



Towards a sustainable working life

FORUM ON NEW AND EMERGING OSH RISKS

BRUXELLES, 29-30 OCTOBER 2009

PROCEEDINGS

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Colophon

NEW OSH ERA - New and Emerging Risks in Occupational Safety and Health
Anticipating and dealing with change in the workplace through coordination of OSH
risk research

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About the NEW OSH ERA project

NEW OSH ERA - "New and Emerging Risks in Occupational Safety and Health - Anticipating and dealing with change in the workplace through coordination of OSH risk research" is a project funded within the ERA-NET scheme under the Sixth EU Framework Programme for Research and Technological Development.

NEW OSH ERA aims to increase the overall scale, effectiveness and quality of research into new and emerging risks through coordination of OSH research in Europe.

In addition to this core objective, NEW OSH ERA also aims:

- To promote the exchange of Information related to new and emerging risks making available scientific knowledge on new and emerging risks at work to policy makers and other stakeholders and to facilitate the information flow and collaboration between researchers, research institutions, OSH funding agencies and all interested parties.
- To increase awareness of the importance of research into new and emerging risks as a precondition for effective prevention measures and sound policy decisions.
- To achieve these goals, the NEW OSH ERA consortium initiates the Forum on new and emerging risks which is planned to be an annual event and one of the key activities of NEW OSH ERA.

Members of the Consortium

Coordinator

- Finnish Institute of Occupational Health, FIOH, Finland

Partners

- Finnish Work Environment Fund, TSR, Finland
- Finnish Ministry of Social Affairs and Health, Finland
- Federal Institute for Occupational Safety and Health, BAUA, Germany
- Central Institute for Labour Protection - National Research Institute, CIOP-PIB, Poland
- Project Management Organization at DLR, Project Management Organization for the Federal Ministry of Education and Research, PT-DLR, Germany
- German Social Accident Insurance, DGUV, Germany
- National Research Centre for the Working Environment, NRCWE, Denmark
- Research Unit for the Improvement of Working Conditions DiOVA/DiRACT, General Directorate for the Humanization of Work, Ministry of Labour, FOD WASO, Belgium
- Italian National Institute for Prevention and Safety at Work, ISPESL, Italy
- Swedish Council for Working Life and Social Research, FAS, Sweden
- Hungarian Institute of Occupational Health, OMFI, Hungary
- European Agency for Safety and Health at Work, EU-OSHA, EU
- Hellenic Institute for Occupational Health & Safety, ELINYAE, Greece
- Ministry of Employment and Social Protection, Greece
- Federal Ministry of Labour and Social Affairs, Germany
- Ministry of Health, Italy
- Ministry of Labour and Social Policy, Poland
- French Agency for Environmental and Occupational Health Safety, Afsset, France
- TNO, Netherlands
- Ministry of Social Affairs and Employment, Netherlands
- Instituto Nacional de Seguridad e Higiene en el Trabajo, INSHT, Spain

Affiliated partner

- AFA Insurance, Sweden

Introduction

Objectives of the Forum

The aim of the Forum is

- To provide a platform for exchange of information on new and emerging risks at work
- To make available scientific knowledge to policy makers and other stakeholders
- To function as a link between the research community, the Commission, national governments, policy/decision makers, funding bodies and social partners.

The target audience includes policy and decision makers at national and European level, social partners, programme owners and representatives of OSH research funding organisations, research directors and other OSH stakeholders.

The first Forum was organised on 29-30 October 2009 in Brussels with the title "Towards a sustainable working life".

More information on <http://www.newoshera.eu/en>

Forum Summary

The Forum on new and emerging OSH risks consisted of two working days planned as follows:

Day 1 - October 29th 2009

- opening session
- plenary session
- parallel workshops

Day 2 - October 30th 2009

- reports from the workshops
- round table discussion
- conclusions

Opening Session

The Forum was opened by Mr. Luc Van Hamme, on behalf of the Belgian Federal Public Service for Employment, Labour and Social Dialogue, which hosted the event.

After his words of welcome, Mr. Van Hamme reported on the Belgian national strategy on wellbeing at work (2008-2010) whose objective is to achieve a continuous, sustainable and uniform reduction in the number of accidents at work and of occupational illnesses.

In order to improve regulations and raising awareness among actors in the field who are working to prevent risks within enterprises, he stressed the importance of scientific research. He gave some examples of research projects currently underway in Belgium aiming to: reinforce prevention of accidents at work; carry out a national survey into the state of health and safety; assess the phenomenon of burnout at work in Belgium as a first stage (to be followed by the development of prevention tools); evaluate the regulations and the way they are applied in the world of work; raise awareness among general practitioners about the issue of professional illnesses; address new risks and monitor the research undertaken by Universities into new risks associated with nanotechnology.

Mr. Van Hamme concluded saying that it is important that this kind of research projects are also done on a European level and that there is much to be gained from exchanges between scientific communities in order to help improving wellbeing at work.

Professor Kai Savolainen, coordinator of the NEW OSH ERA project, reported on the Community strategy 2007-2012 on health and safety at work.

The Strategy suggests that “scientific research provides arguments and evidence upon which policy decisions must be based” and also emphasizes the need of more coordination between national research programs. Professor Savolainen stressed how the NEW OSH ERA has contributed to the implementation of the Community strategy.

After describing the vision and mission of the new Osh Era, its objectives and strategies and the joint activities, he stressed the importance of using OSH networking to promote OSH in the EU in the future. In conclusion, he underlined how an organized European OSH network would lead to joint effects on policies at community level, namely creating durable structures, like ERAs, setting Osh among research priorities and workers’ health as a policy priority.

On behalf of Dr. Jukka Takala, Director of the European Agency for Safety and Health at Work, Mrs. Katalin Sas - project manager - reported on the Challenges for OSH Research in the EU and the Role of the European Agency for Safety and Health at Work in NEW OSH ERA.

After reasserting that support for New OSH ERA is one of the specific European Risk Observatory tasks in the Agency’s 2009-13 Strategy, Mrs. Sas indicated the challenges for the OSH community to be the following:

- OSH research lacks political visibility and support (it doesn’t always speak with one voice, and it doesn’t always make alliances with related disciplines)
- OSH research is fragmented: geographically and by topic
- OSH research does not benefit from (or practice) multidisciplinary research as much as it could (within OSH disciplines and across to other disciplines).

As a response to the above challenges, Mrs. Sas indicated that the community needs to show that:

- OSH research is relevant to societal challenges
- it makes efficient use of resources (defragmenting, pooling resources)
- it has clear priorities (consensus on OSH research priorities).

On its side, the Agency commits on the following:

- Continue working on the mandate given by the Community Strategy 2007-13 (“fostering

research coordination”)

- Use Agency’s tools to foster networking
- Use Agency’s network activities to encourage dialogue between the OSH research community and its stakeholders
- All of this always working with others: PEROSH, national institutes, international partners (e.g. NIOSH), etc.

Last presentation of the opening session was delivered by Jorma Karppinen, Director of Eurofound, who reported on “The impact of recession on quality of life, quality of work and employment in Europe”. The presentation highlighted that the impact of the global crisis concerns quality of life, employment level and quality of work and employment while the response and measures undertaken by policy makers at EU and national level as well as in companies seems to focus mainly on employment levels only. As a conclusion, Mr. Karppinen stressed that challenges for policy makers are numerous and that a narrow focus on employment only will not be sufficient.



Plenary Session

The Plenary Session of the Forum included three keynotes summarized here below.

The first keynote, titled “Safety and Health at Work and Sustainable Development: New Challenges and Opportunities” was delivered by Professor Nicholas A. Ashford, Professor of Technology and Policy, Massachusetts Institute of Technology.

His speech highlighted that as the environment has become more important in economic policy, European, as well as American, industrial economies have also begun to pay attention to the employment as a major concern, reflecting changes brought about by the global economic crisis, emerging technologies, new environmental priorities, and globalisation. However, policies have been largely reactive, rather than proactive towards new job creation and occupational health and safety.

The recent downturn of the extraordinary long economic boom has revealed fundamental structural employment problems in the industrialised world. It is likely that employment considerations will be the central issue in the coming decade for countries in the expanding European Union, and will influence the nature and direction of (re)industrialisation and the growth of the service economy.

It is therefore timely to explore options and opportunities for co-optimizing economic development (competitiveness), environmental quality, and labour/employment concerns, including implications for safety and health at work.

The second keynote was delivered by Professor Frank Pot - Institute of Management Research at Radboud University, the Netherlands - whose presentation was titled “The coherence of occupational safety and health (OSH) and other policy fields”.

Focus of the speech was the question on how do we get out of the 'OSH ghetto'?

The answers could be: 1) by making clear how other policies can benefit from OSH and 2) by collaborating with experts in other fields (organization, business, technology, health care etc). In this presentation he addressed how public health care, employment, social security and economic policy can benefit from OSH.

The line of reasoning goes beyond saving costs by decreasing absenteeism and occupational diseases. Moreover OSH can contribute to a healthier society and a more competitive economy. To achieve this we have to surmount our reservations to link health and productivity. Some countries already have national programs on workplace development for simultaneous improvement of quality of working life and organizational performance.

The third and last keynote was addressed by Professor Jorma Rantanen, MD, PhD who reported on “Research - Policy interaction: From evidence to impact”.

Professor Rantanen highlighted that Europe is absolutely the number one producer of OSH research in the world but, in spite of such an impressive amount of research data, working conditions improve slowly and the lag between research findings and practical implementation is long. Fortunately this gap is constricting in the present Europe, thanks to several policy actions by the EU and the National Governments.

The relationship between research and policy is two-directional:

a) Policy needs research evidence; b) Research needs policy for making an impact

Very seldom a single research finding leads to policy changes.

Policy makers need a comprehensive analysis of well-evaluated research data for making policy decisions.

A similar analysis is also needed for applying research into practice. It is the role of research to provide such analysis by collecting research data from all over the world on the issue in concern.

There are important questions in relationship between policy and research: It is important that the research community understands the importance of policy context and value basis of political aspirations: "Reality is not always a fact".

Equally important is the understanding by policy-makers of the need for knowledge base for policy and respect the critical and independent mission of research, as well as the ethical dimension in research. Continuous and regular interaction between researchers and policy-makers for learning the language which is understood by both sides is a key issue.



Parallel workshops

Three parallel workshops were held in the afternoon of day one:

Workshop 1 - Title: “Psychosocial risks at work”

Chair: Dr. Maria Albin, Department of Occupational and Environmental Medicine, Lund University Hospital, Sweden

1. Exhaustion, depression and work - Is prevention possible?
Prof. Christer Sandahl, Karolinska Institutet
2. Enterprise Restructuring, Health Effects and Health Promotion: Background and Recommendations of HIREES
Dr. Karina Nielsen
3. Psychosocial load in Belgium: dynamics between legislation, research and practice
Véronique Crutzen, Valérie Poucet
4. The impact of recession on quality of life, quality of work and employment in Europe
Jorma Karppinen, Eurofound

Workshop 2 - Title “Human systems integration and OSH”

Chair: Prof. Christer Hogstedt

1. Ambient intelligence - Work assistance systems as a field of action for OSH
Dr Armin Windel, BAuA
2. Prevention through human-centered design - Information work and OSH
Dr Martin Braun, Fraunhofer Institute for Industrial Engineering (IAO)
3. A Model-Based Human System Integration Approach to Identification of New and Emerging Risks in Industry of the 21st Century
Prof. Waldemar Karwowski, University of Central Florida

Workshop 3 - Title “Nanotechnology - opportunities and risks”

Chair Prof. Kai Savolainen - Finnish Institute of Occupational Health

1. Nanomaterials and OSH
Emmanuelle Brun, EU-OSHA
2. Current approaches and good practices by producers of nanomaterials
Dr. Michael Mertler, BASF
3. Regulatory aspects of nanomaterials
Mr. Kees Brekelmans, DG-ENTR

Reports of the Workshops

Day two of the Forum was dedicated to the reports from the workshops, a round table discussion and the final conclusions. Here follows a summary of the three sessions.

Workshop 1 - Psychosocial risks at work

Discussion

- Psychosocial issues have a great impact on wellbeing at work
- Mental illness accounts for a major part of long-term sick leave
- Prevention is possible - stress management, leadership etc
- Restructuring becomes a recurrent and continuous process
- Health in restructuring has many aspects
- There are means to anticipate the adverse effects - leadership, communication, etc.
- Dynamics between policy and research is important
- Cooperation between different actors is crucial for the balance between different measures
- Recession has an adverse impact on employment rates and on quality of work and life, young men are hit the most
- Narrow focus on employment only is not sufficient

Research needs

- Research on leadership and health in different cultural settings across Europe
- More research on health in restructuring and on policy implementation
- Most of the tools focus on secondary and tertiary prevention; we need to develop tools for primary prevention
- Harmonising the data so that it is comparable
- Flexicurity

Workshop 2 - Human systems integration and OSH

Discussion

- How many people are affected? Very wide range, whole population is affected. Ambient intelligence might only involve small numbers of people at the present time but how many people tomorrow? And, what could we learn from studying its implications?
- Focus on reaction of individuals - can we measure physiological reactions (i.e. skin resistance)?
- Bring OSH into design to try and eliminate inherent risks - instead of just monitoring.
- Positive approach needed - negative connotation of OSH ("don'ts") - psychology as an example.
- Outcome measurement - already happening (neuro-marketing).

Conclusions

- Positive OSH thinking into design of human system integration/AMI
- OSH not only important by itself but also for the economic situation of enterprises
- For sustainability, try and better understand how the (very complex) systems work:
 - Experts outside OSH - go beyond our frontiers
 - Try and reinvent OSH
 - 'Did you know?' (YouTube) showed how fast the world around us was changing

Workshop 3 - Nanotechnology - opportunities and risks

Discussion

- Toxicological testing:
 - Reliability of existing test for nanomaterials (NMs)?
 - SCENIHR: in principle appropriate
 - Over 50,000 types of carbon nanotubes (CNTs), not possible to solve the nano issue with the current approach: Need to develop a specific approach for NMs Measurement:
 - Focus should be on characterisation of NMs - basis for further research on assessment of

health effects, OSH guidance, etc.

- Other industry initiatives to develop such equipment?
- Limitations of current measuring equipment: heavy, not able to measure several parameters
- Need for information on how many workers are exposed
 - NANOSH: amount of data on workers' exposure will be doubled - Exposure data sets for 18 exposure scenarios
 - NanoDevice: development of a measuring device and exposure assessment French government will set up a notification system
 - OECD: voluntary database for NMs and workers' exposure
 - Efficiency of risk management control measures?
 - What happens down the user chain of NMs?
 - EU Commission: life-cycle analysis is covered CEN mandate covering in particular occupational handling and exposure

Conclusions

- Still many uncertainties and need for more research but a huge number of initiatives are going on to fill the gaps:
 - Investment into OSH aspects of NMs: EU is leading (ca. 50 million Euros) followed by USA
 - Important steps for regulators in the next 2-3 years
- It is neither black nor white:
 - It is neither like we know nothing (e.g. OECD's list of 14 reference NMs, guidance, etc.) nor should we assume from a scientific point of view that all NMs are dangerous - it is up to the producer to demonstrate that the NM is safe ('no data, no market')
 - Need a differentiated approach
 - We don't have all the data but risk assessment is possible
 - Good Practice cases presented have demonstrated it

Round table discussion

The round table discussion was moderated by Peter Rimmer with the following participants: Maria Albin, Department of Occupational and Environmental Medicine, Lund University Hospital, Sweden, Paulien Bongers, TNO, Netherlands, Christa Sedlatschek, BAuA, Berlin, Germany, Laurent Vogel, ETUI-REHS.

Starting point of the round table was the question if OSH is relevant for a sustainable development and how it is possible to achieve a sustainable working life. The answer is that of course good working conditions are an essential point, the work-life balance has to be considered as a priority. Considering that ageing population will lead to the need of more people working or people working for longer, planning a new kind of society and infrastructures becomes essential. If employers will not able to offer good working conditions, they would not get the workers they need.

Another point of discussion was if achieving a sustainable working life is a realistic goal. Under this point of view, the present “economic crisis” has to be considered a threat to OSH as it can be used as an excuse to reduce OSH effectiveness (i.e. eliminating risk assessment in small companies). It is therefore very important showing to all European Countries the consequences if OSH is not applied, stressing the added values and the advantages for the Companies if the apply OSH.

Regarding the need of making OSH research more visible to other policy areas it was stressed how important it is to gather facts and figures to prove the impact of bad working conditions. The cost of sickness absence is probably the best example in this sense.

Involving students in educational health programs should also become a European goal. As health is not perceived as an appealing subject, it needs to be rebranded and repositioned with a new kind of language adapted to different target groups.

A final question of the round table was related on how the gap between knowledge and its application can be reduced and how can research be better communicated to various audiences. The discussion stressed how a) working more closely with the preventive services is a key issue to reduce the gap, as the enterprises do not always see the relevance of an OSH study; b) In order to better communicate researches to their respective audiences, it is important to use new communication tools and translate the results into the language of specific target group so that they feel it as relevant for their work.



Conclusions

As a matter of fact, NEW OSH ERA is succeeding in promoting collaboration and coordination among adhering Governments. Sharing knowledge and information to improve wellbeing at work has become a reality. Still, the global economic crisis is having an impact on Osh and most indicators of quality at work have gone down, as for example longer hours and higher intensity of work as well as less control and increased stress. What makes this situation even worst is the risk of other long-term implications that the mentioned crisis can create on quality of life at work. The European Agency has having an important role in creating a strategy where collaborative working and shared objectives to improve wellbeing should become part of every Country's policy agenda. The three keynote presentations emphasised the importance of work under a social point of view, stressing how unemployment and inactivity bring negative influences on both the individual and on society at large.

Regarding the goal of reaching environmental sustainability, the key factor has been recognised to be the design and implementation of environmentally sound products, processes and services, rather than addressing the environmental consequences and concerns. The same logic could be applied to OSH: consideration of safety and health implications also require deliberate and intelligent actions before embarking on efforts towards sustainable development, rather than taking remedial action when things go wrong because bad practices are followed, and remedial action become necessary.

This should not only be applied to 'traditional risks' such as chemicals, noise, vibration and machinery but also to design and work organisation, such as 'clerical factories', 'Open Plan' offices and the regimentation of workforces, which are reappearing and are not particularly good for mental health and wellbeing at work. In order to reach the above described goal it is important to involve not only the OSH community but other organisations and agents that the OSH community should work with more closely.

There needs to be more sharing of knowledge and information, and the Forum could take a lead in actively engaging with some other institutional allies, widen the base of knowledge and understanding, and strengthen OSH so that it is not perceived as an isolated voice.

Moreover, once a convergence between the results of research and policy is achieved, next goal should be making sure that enterprises in their own right, particularly SMEs, are interested in research or research findings. In fact, they might be interested in the consequences of an improved wellbeing at work but not into the detail or the single process. The challenge for the OSH community is to make the application of research findings interesting and relevant to enterprises.

The relationship between research and policy was two-directional and symbiotic. Policy needed research evidence and policy-makers showed a growing interest in search of research evidence to support policy objectives.

Very seldom did a single research finding lead to a policy change. It was usually a combination of factors, often working independently and at different speeds, so there was a need to find the synergy to bring them together in a coherent way.

OSH had negative connotations. It was about preventing rather than enabling; about what you should not do rather than what you could do.

We needed to move into the 21st century, think more about office environments, SMEs, flexible working and working at home; these were very different environments to those on which the

majority of OSH regulations were designed with multinationals, large companies and traditional industries in mind.

So, there was a real challenge for OSH - in Frank Pot's words, "How do we get out of the OSH ghetto?" - very simply by engaging and working more closely with partners and colleagues in similar fields such as public health and enterprise, and by becoming part of the community by joining the mainstream of policy-making and public administration rather than remaining on the fringes.

It was suggested to extend the invitation to NEW OSH ERA beyond the traditional OSH community and beyond the OSH research community by engaging with others from neighbouring disciplines.

Annex I

Agenda of the Forum

Programme - October 29, Day 1

09.30 Welcome

10.00 Opening session

- Opening speech
Mrs. Joëlle Milquet - Minister of Employment and Equal Opportunities, Belgium
- About NEW OSH ERA
Prof. Harri Vainio - FIOH
Prof. Kai Savolainen - FIOH
Jukka Takala - EU-OSHA
Jorma Karppinen - Eurofound

11.00 Plenary session - Key note I

- Safety and health at work and sustainable development
Prof. Nicholas Ashford - MIT

11.30 Coffee break

12.00 Key note II

- Links between occupational safety and health (OSH) and other policy fields
Prof. Frank Pot

12.30 Key note III

- Research-Policy Interaction: from Evidence to Impact
Prof. Jorma Rantanen

13.00 Lunch

14.00 Parallel workshops (15.30-16 00 Coffee break)

Workshop 1 - Title: “Psychosocial risks at work”

Chair: Dr. Maria Albin, Department of Occupational and Environmental Medicine, Lund University Hospital, Sweden

1. Exhaustion, depression and work - Is prevention possible?
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2. Current approaches and good practices by producers of nanomaterials
Dr. Michael Mertler, BASF
3. Regulatory aspects of nanomaterials
Mr. Kees Brekelmans, DG-ENTR

Programme - October 30, Day 2

- 08.30 Welcome
- 09.00 Reports from the workshops
- 10.30 Coffee break
- 11.00 Round table discussion
- 12.30 Conclusions
- 13.30 End

Biographies of the Speakers

Nicholas Ashford is Professor of Technology and Policy at the Massachusetts Institute of Technology, where he teaches courses in Environmental Law, Policy, and Economics; Law, Technology, and Public Policy; and Sustainability, Trade and Environment. Dr. Ashford holds both a Ph.D. in Chemistry and a Law Degree from the University of Chicago, where he also received graduate education in Economics. Dr. Ashford also holds an adjunct faculty position at the Harvard School of Public Health and teaches an intensive course in Sustainable Development, and an intensive course in European and International Environmental Law, at Cambridge University, UK during the academic year. These intensive courses are also offered at the Cyprus University of Technology.

With Charles Caldart, Dr. Ashford is the co-author of new textbook/reader on Environmental Law, Policy and Economics (2008, MIT Press). He also authored a major policy work for the Ford Foundation, *Crisis in the Workplace: Occupational Disease and Injury*, (1976, MIT Press). He co-authored four additional books: *Public Participation in Contaminated Communities*, (2001, <http://web.mit.edu/ctpid/www/tl/>); *Chemical Exposures: Low Levels and High Stakes* (second edition 1998, John Wiley Press); *Technology, Law and the Working Environment* (second edition 1996, Island Press) and *Monitoring the Worker for Exposure and Disease* (1990, John Hopkins University Press). In addition, a new textbook/reader on Technology, Globalization, and Sustainability is near completion. He has published several hundred articles in peer-reviewed journals and law reviews.

Dr. Ashford was a public member and chairman of the National Advisory Committee on Occupational Safety & Health, served on the EPA Science Advisory Board, and was chairman of the Committee on Technology Innovation & Economics of the EPA National Advisory Council for Environmental Policy and Technology. Dr. Ashford is a Fellow of the American Association for the Advancement of Science and former chair of its Section on Societal Impacts of Science and Engineering. He served as an advisor to the United Nations Environment Programme and is also a member of the editorial board of the *Journal of Cleaner Production* and the *Journal of Environmental Technology and Management*. He currently serves as co-chair of the US-Greece Council for the Initiative on Technology Cooperation with the Balkans.

Martin Braun lives in Leinfelden-Echterdingen near Stuttgart, Germany. Since 1999 he has worked as project manager at the Fraunhofer-Institute for Industrial Engineering (IAO). The focus of his research work is human-centred work design, mental work and health management.

His university studies covered mechanical engineering, industrial engineering and human factors - and he has an engineering diploma. He worked as a teaching assistant at the University of Stuttgart, Institute for Human Factors, and continued his further education as an OSH engineer, doctoral thesis.

He has lectureships at the University of Stuttgart, and the Hamburger Fernhochschule, and has written more than 100 publications and presentations.

Cornelis Brekelmans works as an Adviser in DG Enterprise and Industry at the European Commission. His main responsibilities concern regulatory aspects of nanotechnologies and the promotion of alternative approaches to animal testing.

Previously, he occupied several posts in the DG Enterprise and Industry, dealing in particular with harmonisation of technical regulation, commercial policy, competitiveness of industry, European standardisation, protection of the environment, and free movement of goods. Before joining the European Commission, he worked as a legal adviser in a major international law firm in Brussels. He studied law at the University of Utrecht and the Centre Européen Universitaire

of Nancy, France.

Emmanuelle Brun is Project manager (European Risk Observatory) at the European Agency for Safety and Health at Work (EU-OSHA). After obtaining a MSc. in chemistry from the “Ecole Nationale Supérieure de Chimie, Université de Montpellier” (France) in 2000, Emmanuelle Brun started her career in Germany at the Institute for Occupational Safety and Health of the German Social Accident Insurance (BGIA). In 2004, she was Seconded National Expert from the BGIA at the European Agency for Safety and Health at Work (EU-OSHA) in Bilbao, Spain, where she accepted a post in 2006 in the European Risk Observatory unit. At the Agency, she has been managing a range of projects, among others aimed at identifying and tackling emerging occupational risks. She was responsible for the four Agency’s expert forecasts on emerging physical, psychosocial, biological and chemical risks. She is also responsible for the Agency’s large-scale foresight study that will start in 2010 and look at emerging risks that may arise in green jobs.

Jorma Karppinen is Director of the European Foundation for the Improvement of Living and Working Conditions (Eurofound). He was born in Finland, has an academic background in engineering and technical physics, and a doctorate in technology. His career spans positions in scientific research, marketing and development, and senior management with Nokia Electronics, Afora Ltd and Fortum Engineering Ltd. Until most recently, he was Director of Business Development at Metso Automation Ltd in Helsinki, Finland. Through his extensive experience in business development and management over the past 20 years, Jorma Karppinen has developed a comprehensive understanding of the industrial changes facing Europe today, and has first-hand experience of implementing industrial restructuring projects, taking part in labour union negotiations, and participating in European works council meetings.

Waldemar Karwowski is Professor and Chairman, Department of Industrial Engineering and Management Systems, and Executive Director of the Institute for Advanced Systems Engineering, University of Central Florida, Orlando, Florida, USA. He is the author or co-author of over 350 scientific publications. He currently serves on the Committee on Human-System Integration, National Research Council, the National Academies, USA, and as Editor of the Human Factors and Ergonomics in Manufacturing journal, and Editor-in-Chief of Theoretical Issues in Ergonomics Science journal. He is Past President of the International Ergonomics Associations, and of the Human Factors and Ergonomics Society, USA.

Thomas Kieselbach is Professor of Work and Health Psychology, head of the Institute for Psychology of Work, Unemployment, and Health (IPG) at the University of Bremen, Germany. 1973 Dipl. Psych. University of Muenster; 1997 Dr. phil. University of Bremen; 1989 Habilitation for Applied Psychology; 1977-93 researcher at the University of Bremen in the Scientific Unit Work, Unemployment and Personality Development; 1993-98 professor for health psychology at the University of Hannover. Temporary adviser of WHO EURO in the programme Social Equity and Health; published 33 books and more than 250 journal articles and contributions to edited books on work and health psychology, unemployment, evaluation of interventions, enterprise restructuring; Coordinator and partner of several EU-funded research (DG Research) and policy projects (DG Employment, ESF, DG SANCO) on unemployment, social exclusion and restructuring; Editor of the book series Psychology of Social Inequality (VS-Verlag fuer Sozialwissenschaften). 2000-2009 chairperson of Scientific Committee Unemployment, Job Insecurity and Health of the International Commission on Occupational Health (ICOH), since 2009 member of the board of ICOH.

Michael Mertler is the Research Manager at BASF SE, Ludwigshafen, Germany. He heads the Dust Removal & Aerosol Technology Team, which is responsible for research and development in emission reduction, nanoparticle synthesis via aerosol routes, characterization of nanoparticles, and the health and safety issues of nanomaterials. He studied chemical engineering at the University of Karlsruhe from 1998 to 2003 and was awarded and M.Sc. in Chemical Engineering.

He went on to complete a PhD thesis in “Production and Characterization of highly porous filter membranes” at the Karlsruhe Institute of Technology and the University of Stuttgart, and joined BASF in January 2007 as a Research Engineer Team Dust Removal & Aerosol Technology.

Joëlle Milquet is Deputy Prime Minister in Belgium and Minister of Employment and Equal Opportunities. She was born in Charleroi, gained a law degree from the Catholic University of Louvain and, after experience at the Court of Justice, she became a senator in 1995 and, after the elections of 2006, she became deputy mayor of the city of Brussels. She joined the coalition government in March 2008 as leader of the Christian Democratic party and was appointed Minister of Employment and Equal Opportunities.

Karina Nielsen is a senior researcher at the National Research Centre for the Working Environment, Copenhagen, Denmark. Her main research interests are new ways of working and organisational-level interventions. She has published in journals such as *Work & Stress* and *Journal of Organisational Behaviour* on the facilitation of change processes.

Frank Pot (1945, sociologist) is professor of social innovation at the Institute of Management Research, Centre for Innovation Studies, Radboud University Nijmegen, the Netherlands and member of the Advisory Panel of NEW OSH ERA. At the Netherlands Organization of Applied Scientific Research (TNO) he was director of research at TNO Quality of Life (2005 - 2007) and director of TNO Work and Employment (1996 - 2005). In this capacity he was the first chairperson of the Partnership for European Research on Occupational Safety and Health (PEROSH) and member of the Planning Committee of the WHO Collaborating Centres Occupational Health. He was also board member of the European Association of National Productivity Centres (EANPC) and board member and co-founder of the Netherlands Centre for Social Innovation (NCSI). From 1991 - 1999 he was part-time professor of Work and Technology at the University of Leiden.

Valérie Poucet is a jurist and **Véronique Crutzen** is a psychologist at the Directorate-General for the Humanisation of Work of the Belgian Federal Public Service Employment, Labour and Social Dialogue. The mission of this Directorate-General is to promote high-quality work, to prepare legislation relating to the wellbeing of workers, to support research in this area, to raise the awareness of the actors in the working environment and to promote consultation between social partners.

Jorma Rantanen, MD, PhD is professor and specialist in occupational health. Until 2003 he served for 30 years as the Director General of the Finnish Institute of Occupational Health, FIOH. He has experience in practical occupational health services, and occupational medicine, in toxicology research and in the development of regulations for OHS in Finland and internationally. He has published about 500 research and professional articles on several topics of occupational health, including assessment of radiation, toxic and occupational safety and health risks of workers in various sectors and risks of military personnel particularly in the UN peace-keeping forces. He has authored and co-authored books on occupational health practices, cancer risk assessment, global risk assessment, prevention practices, and work in the information society.

Dr. Rantanen has worked as an expert for WHO, ILO and EU in drafting international strategies, programmes and regulations. He was one of the key contributors to the ILO instruments on Occupational Health Services, the WHO Global Strategy on Occupational Health for All and WHO Global Action Plan on Workers' Health. Most recently Dr. Rantanen has produced the WHO/ILO/ICOH approach for Basic Occupational Health Services, BOHS, written the guidelines and supported the practical implementation of BOHS in all continents.

He has over 30 years' experience on programmes for occupational health in developing and transitory countries in Africa, Asia, Central and South America, China and Eastern Europe, including the Russian Federation, Baltic and Balkan areas.

After his retirement from the FIOH, Dr. Rantanen has carried out evaluations of universities and research institutions. He has planned new governance models for Finnish Universities and

Polytechnics. he serves currently as the Chair of the Senate of University of Jyväskylä for the tenure 2009-2013. He has evaluated Government research institutes and Government funded research programmes for Finland, Norway, UK, USA and Sweden.

He has served as the Board member of ICOH and was elected President of ICOH for the tenure 2003-2006 and 2006-2009, serving currently as a Board Member in the capacity of the past President. Professor Rantanen has been awarded with several international and national honours by Governments and Scientific Communities.

Christer Sandahl is a professor in Social and Behavioural Sciences at the Department of Learning, Informatics, Management and Ethics at the Karolinska Institutet, Stockholm, Sweden; one of Europe's largest medical universities, and Sweden's largest centre for medical training and research.

Katalin Sas is working as a project manager in the Working Environment Information Unit of the European Agency for Safety and Health at Work, Bilbao, Spain responsible with others for the next European Campaign on Safe Maintenance. Between 2002 and 2009 she was working as a researcher and project manager in different projects at the Finnish Institute of Occupational Health. She was involved in drafting the proposal for the NEW OSH ERA project, and then working as project manager at FIOH and as a seconded national expert at the Agency until 31 August 2009 when she became a member of the Agency team.

Kai Savolainen is the manager of the New Technologies and Risks team of the Finnish Institute of Occupational Health, a post he has held since January 2006. He joined FIOH in 1998 when he was appointed Director of the Department of Industrial Hygiene and Toxicology. Before that he served as Professor of Toxicology and Chairman of the Department of Pharmacology of the University of Kuopio. He has coordinated a number of EU projects funded by the research framework programmes, including EU-funded research on the 'Inflammatory and genotoxic effects of nanoparticles'. His current research interests include health effects of fungal spores, wood dust and nanoparticles. He has been invited to be actively involved as a senior expert in a number of EU activities including scientific panels of European Food Safety Authority.

Peter Wiedemann has been a lecturer at the University of Innsbruck since 1988. He gained a Diploma in Psychology from Humboldt University, Berlin in 1973 and became a Doctor of Philosophy at the Technical University, Berlin in 1984. He was appointed Research Professor at the UMIT University of Hall, Austria in 2009. He holds an appointment as Research Group, INB8 Vice-Director at the Research Centre Jülich and was previously Head of MUT from 1992 to 2008, and held posts at the Technical University Berlin as an Assistant Professor from 1984 to 1988, and Lecturer and Assistant Researcher from 1980 to 1984.

He chairs the Working Group Risk Management and is a member of the Steering Committee's des COST Action Programs BM 0704 of the EU, and is a member of the Scientific Advisory Group of the National Dutch EMF Research Program, 2007-2008.

He is an elected Member of the German Radiation Protection Commission, Working Group "Non-ionizing radiation" since 2004, and co-founder of the Competence Centre for Alpine Risk Management in Innsbruck, Tyrol since 2003.

He was speaker of the Scientific Advisory Board of the German Action Program on Environment and Health, 2002- 2004, and President of the Society for Risk Analysis Europe 2001-2002, and co-founder of the working group "Bioethics & Science Communication " at the Max Delbrück Centre for Molecular Professor.

Recent publications

- P. Wiedemann (2010): Vorsorgeprinzip und Risikoängste. Wiesbaden Verlag für Sozialwissenschaften
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Dr. Armin Windel is Head of the Scientific Management Division "Products and Work Systems" at the Federal Institute for Occupational Safety and Health (BAuA) Dortmund, Germany.

He was previously Head of the Ergonomics Unit at BAuA from 1999 - 2008 covering topics including Work with Visual Display Units, Man-Machine-Interaction, Redesign of Workplaces and Work Systems.

From 1991 to 1999 he was Assistant Professor at the Department of Industrial and Organisational Psychology at Ruhr-University of Bochum specialising in Research / Courses in Job Design and Industrial Engineering. He was conferred a Doctorate in December 1995.

From 1989 to 1991 he was a member of the Research Staff of the Ergonomics Division at the Institut für Arbeitsphysiologie at the University of Dortmund covering Job Analysis and Office Redesign.

He studied Industrial and Organisational Psychology from 1986 to 1991, and gained a Diploma in Psychology.

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