPOLE GC-MS/MS  
Roberta Turci, Finozzi Enrico, Minoia Claudio  
*Salvatore Maugeri Foundation, Pavia, Italy*
- P.31 MicroRNAs as biomarkers in arsenic exposure  
Elena Sturchio<sup>1</sup>, Teresa Colombo<sup>2</sup>, Nicoletta Carucci<sup>2</sup>, Claudia Meconi<sup>1</sup>, Priscilla Boccia<sup>1</sup>, Giuseppe Macino<sup>2</sup>, Claudio Minoia<sup>3</sup>  
<sup>1</sup>*Italian Workers' Compensation Authority (INAIL), Department for Production Plants and Anthropic Settlements, Rome, Italy,* <sup>2</sup>*University of Rome "La Sapienza" - BCE, Rome, Italy,* <sup>3</sup>*Laboratory for Environmental and Toxicological Measurements, IRCCS Pavia, S. Maugeri Foundation, Pavia, Italy*
- P.32 GENETIC BIOMARKERS IN THE DETOXIFICATION OF STYRENE OXIDE. APPLICATION TO BIOLOGICAL MONITORING OF OCCUPATIONAL EXPOSURE TO STYRENE.  
María José Prieto Castelló<sup>1,4</sup>, Antonio Cardona Llorens<sup>1,4</sup>, Dolores Marhuenda Amorós<sup>1,4</sup>, José María Roel Valdés<sup>2,1</sup>, Andrés Corno Caparros<sup>3,1</sup>  
<sup>1</sup>*Miguel Hernandez University, San Juan (Alicante), Spain,* <sup>2</sup>*INVASSAT, Alicante, Spain,* <sup>3</sup>*ANCOR Laboratory, Alicante, Spain,* <sup>4</sup>*Professional School of Occupational Medicine, Alicante, Spain*
- P.33 Biomonitoring of occupational exposure to PAHs and benzene at vehicle repair shops  
Renaud PERSOONS<sup>1,2</sup>, Emily BOUKARI<sup>3</sup>, Damien BARBEAU<sup>1,2</sup>, Claire HERVE<sup>1,2</sup>, Marie MARQUES<sup>1</sup>, Anne MAITRE<sup>1,2</sup>  
<sup>1</sup>*Joseph Fourier University, EPSP team, TIMC Laboratory, Grenoble, France,* <sup>2</sup>*Grenoble teaching Hospital, Occupational and Environmental Toxicology Laboratory, Grenoble, France,* <sup>3</sup>*Association Santé Travail InterEntreprises du Littoral (ASTIL62), Boulogne, France*
- P.34 Internal dose of metals in Italian urban adolescents.  
Anna Pino<sup>1</sup>, Beatrice Bocca<sup>1</sup>, Antonio Amato<sup>2</sup>, Alessandro Alimonti<sup>1</sup>  
<sup>1</sup>*Italian National Institute of Health, Rome, Italy,* <sup>2</sup>*National Association against Microcytemia, Rome, Italy*
- P.35 Monitoring Mercury Exposure in Children of two Riparian Communities in the Madeira River  
Claudia Maribel Vega Ruiz<sup>1,2</sup>, Sandra de Souza Hacon<sup>2,3</sup>, Dennys Mourao<sup>2</sup>, Gabriela da Silva<sup>2</sup>, Paulo Barrocas<sup>2,3</sup>, Cleber Carmo<sup>2</sup>, Jose Marcus Godoy<sup>0</sup>  
<sup>1</sup>*Universidade Catolica do Rio de Janeiro, Rio de Janeiro, Brazil,* <sup>2</sup>*Escola Nacional de Saude Publica, Rio de Janeiro, Brazil,* <sup>3</sup>*Fundação Oswaldo Cruz, Rio de Janeiro, Brazil*
- P.36 BIOETHICS OF BIOLOGICAL MONITORING IN THE WORKPLACE: MEDICAL ACTIVITY AND TOXIC RISK PREVENTION  
Antonio Cardona Llorens<sup>1,2</sup>, Dolores Marhuenda Amorós<sup>1,2</sup>, María José Prieto Castelló<sup>1,2</sup>  
<sup>1</sup>*Miguel Hernandez University, San Juan de Alicante, Spain,* <sup>2</sup>*Professional School of Occupational Medicine, San Juan de Alicante, Spain*
- P.37 METHODOLOGICAL SAMPLING APPROACH TO THE USE OF



GENETIC BIOMARKERS IN THE RISK ASSESSMENT OF OCCUPATIONAL EXPOSURE TO SOLVENTS

*Dolores Marhuenda Amorós<sup>1,3</sup>, María José Prieto Castelló<sup>1,3</sup>, Antonio Cardona Llorens<sup>1,3</sup>, José María Roel Valdés<sup>2,1</sup>*

*<sup>1</sup>Miguel Hernandez University, San Juan de Alicante, Spain, <sup>2</sup>INVASSAT, Alicante, Spain, <sup>3</sup>Professional School of Occupational Medicine, San Juan de Alicante, Spain*

- P.38 CYP2E1 PHENOTYPE AND EVALUATION OF GENETIC DAMAGE IN FOOTWEAR WORKERS EXPOSED TO TOLUENE  
*María José Prieto Castelló<sup>1,3</sup>, Dolores Marhuenda Amorós<sup>1,3</sup>, Antonio Cardona Llorens<sup>1,3</sup>, José María Roel Valdés<sup>2,1</sup>*  
*<sup>1</sup>Miguel Hernández University, San Juan de Alicante, Spain, <sup>2</sup>INVASSAT, Alicante, Spain, <sup>3</sup>Professional School of Occupational Medicine, San Juan de Alicante, Spain*
- P.39 Isotriamine, a Biomarker of Isocyanurate Exposure in Automotive Spray Painters  
*Zachary Robbins, Wanda Bodnar, Avram Gold, Zhenfa Zhang, Leena Nylander-french*  
*Department of Environmental Sciences and Engineering, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA*
- P.4 Worrying exposure to trace elements in the population of Kinshasa, Democratic Republic of Congo (DRC)  
*Joel Tuakula<sup>1,2</sup>, Dominique Lison<sup>2</sup>, Anne-Catherine Lantin<sup>2</sup>, François Mbuyi<sup>1</sup>, Gladys Deumer<sup>2</sup>, Vincent Haufroid<sup>2</sup>, Perrine Hoer<sup>2</sup>*  
*<sup>1</sup>Université of Kinshasa, Kinshasa, The Democratic Congo, <sup>2</sup>Université catholique de Louvain, Bruxelles, Belgium*
- P.40 Simultaneous screening of sixteen biomarkers of occupational exposure in urine  
*Lucie Rímnáková<sup>1</sup>, Petr Šimek<sup>1</sup>, Jaroslav Mráz<sup>2</sup>*  
*<sup>1</sup>Biology Centre, Czech Academy of Sciences, České Budejovice, Czech Republic, <sup>2</sup>National Institute of Public Health, Prague, Czech Republic*
- P.41 Feasibility study to centralize French occupational blood lead levels  
*Juliette Chatelot, Marie Houot, Mounia El Yamani, Ellen Imbernon*  
*Department of occupational health - French Institute for Public Health Surveillance (InVS), Saint-Maurice, France*
- P.42 Human biomonitoring studies in Slovenia - mercury  
*Janja Snoj Tratnik<sup>1</sup>, Darja Mazej<sup>1</sup>, Ana Miklavčič<sup>1</sup>, Joško Osredkar<sup>2</sup>, Mladen Krsnik<sup>2</sup>, Lijana Kononenko<sup>3</sup>, Majda Pavlin<sup>1</sup>, Alfred B. Kobal<sup>4</sup>, Milena Horvat<sup>1</sup>*  
*<sup>1</sup>Jožef Stefan Institute, Ljubljana, Slovenia, <sup>2</sup>University Medical Center, Ljubljana, Slovenia, <sup>3</sup>Ministry of Health, Chemical Office of the Republic of Slovenia, Ljubljana, Slovenia, <sup>4</sup>Mercury Mine Idrija, Idrija, Slovenia*
- P.43 Specific and sensitive quantification of seven metabolites of synthetic pyrethroids in human urine using GC/MS/MS  
*Thomas Schettgen, Petra Dewes, Thomas Kraus*  
*RWTH Aachen, Institute of Occupational and Social Medicine, Aachen, Germany*
- P.44 Bioaccessibility of vanadium, chromium, nickel and titanium present in welding aerosols  
*Balázs Berlinger<sup>1</sup>, Yngvar Thomassen<sup>1</sup>, Maxim Chashchin<sup>2</sup>, Valery Chashchin<sup>2</sup>, Dag G Ellingsen<sup>1</sup>*  
*<sup>1</sup>National Institute of Occupational Health, Oslo, Norway, <sup>2</sup>Northwest Public Health Research Centre, St. Petersburg, Russia*
- P.45 Urinary excretion of 2-ethoxyacetic acid after exposure to 2-ethoxyethanol in volunteers  
*Ilona Šperlingová, Vladimír Stránský, Ludmila Dabrowská, Šárka Dušková, Monika Tvrđíková, Jaroslav Mráz*  
*National Institute of Public Health, Prague, Czech Republic*
- P.46 Towards Reference Values Biomarkers of Oxidative Stress in Exhaled Breath Condensate





Roberta Andreoli<sup>1,2</sup>, Matteo Goldoni<sup>1,2</sup>, Rossella Alinovi<sup>2</sup>, Daniela Pignini<sup>1</sup>, Silvana Pinelli<sup>2</sup>, Massimo Corradì<sup>2</sup>, Antonio Mutti<sup>2</sup>  
<sup>1</sup>INAIL, Research Center at the University of Parma, Parma, Italy, <sup>2</sup>Department of Clinical and Experimental Medicine, University of Parma, Parma, Italy

- P.47 Automated Preparation of Blood, Urine and Serum Samples for ICPMS Analysis - Offline and/or Inline  
Paul Watson<sup>1</sup>, Paul Field<sup>2</sup>  
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- P.48 Time profiles of permethrin metabolites in orally exposed volunteers  
Mylène Ratelle, Michèle Bouchard, Jonathan Coté  
University of Montreal, Montreal, Quebec, Canada
- P.49 Plasma and urine manganese as short-term biomarkers of exposure  
Marissa Baker<sup>1</sup>, Noah Seixas<sup>1</sup>, Chris Simpson<sup>1</sup>, Jackie Morton<sup>2</sup>, John Cocker<sup>2</sup>  
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- P.5 French survey of occupational exposure to mycotoxins. Biomarkers and airborne contamination measurements.  
Alain Robert, Sophie Ndaw, Flavien Denis  
INRS, Vandoeuvre, France
- P.50 Hair as a biomarker for welder's exposure to manganese  
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- P.6 Biomonitoring of Employees Occupationally Exposed to Bisphenol A - A Comparison with Environmental and Occupational Assessment Values  
Sandra Brill<sup>1</sup>  
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- P.7 Urinary levels of cadmium and cotinine of general population in Slovenia  
Darja Mazej, Janja Snoj Tratnik, Milena Horvat  
Jožef Stefan Institute, Ljubljana, Slovenia
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Darja Mazej<sup>1</sup>, Janja Snoj Tratnik<sup>1</sup>, Milena Horvat<sup>1</sup>, Mladen Krsnik<sup>2</sup>, Joško Osredkar<sup>2</sup>, Lijana Kononenko<sup>3</sup>  
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- P.9 Sensitive monitoring of monoterpene metabolites in human urine for biomonitoring studies  
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