



NEWSLETTER



International Commission on
Occupational Health – ICOH

Commission Internationale de
la Santé au Travail – CIST

Volume 2, Number 3

December 2004

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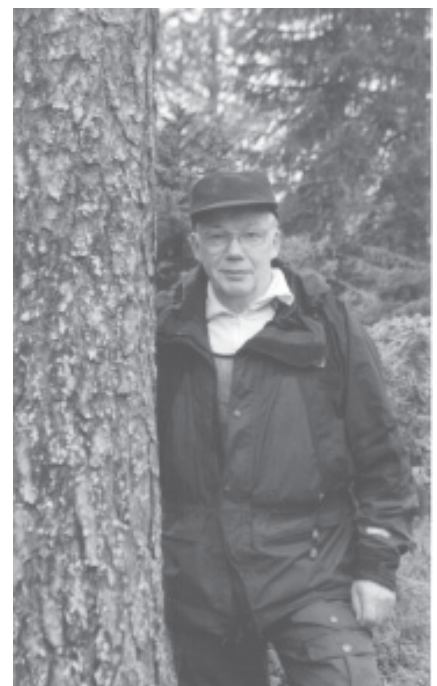
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Message from the President

Dear ICOH Colleagues,

The year 2004 has been exceptional in many ways. Both the scientific evidence and wide media coverage have addressed the growing imbalance in the ecosystem, the climate, and even in the geochemical and geophysical structures. The greatest natural catastrophe ever experienced in the modern age started in South-East Asia just on the second Christmas Day. So far, twelve countries have reported loss of tens of thousands of human lives and severe damage to property. There is a major occupational health component in such a catastrophe both during the event and in its aftermath. Some environmental experts see certain complex relationships between the pollution, erosion of coastal structures, global warming and rising sea levels, which, if not a direct cause, may be assumed to be at least as an aggravating factor for the damage caused by the *tsunamis*. Not only people are suffering. The eco-imbalance is further signalled by a rapid extinction of many animal and plant species which has taken place with growing momentum during the entire 20th century and seems to continue at even higher pace in the 21st century.

But it is not only a question of ecological or geophysical imbalance. Much social imbalance is also reported between the industrialized and the developing world, between urban and rural populations, between the well-educated and illiterates, between the socially



and economically privileged and those underserved. As Secretary General of the UN, Mr Kofi Annan said in his Nobel Lecture: “*Today’s real borders are not between nations, but between powerful and powerless, free and fettered, privileged and humiliated*”. Unfortunately the geophysical, ecological and the social crises hit hardest those three billion who have least protection and resources (less than 2 USD/day) and who are most vulnerable.

Some of the borders are associated with the so-called “new work life”. Traditionally the workers in the developing countries do most of the high-risk jobs in the world for the lowest pays. The





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NEWSLETTER

Volume 2, Number 3
August 2004

ICOH Newsletter

Published by the
International Commission on
Occupational Health

Editorial Board

Suvi Lehtinen
suvi.lehtinen@ttl.fi

Tar-Ching Aw
t.c.aw@kent.ac.uk

Sergio Iavicoli, seriav@iol.it

René Mendes
rene.mendes@uol.com.br

Louis Patry
LPatry@santepub-mtl.qc.ca

Ken Takahashi
ktaka@med.uoeh-u.ac.jp

Editor

Suvi Lehtinen

Layout

Tuula Solasaari-Pekki

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www.ich.org.sg/newsletter

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ISSN 1459-6792 (Printed publication)
ISSN 1795-0260 (On-line publication)

globalization movement has not substantially improved the health and safety situation of the workers in developing countries, but it has expanded the gulf between the two extremes, the poorest of the poor and the richest of the rich. Many social scientists see this as a potential risk of security to the whole world.

But we have recognised also totally new diversities in the modern work life. A major part of the workforce in the old and newly industrialized countries report growing psychological pressure, growing productivity demands and demands for flexibility, and they are simultaneously exposed to job insecurity, lowered salaries, unconventional and unreasonable working hours, and the risk of lay-off and unemployment as a consequence of downsizing and outsourcing. The job demands and possibilities for controlling the work by one's own actions and the effort and reward at work are often in severe imbalance for growing numbers of working people, regardless of one's position in the hierarchy or level of competence of the individual. Even we experts may tend to be biased by looking at the best examples and model solutions without seeing the complete picture. The well-established finding from most of the recent wide-scale surveys on conditions of work is that occupational health is needed more than ever and not least in the modern work life.

There are early signals showing that the one-sided drift of the unregulated market economy will not be sustainable in the long run. As one of my economist friends used to say "*If the neoliberalistic market economy works exclusively and faithfully according to the market rules, it does not work*". With that he means that additional dimensions from social, environmental and cultural spheres are needed even for the sake of the economy.

Occupational health and safety efforts are ways to reconcile between the one-sided economic dimensions and the broader human-oriented dimensions in work life. OH&S have the strength of being besides science- and theory-based, also strong in the everyday practices. Properly implemented OH&S can, by preventing hazards at work and by improving the health, safety and work ability of people, provide a unique opportunity not only to improve health and well-being but also to strengthen social

and human dimension, and thereby improve productivity and economic sustainability. Although OH&S have a value and justification on their own, we are surprised to see how many "positive side-effects" we are able to generate. This is an important message for those who are not acting on the basis of broader human values or who "*don't believe before they see*".

Research constitutes the foundation for the influence and impact of OH&S – not just any kind of research, but that of high quality and high relevance. Quality is needed for soundness and truthfulness of the results, and relevance for achieving a practical and social impact. Our activities are always guided by values, whether or not we are aware of it. Soundness is ensured by the values of the scientific community and scientific ethics, the social impact by our social values guiding us to make a positive social effect by eliminating risks and thus equalising the conditions of work. This is a big mission for the whole OH&S community, and not least for ICOH, as some of the opposite trends are beginning to prevail. On the other hand, it is the heart of the whole ICOH philosophy from which we draw our motivation and enthusiasm.

Within a month the ICOH Board, Scientific Committees and other bodies are going to convene for the Mid-Term Meeting in Helsinki to make an inventory of what has been achieved since March 2003 after the Iguassu Congress. Six distinct priorities were set for the present triennium:

1. Structuring ICOH as an organization
2. Making alliances with ILO and WHO to launch Global Actions on Basic Occupational Health Services
3. Increasing the membership and providing more added value to the Members. More young members will be recruited.
4. Carrying out effective internal and external information activities
5. Preparing for centennial events
6. Supporting, facilitating and coordinating the activities of the Scientific Committees.

In all the above points important steps have been taken and several scientific and practical results are already seen. Besides the defined objectives, numerous other results can be recorded. Many of the outputs have been immediately reported to the Membership in the news or articles of this Newsletter.

Much has been done, but even more is needed in the globalising work life. We need to strengthen ICOH structures further and increase the membership, we need to focus our activities, we need to further strengthen our alliances which have been so well developed, and we need to disseminate and advocate more on the importance of OH&S at all levels – global, national and local.

At the time of the Mid-term Meeting it has been a tradition to initiate preparations for the elections for the next triennium (2006–2009). Some of the present Board members have served the full two tenures, and new members need to be elected. Also the mandates of Officers need to be filled or, if you so decide, the eligible ones to be renewed. It is good to start the preparations in time and to avoid last minute choices. I sincerely hope that, if you start running your candidacy for the position of Officer, Board member or Scientific Committee officer, make sure that you are really dedicated to make an input to ICOH and that you have real possibilities to do so. An active and dynamic organization cannot be run by so-called “nominal officers”. In return you can expect to be a part of the largest and hopefully most dynamic global scale expert activity in occupational health.

At the end of the busy and interesting, partly dramatic year 2004, may I thank all the ICOH Officers, Board Members and Scientific Committee Leaderships and Members, as well as the Members of numerous Task Groups and Working Groups and Networks, and also the whole membership of ICOH for the most productive activity in 2004. I wish you a Happy and Successful New Year 2005.

We as ICOH want to take part in the sorrow and grief of the people who lost their beloved ones in the South-East Asia catastrophe and commit our solidarity and support to them all.



Jorma Rantanen
President

The Mid-term Meeting is drawing closer

Information dissemination within ICOH

When planning the strengthening of the ICOH information dissemination a year and a half ago, it was deemed appropriate to revitalize the ICOH Newsletter to keep the members of the association informed about the events and advances within the organization. In addition to the Newsletter, also the website of ICOH has been renewed, and you will find more up-to-date information on these pages, www.icoh.org.sg.

This issue

Intensive member campaigns were carried out in connection with the Small-scale Enterprise Symposium, held on 12–15 November 2004 in Nagoya, Japan, and also in connection with the EAC-ILO-WHO East-African Regional Workshop on Occupational Safety and Health, held on 15–16 December 2004 in Arusha, Tanzania. In both meetings, it was emphasized that the procedure for paying the membership fee, especially for members from the developing countries, needs to be easy and feasible. The Secretariat of ICOH has been working on simplifying the payment procedure of membership fees. The progress with this will be reported in the Mid-term Meeting in January 2005.

We will continue to publish the names of new ICOH members. This may encourage other potential members to join.

We are continuing to publish reviews on topics relevant to occupational health and safety. The purpose is not to publish formal scientific articles, but to call the Members' attention to breakthrough findings or to overviews of issues that are highly topical. Proposals for

the themes of such articles are most welcome. In this issue, you can read the overview by Dr. Andrew Maynard of the US NIOSH on nanotechnology. As technical as it may sound, it has direct implications also to occupational health and safety experts. For more see pages 4–6.

Mid-term Meeting in January 2005 in Helsinki

The meeting materials to the Board Members and the Chairs/Secretaries of the Scientific Committees have been sent out in order to allow preparation for the Mid-Term Meeting, to be held on 27–29 January 2005.

Three of the ICOH Scientific Committees (Occupational Health and Development, Pesticides, and Occupational Health Nursing) will organize, together with the WHO and ILO, a one-day workshop on 24 January 2005 in Helsinki on the topic *Do Occupational Health Services really exist?* The programme of the workshop is available at <http://www.ttl.fi/Internet/partner/ICOH/>.

Suvi Lehtinen
Editor

Nanotechnology – a new occupational health challenge for a new generation?

Andrew D. Maynard

National Institute for Occupational Safety and Health, Cincinnati, Ohio, USA

Second chances don't come around too frequently, especially in the field of occupational health. According to some, the 'next industrial revolution' is upon us in the form of nanotechnology (Hood 2004). The eighteenth/nineteenth century industrial revolution had a profound impact on the health of workers, and led to the development of modern occupational hygiene. As nanotechnology is poised to impact on our lives in many ways over the coming decades, the science of protecting workers' health faces the challenge of proactively minimizing the risks, rather than reactively addressing the impact.

'Nanotechnology' is a broad term adopted in recent years to describe the manipulation of matter at near-atomic length scales to form new materials, structures and devices. The technology isn't confined to a narrow range of disciplines, but is finding application in many diverse areas of research and development. Of course science and engineering have depended on structures and behavior at the atomic level for decades and, in some cases, centuries. However, the new ingredient introduced by nanotechnology is the ability and potential to engineer matter in the region between atomic and microscopic length scales. This ability is opening up incredible opportunities, including efficient energy generation, usage and storage, high performance materials, innovative sensors and targeted medical diagnostics and therapeutics. At its most basic, nanotechnology encompasses the formation of structures between approximately 1 nm – 100 nm that allow unique quantum effects associated with this transition region to be exploited. The other end of the spectrum, which may be on the borderline between possibility and fantasy and certainly won't be realized for many years, is the construction of nanometer-scale machines that are capable of work-

ing directly with atoms, molecules or other nanoscale structures. In between these limits lies a reality that is poised to revolutionize society over the coming decades.

Much of nanotechnology is still at the research and development stage. However the potential of the technology has not been lost on investors. The US Federal Government is currently spending approximately \$1 billion per year on nanotechnology R&D. Comparable amounts are being invested in Europe and Asia, with additional substantial investment coming from industry. The current focus is predominantly on new materials that take advantage of unique electrical, optical and physical properties associated with nanoscale structures. To give just three examples;

- Nanostructured titanium dioxide is transparent to visible light but absorbs ultraviolet light (unlike pigment grade material) making it a useful ingredient in sun creams and lotions. The photoactive nature of titanium dioxide can be utilized within the nanostructured material to provide an effective biocide in the presence of ultraviolet light. Self-cleaning windows, floor tiles, and counter-tops coated with nanostructured titanium dioxide are now commercially available.
- Carbon nanotubes – single tubular molecules of carbon that are a few nanometers in diameter, but may be micrometers in length – exhibit a range of unique properties, including very high thermal and electrical conductivity, semi-conductivity in some configurations, and the highest strength to weight ratio of any known material. Uses being explored for carbon nanotubes include high performance composites, fuel storage and field emission displays.
- Quantum dots – uniform sized semiconductor nanoparticles – enable



particle size-dependent quantum effects to be exhibited as high yield fluorescence. Potential applications include targeted, *in situ* medical imaging.

Many more nanostructured materials are currently being developed, researched and produced for use in a wide range of applications.

Beyond relatively simple nanomaterials come nano-devices – devices constructed at the nanoscale to perform specific tasks. The first generations of nano-devices are already being researched, and take the form of 'smart' nanoparticles – particles that are capable of interacting with their local environment in a predetermined manner. Such nanoparticles are a central component of efforts to develop more effective cancer treatments in the US (NCI 2004). Nanoparticle-based treatments are being developed around smart nanoparticles capable of targeting specific cells, reporting on the state of the cell, and applying therapy at the cellular or sub-cellular level. Through such technologies, the US National Cancer Institute envisions the possibility of changing the very foundations of cancer diagnosis, treatment and prevention, leading to the goal of eliminating suffer-

ing and death from cancer by 2015 (NCI 2004).

The third stage of nanotechnology is predicted to involve more complex devices and nanoscale machines. To many, one of the ultimate goals of nanotechnology is the ability to construct materials, structures and devices on demand, atom by atom or molecule by molecule. Although the two approaches to this – self assembly and the development and use of molecular assemblers – are a long way in the future, research efforts are already moving towards these technologies. These efforts are likely to spawn unique and innovative technologies in the coming decades.

As we look to the future, it is clear that nanotechnology has the potential to impact on every aspect of our lives, much as the industrial revolution led to radical changes in many areas of society. The industrial revolution led to new and increased health risks, which in turn led to the establishment of modern day occupational hygiene. By comparison, it only seems natural to ask whether nanotechnology challenges our understanding of health impact to such a degree that we need to rethink how to protect the workers associated with it, or whether all that we have learnt over the past decades is robust enough to meet the new challenges we face.

In many ways, it is too early for definitive answers. Nanotechnology is a very young technology, and its impact over the coming decades is relatively unpredictable. At the same time, a technology that offers fundamentally new ways of doing things, leading to new materials and devices with unique properties, will intuitively throw up new challenges. There are a number of quantitative indicators that nanostructured materials may present unique health risks: Research over the past decade on the pulmonary toxicity of nanoparticles has shown that for a number of insoluble materials particle surface area and activity are better indicators of biological activity than mass and bulk chemistry (Oberdörster 2000; Tran et al. 2000). Research has also demonstrated the potential for nanoparticles to translocate from the lungs to other organs (Nemmar et al. 2001), and from the nasal region to the brain (Oberdörster et al. 2004). Recent research on single walled carbon nanotubes has shown them to lead to multifocal granulomas in rats (Warheit et al. 2004), and to be cytotox-

ic to immortalized keratinocyte cells (Shvedova et al. 2003). In the latter case, iron nanoparticles associated with the carbon nanotube production were found to be responsible for the observed responses.

These findings in themselves challenge conventional approaches to understanding potential health impact and suggest that the physical size, shape and structure as well as the surface activity of engineered nanomaterials will be important in determining health hazard. In recent months, a number of reports have highlighted the need to focus attention on exposure to airborne nanomaterials, and indicated the many research gaps that need to be filled before we fully understand how to assess and manage the potential health impact of these materials (HSE 2004; Luther 2004; Swiss Re 2004; The Royal Society and The Royal Academy of Engineering 2004). Although a number of research initiatives across the world are now beginning to address research gaps ranging from toxic mechanisms to exposure monitoring and control, there is still a long way to go before we will be in a position to effectively assess and manage the potential risk presented by nanotechnology.

As well as presenting a potential health risk in the workplace, it is conceivable that nanotechnology can also be used to improve working conditions. It is already clear that the technology has the potential to extend medical diagnostics and therapeutics and environmental pollution control/impact beyond current capabilities. As nanotechnology develops, applications will most likely become apparent that will further enable improvements in occupational health. For instance, nanotechnology could lead to less wasteful processes and thus lower occupational exposures, as well as providing ways of protecting people from harmful materials more efficiently.

In the USA, the Federal Government has placed a strong emphasis on the need to address the societal implications of nanotechnology, including health impact. US Federal Research and Development in nanotechnology is overseen by the Nanoscale Science Engineering and Technology (NSET) subcommittee of the National Science and Technology Council Committee on Technology (www.nano.gov). Within NSET, a working group has been formed specifically to address the environmental and health impact of nanotechnology from the Federal perspective. Formed from represent-

atives of key regulatory and research agencies including the National Institute for Occupational Safety and Health, the Environmental Protection Agency, The Occupational Safety and Health Administration, and the Food and Drug Administration, this working group is focused on coordinating environmental and health activities between relevant agencies, and facilitating appropriate activities to ensure adverse impact is minimized. A primary objective of the group is the development of risk analysis tools that enable research, information and regulatory issues to be identified and addressed as we move towards developing responsible and sustainable nanotechnologies. The group is also supporting the development of guidelines for the safe handling of nanomaterials – a task that The National Institute for Occupational Safety and Health (NIOSH) is undertaking.

NIOSH is the US agency charged with ensuring worker safety and health through research, information, education and training. The Institute has had a long history of cross-cutting research into the impact of exposure to nanometer-diameter particles from processes such as welding and combustion. More recently, NIOSH has responded to the need to address exposure to engineered nanomaterials, structures and devices by forming an institute-wide nanotechnology initiative. This involves a coordinated approach to research, partnership and outreach across NIOSH addressing not only the implications of nanotechnology in the workplace, but also the application of the technology to ensure good health. Current research spans studies into the toxicity of carbon nanotubes and other nanomaterials, measurement and characterization of nanomaterials and exposure control. To address immediate occupational safety and health needs within nanotechnology research, production and application communities, the Institute is in the process of developing a series of documents to support the development of good working practice guidelines. The first of these – a brief informational fact sheet – was published in October 2004 (NIOSH 2004). Frequently asked questions and answers on nanotechnology and occupational health will be published on the NIOSH nanotechnology web pages (www.cdc.gov/NIOSH/topics/nanotech) by the end of 2004. These will be followed by a NIOSH Current Intelligence

Bulleting on working with engineered nanomaterials in 2005.

Through these and a number of other initiatives, NIOSH is working with national and international partners towards proactively reducing the potential for nanotechnology to lead to adverse health impacts in the workplace, while seeking ways of applying the technology in beneficial ways. One important initiative bringing various stakeholders together is a series of international symposia on nanotechnology and occupational health. The first of these was held in the UK in October 2004, and sponsored by the UK Health and Safety Executive (HSE) and NIOSH. The meeting highlighted the challenges presented by nanotechnology within a multi-stakeholder and multi-disciplinary forum, and moved towards addressing specific issues associated with potential health impact, exposure measurement, control and regulation, through a series of workshops. Proceedings from the symposium will be made available by the HSE and NIOSH in 2005. A second international symposium is planned for October 2005 (www.cce.umn.edu/nanotechnology). The meeting, to be held in Minneapolis USA, will focus on research and other activities towards understanding and managing the impact of nanotechnology on occupational health.

While we are by no means certain of the nature and magnitude of potential occupational risks associated with nanotechnology, there are a number of indicators that nanomaterials and nanodevices may require a re-think of traditional approaches to protecting the health of workers. Uniquely, we are close enough to the beginnings of nanotechnology and its implementation to proactively address potential impact. As we rise to this challenge within the international occupational hygiene community, it would seem we do indeed have a second chance to ensure healthy working conditions through an industrial revolution.

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Publishing dates for the ICOH Newsletters in 2005

| | | |
|--------|------------------|-------------------------------|
| 1/2005 | 15 April 2005 | materials by 1 March 2005 |
| 2/2005 | 31 August 2005 | materials by 15 July 2005 |
| 3/2005 | 31 December 2005 | materials by 15 November 2005 |

Changes of addresses

In order to get your ICOH Newsletter without delay, please inform about the changes of your mailing addresses to Mr. Carlo Petyx, carlopetyx@libero.it.

Thank you for your cooperation.

Scientific Committee on Toxicology of Metals Biometals

Special issue reporting the proceedings of the International Symposium on Health Effects of Cadmium Exposure and its Prevention in China

On 17–19 November 2003, Professors Taiyi Yin of Fudan University, China, and Gunnar F. Nordberg of Umeå University, Sweden, organized an international cadmium symposium in Shanghai on health effects of cadmium exposure and its prevention in China. The proceedings are now being published and can be viewed on the Internet at <http://www.kluweronline.com/issn/0966-0844/contents>. The background for the meeting is an increasing knowledge about the extent of cadmium pollution and indicators of potential health effects in certain provinces of Southeast China.

Such indicators include reduced bone density and increased urinary levels of indicators of renal tubular damage, as well as increased blood and urinary cadmium levels in cadmium smelter workers and in the general population.

The symposium, which was funded by the European Commission and the Scientific Committee on the Toxicology of Metals of the International Commission on Occupational Health and sponsored by the Chinese Association of Occupational Health, Fudan University, China, and Umeå University, Sweden, gathered about 80 scientists from 10 countries from all over the world, as well as local representatives and scientists from the cadmium polluted regions in China.

The symposium had dual goals: Knowledge transfer from scientist which for decades have investigated the extent of cadmium pollution and relationships between exposure and risk indicators in other countries where industrial cadmium pollution has occurred in some regions, that is mainly Japan, Sweden, Eng-

land, Belgium and the United States, Chinese scientists and officials, as well as informing the international scientific community about the research and preventive measures instituted in the polluted areas in China. Thereby, the main issue of the symposium became risk assessment of occupational, environmental cadmium, dietary and life style cadmium exposure.

The subjects covered by invited speakers demonstrated the extensive development of the research in cadmium related health effects from initial investigations of bone structure changes, urinary biomarkers and cancer risk in heavily exposed cohorts, to the last few years' use of genomics and proteomics both for understanding molecular mechanisms of disease-development and for molecular epidemiology studies. Also, recent cadmium health effects assessments by the IPCS and FAO/WHO JECFA concluding that at urinary excretion below $2.5 \mu\text{g/g}$ creatinine, excess tubular dysfunction is unlikely, and that JECFA maintains a PTWI of $7 \mu\text{g/kg}$ bw, as well as risk management measures in specific countries were reported.

Several recent large-scale epidemiological studies and updates of studies continuing for decades of populations exposed at various cadmium levels, from levels presently believed to result in marginally increased risk of bone disease to levels formerly shown to induce Itai-itai disease were reported. Further, studies evaluating various risk biomarkers for renal dysfunction, experimental and epidemiological studies on effects of cadmium exposure on prostate and testes cancer risk and endocrine function, and mechanistic studies on possible involve-

ment of oxidative stress in the genotoxicity of cadmium, as well as the extensive recent development in the molecular understanding of biological functions and expression regulation of metallothionein and factors affecting the toxicokinetics of cadmium were covered.

The meeting was highly successful, and all participants enjoyed the extensive hospitality of our Chinese hosts in the high-class modern Pine City Hotel in Shanghai, which was the venue for this symposium.

The special issue of Biometals including the proceedings of the Shanghai meeting has now appeared at <http://www.kluweronline.com/issn/0966-0844>

Monica Nordberg, Chairman,
SCTM
Ole Andersen, Secretary, SCTM

Scientific Committee on Small-scale Enterprises and the Informal Sector

Suvi Lehtinen



The Business Meeting of the ICOH Committee gathered some 25 experts to discuss the further development of activities.

The International Commission on Occupational Health, ICOH, has 35 Scientific Committees. The Scientific Committee on Small-scale Enterprises and the Informal Sector is one of the most active Committees. It organized an International Symposium on Occupational Health in Small Enterprises and the Informal Sector on 12–15 November 2004 in Nagoya, Japan. The meeting gathered together some 150 participants from 15 different countries, mainly from Asia, but also from the Middle East, Europe, North America, and Africa. Professor Toru Itani and Professor Norihide Tachi were the main organizers of the Symposium. They are to be credited for the most successful symposium on small-scale enterprises.

Professor Wai-On Phoon, Chair of the Scientific Committee, introduced the topic by describing the progress made by the Committee activities, and pointing out the challenges that lie ahead. Dr. Kazutaka Kogi, Vice-Chair of the Committee, described the participatory approach in providing good practices to small enterprises and the informal sector.

In addition to the oral and poster communications, a special workshop was held on further development of health and safety in small enterprises by Dr. Tsuyoshi Kawakami of the ILO and Professor Norihide Tachi. The workshop consisted of several tasks: first, each participant gave points to the three best



improvements (photos) made in small enterprises. Then each participant proposed the three most important future development ideas for small enterprises. These were collected on post-it papers onto a board and grouped according to their contents. Dr. Kawakami went over the individual proposals and summarized four groups of developments deemed important for small enterprises. These were: 1) need for a well-functioning government policy, 2) training and information activities, 3) extension of occupational health services, including basic occupational health services, and 4) need for research and networks of experts.

The Committee also held its business meeting on Monday 15 November 2004. A total of more than 20 experts

took part in the meeting, and were interested in developing research and other activities in the field of small-scale enterprises. The Symposium decided to draft a resolution which will condense the aims and activities for the Committee during the forthcoming years. In addition, as the Committee has not a Secretary at present, it was decided to propose that Professor Toru Itani will be Acting Secretary of the Committee until the final decision has been made.

Scientific Committee on Education and Training in Occupational Health

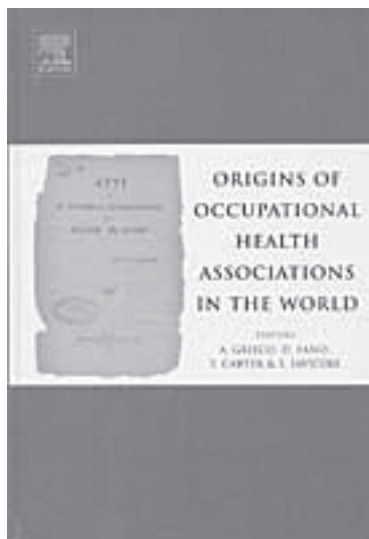
All ICOH members that are involved in education and training and like to join the Scientific Committee of Education and Training are requested to present themselves (with name, postal address and e-mail address) to the secretary of this Committee (see below). In case you have already been a member before 2002, please send your data again, because we have to actualize our members list.

All members will be informed about the committee's activities, e.g. the conference about education and training in Strasbourg, 26-29 April 2005.

Dr André Weel
Mediforce
P.O. Box 174
3970 AD Driebergen - The
Netherlands
andre.weel@mediforce.nl

A newsletter bulletin called "NeurotoxNews" is published quarterly by the SC on Neurotoxicology and Psychophysiology and is available on our web page <http://www.ich.org.sg/committees/neuro.html>

Roberto Lucchini, MD.
Secretary of the SC on Neurotoxicology and Psychophysiology
Institute of Occupational Health
University of Brescia
P.le Spedali Civili 1
25123 Brescia, Italy
Phone: +39 030 3996-604
Fax: +39 030 3996-080



A book has been published by the ICOH SC on History of Prevention of Occupational and Environmental Diseases.

The book is "Origins of Occupational Health Associations in the World", Editors: A. Grieco, D. Fano, T. Carter, S. Iavicoli, Elsevier Science B.V., ISBN 0-444-51301-9, 2003 It includes 25 chapters reporting the history of the origins of Occupational Health in 23 countries all over the world.

EPICOH

EPICOH 2004

The 17th International Symposium on Epidemiology in Occupational Health took place in Melbourne, Australia on 13–16 October 2004. Ass. Prof. Malcolm Sim was the Chair of the Organising Committee. There were 280 delegates from 43 countries with a large local participation. The organisers supported 20 delegates from developing countries. Abstracts were published online at the November issue of Occupational Environmental Medicine. For further information visit the conference website <http://www.med.monash.edu.au/epidemiology/epicoh/>

EPICOH 2005, Bergen

The 18th International Symposium on Epidemiology in Occupational Health, will take place on 11–14 September 2005 in Bergen, Norway. Prof. Bente E. Moen is the Chair of the National Scientific Committee. Among the main topics of the conference are occupational epidemiology in developing countries, research ethics and methodological approaches. Two preconference workshops are planned on reproductive epidemiology and epidemiological methods. For further information, visit the conference website <http://www.uib.no/isf/arbeid/epicoh2005/> or contact the organisers by email epicoh2005@isf.uib.no or fax 0047 55 58 61 05.

EPICOH website

The SC on Epidemiology has created its website (www.epicoh.org) that is hosted in the University of North Carolina server.

Cochrane Occupational Health Field

In May 2004, the Cochrane Collaboration has registered a new entity: the Cochrane Occupational Health field. The Cochrane Collaboration is an international non-profit independent organisation, dedicated to making up-to-date, accurate information about the effects of healthcare readily available world-wide. It produces and disseminates systematic reviews of healthcare interventions and promotes the search for evidence in the form of clinical trials and other studies of interventions. Visit the Cochrane web site for more details www.cochrane.org.

The development of the field is the result of the collaboration of the ICOH Scientific Committee on Health Services Research and Evaluation in Occupational Health. The Committee has been looking for ways to gather scientific evidence on occupational health interventions. This has resulted in the founding of a Field in the Cochrane Collaboration.

The aim of the Occupational Health Field is to:

- gather the evidence on the effectiveness of occupational health interventions
- stimulate the completion of systematic reviews on these interventions.

Occupational health interventions are defined as intentional strategies or activities aimed at reducing:

- exposure to health hazards
- worker behaviour that is unfavourable to health
- occupational or work-related diseases, injuries or disorders
- occupational disability and avoidable sickness absence.

They include actions aimed at improving working conditions, empowering workers, improving and maintaining work ability. These actions intend to create better conditions than the mere absence of disease and disability.

The Field will maintain a database of controlled trials and systematic re-

views on occupational health interventions and support Cochrane Systematic Reviews on these interventions. The website will be available from December 1 at www.cohf.fi. The Cochrane Collaboration functions mainly on the basis of voluntary participation. We call on all readers to contact us if they wish to conduct a systematic review, handsearch scientific journals, contribute a trial or systematic review to the database or want to make suggestions for funding of the Field or systematic reviews.

Contact details

The Field is housed at the Finnish Institute of Occupational Health, the Department of Research and Development of Occupational Health Services, Kuopio, Finland.

Jos Verbeek is the Field Coordinator. He can be reached at the Finnish Institute of Occupational Health, P.O. Box 93, FI-70701, Kuopio, Finland or by email at jos.verbeek@ttl.fi.

**WHO/ICOH/ILO Workshop on 24 January 2005,
Helsinki, Finland right before the OHS2005 Symposium**

Challenges to occupational health services in the Regions: the national and international response

This workshop is organized jointly by WHO, ILO and ICOH. Its purpose is to review national practices on organization and delivery of occupational health services in thirteen countries from Europe, Asia, Africa and South America and to develop recommendations for future national and international action on strengthening such services and ensuring that all workers have equal access to them.

The results of the workshop will be used by the participating countries for developing national plans of action on improving the quality and the access to occupational health services and by the intergovernmental and international organizations for streamlining international efforts and guidance in this area.

The Programme of the Workshop is available at <http://www.ttl.fi/Internet/partner/ICOH/>

The next International Congress of ICOH Scientific Committee on Education and Training

will be held in Strasbourg, France
on 27–29 April 2005.

Themes are:

- Use of NTIC and distance learning through Internet
- Education and training of OH Professionals on risk prevention and assessment
- Applied OH promotion and education for women at work
- Free papers

Deadline for submitting abstracts is 15 February 2005

Please find more information on
http://www-ulpmed.u-strasbg.fr/medecine/actualites/Icoh_1/ICOHcongressapril2005.htm
or: <http://www.ICOHcongressapril2005.euro.st/>

More information or pre-registration, please mail at
SCETHO.ICOH2005@chru-strasbourg.fr

We look forward to seeing you in Strasbourg in spring 2005.

Kind regards

Alain Cantineau
Chairman of Organising Committee

13th International Congress on Occupational Health Services

1–3 December 2005, Utsunomiya, Japan

We invite you to the 13th Congress of the ICOH Scientific Committee “Health Service Research and Evaluation in Occupational Health.” This Congress will be hosted for the first time in Asia, after the recent congresses held in the Netherlands (‘02), Belgium (‘03), and Italy (‘04). In order to convince employers and policy decision makers to invest in OHS, it is needed to show the effectiveness of OHS. Occupational health professionals are expected to construct evidence of OHS and to practice based on it. This is not easy task because the evolving world due to globalization has brought about new kinds of working styles. In this context, the main theme of this Congress is “Evidence-Based Occupational Health Services”, aiming at bringing together evidence of OHS from different countries, sectors and disciplines of OHS.

Intended audience

Occupational physicians, occupational health nurses, industrial hygienists, psychologists, and other health professionals, providers and purchasers of occupational health services, researchers, occupational health managers, occupational safety and health personnel, legislators, administrators, labor inspectors, and others interested in the theme of the Congress.

Important dates

Deadline for submitting abstracts: **31 August 2005**
Notice of acceptance: **20 September 2005**

Internet More information available at website:
<http://www.dokkyomed.ac.jp/dep-m/pub/ohs2005.html>

Secretariat

Department of Public Health, Dokkyo University
School of Medicine
Mibu 880, Tochigi 321-0293, JAPAN
TEL: +81 282 87 2133
FAX: +81 282 86 2935
E-mail: ohs2005@dokkyomed.ac.jp

Announcement

17th International Symposium on Shiftwork and Working Times

**18-22 September 2005 –
Hoofddorp, The Netherlands**

Scope of the Symposium

Working hour schemes are pre-eminently the points where interests meet. At an individual level, this is reflected in the tension between physical recovery time and social spare time. At the level of organization, working hours are related to business operating costs and flexibility, as well as to matters like employee satisfaction and disability. At the level of society, working hour schemes have effects on the gross national product, the availability of services, the citizens' freedom of choice and the quality of life. There are no recipes for achieving a good balance between the various interests, although this balance is crucial with regard to working hour schemes. Achieving the balance, therefore, requires knowledge and experience on this impressive theme. For this reason, the 17th International Symposium on Shiftwork and Working Times will focus on 'Balancing interests'.

Organization

The International Symposium on Shiftwork and Working Times is a biannual event. This symposium has a tradition of more than 30 years in providing up-to-date information on night and shiftwork, as well as new trends in working time organization. The Symposium is organized for and by members of the Working Time Society, under the auspices of the Scientific Committee of the International Commission on Occupational Health. The 17th International Symposium on Shiftwork and Working Times will be organized by ATOS, The Netherlands.

Deadlines

- 1 November 2004 Second announcement with call for papers
- 1 March 2005 Submission of abstracts
- 1 May 2005 Notification of acceptance of abstracts
- 1 May 2005 Early registration
- 18 August 2005 Final deadline for registration

National Organizing Committee

- Ben Jansen (Chair), ATOS
- Coen van Limborgh (Secretary), ATOS
- Monique Koopman, ATOS
- Arianne Witmond, ATOS
- Gerard Kerkhof, University of Amsterdam / Sleep-Wake Centre, Westeinde Hospital
- Ludovic van Amelsfoort, University of Maastricht

Congress Venue

The symposium will take place in the Claus Hotel & Event Centre in Hoofddorp. The venue is ideally located at only 15 minutes from Schiphol International Airport (shuttle bus). Tourist attractions such as Amsterdam, Haarlem, the 'Keukenhof' (the famous flower fields) and the beach are within easy reach. The venue is idyllically located near a park with a lake.

Information

For further information see:
www.shiftwork2005.atos.nl or contact us by email:
shiftwork2005@atos.nl

ATOS Beleidsadvies en -onderzoek bv • Gelderlandplein 75d • 1082 LV Amsterdam NL • Fax: +31 20 4044676 • www.shiftwork2005.atos.nl • shiftwork2005@atos.nl

Message du Président

Chers collègues de la CIST,

L'année 2004 a été, de plusieurs façons, exceptionnelle. Les scientifiques, tout comme les médias, ont fait état d'un déséquilibre croissant dans l'écosystème, le climat, de même que dans les structures géochimiques et géophysiques. La plus grande catastrophe naturelle de l'ère moderne, est survenue en Asie du sud-est le 2^{ème} jour de Noël. Un tel désastre a des répercussions sur la santé au travail aussi bien pendant qu'après l'événement.

Cette catastrophe nous rappelle aussi l'importance des déséquilibres sociaux entre les pays industrialisés et les pays sous-développés, entre les populations urbaines et rurales, entre les gens instruits et les illettrés, entre les personnes socialement et économiquement privilégiés et les démunis. Traditionnellement les travailleurs des pays en voie de développement sont exposés à des risques professionnels élevés pour un maigre salaire. La globalisation ne semble pas avoir amélioré la situation; elle crée plutôt de nouvelles frontières entre les pays et contribue, dans bien des cas, à accentuer les écarts entre les plus pauvres et les plus riches. Nous pensons qu'il est possible par la santé et la sécurité au travail, de rapprocher les dimensions économiques, plutôt unilatérales et les dimensions humaines, plus variées, de la vie de travail.

A la fin d'une année active et intéressante pour la CIST, mais aussi dramatique pour plusieurs personnes, je veux remercier tous les membres impliqués dans le fonctionnement développement de notre organisation et souhaiter à chacun de vous une bonne nouvelle année 2005.

Mots de l'éditeur

La réunion de la mi-période s'approche. Le matériel de la réunion a été envoyé aux membres du Conseil ainsi qu'aux présidents et aux secrétaires des Comités Scientifiques afin de qu'ils se préparent pour la réunion qui aura lieu entre le 27 et le 29 janvier 2005. Trois Comités Scientifiques de la CIST (la santé au travail et le développement, les pesticides et les soins infirmiers en santé au travail) organiseront ensemble avec l'OMS et l'OIT un atelier le 24 janvier 2005 à Helsinki (Finlande) sur le thème «Est-ce que les services de santé au travail existent vraiment ?» Le programme de l'atelier se trouve sur <http://www.ttl.fi/Internet/partner/ICOH>.

Nouvelles des sous-comités scientifiques

Comité scientifique sur la toxicologie des métaux et des biométaux

Comptes rendus du Symposium International concernant les effets de l'exposition au cadmium sur la santé et sa prévention en Chine

Entre le 17 et le 19 novembre 2003, les Professeurs Taiyi Yin de l'université de Fudan (Chine) et Gunnar F. Nordberg de l'université de Umeå (Suède) ont organisé un symposium international sur les effets de l'exposition au cadmium sur la santé et sa prévention en Chine. Les comptes rendus viennent d'être publiés sur Internet. Ils peuvent être consultés à l'adresse <http://www.kluweronline.com/issn/0966-0844/contents>. Cete réunion a été justifiée par l'amélioration des connaissances sur l'ampleur de la pollution du cadmium et les indicateurs des effets potentiels sur la santé dans certaines provinces du sud-est de la Chine. Le symposium avait un double objectif : d'une part la transmission du savoir scientifique international acquis depuis plusieurs décennies sur l'étendue de la pollution par le cadmium et la relation entre l'exposition et les indicateurs de risques et d'autre part informer la communauté

scientifique internationale sur la recherche et les mesures préventives prises dans les régions polluées en Chine.

La réunion a été financée par la Commission européenne et par la Commission Scientifique sur la toxicologie des métaux de la CIST et parrainée par l'Association chinoise de la santé au travail, par l'université de Fudan et par l'université de Umeå. Elle a rassemblé environ 80 scientifiques. Elle fut une réussite, les participants ont été enchantés par la très grande hospitalité chinoise.

Le comité scientifique sur la recherche et l'évaluation des services en santé au travail

La Collaboration Cochrane: un nouveau champ Cochrane en santé au travail

En mai 2004, la Collaboration Cochrane a enregistré une nouveau champ d'action : la santé au travail. La Collaboration Cochrane est une organisation internationale indépendante sans but lucratif qui produit des informations exactes et actuelles sur les effets des soins de santé dans le monde entier. Elle réalise et diffuse des analyses systématiques sur des interventions sanitaires et promeut les soins de santé fondés sur des essais cliniques et scientifiques. Visitez le site Internet Cochrane pour plus d'informations www.cochrane.org.

Ce champ d'action a été développé en collaboration avec le Comité Scientifique sur la recherche des services de santé et sur l'évaluation de la santé au travail.

L'objectif vise à :

- rassembler des évidences sur l'efficacité des interventions de santé au travail
- encourager des analyses systématiques sur ces interventions

Vous y retrouverez une base de données sur des essais contrôlés et sur des analyses systématiques d'interventions effectuées en santé au travail. Un site web est disponible depuis le premier décembre : www.cohf.fi. La Collaboration Cochrane fonctionne en grande

partie grâce à la participation de volontaires. Nous invitons les lecteurs à nous contacter, si vous voulez réaliser des analyses systématiques d'intervention en santé au travail, examiner des journaux scientifiques, contribuer à la base de données ou proposer des idées sur le financement de ce nouveau champ d'action.

Contact

M. Jos Verbeek est le coordinateur du champ. Il peut être joint à l'Institut Finlandais de Santé au Travail, B.P. 93, FIN-70701 Kuopio, Finlande ou par courrier électronique jos.verbeek@ttl.fi.

La nanotechnologie – un nouveau défi pour la génération future dans le domaine de la santé au travail ?

Une deuxième opportunité se présente rarement, surtout dans le domaine de la santé au travail. Selon quelques personnes, la prochaine révolution industrielle se présentera sous la forme de la nanotechnologie. La révolution industrielle du XVIII^{ème} et XIX^{ème} siècles a eu une influence profonde sur la santé des travailleurs et a conduit au développement de la santé au travail moderne. Comme la nanotechnologie bouleversera nos vies de plusieurs manières pendant les décennies à venir, la science devra pour protéger la santé des travailleurs, faire face au défi de minimiser les risques de façon préventive plutôt que de réagir à posteriori aux impacts.

La « nanotechnologie » est un terme adopté depuis quelques années pour décrire la manipulation de la matière à des niveaux presque anatomiques, permettant de créer ainsi de nouveaux matériaux, des structures et des équipements. La technologie n'est pas réservée seulement à quelques disciplines mais trouve son application dans divers domaines de recherche et de développement.

La nanotechnologie est encore au stade de recherche et de développement. Le gouvernement américains dépense en ce moment environ 1 milliard de dollars par an sur la recherche et sur le développement de cette technologie. Des sommes comparables sont investies en Europe et en Asie et de façon complémentaire, par l'industrie. L'accent est surtout dirigé vers de nouveaux matériaux qui

mettent à profit les exceptionnelles qualités électriques, optiques et physiques associées aux structures à l'échelle du nanomètre. Pour donner seulement trois exemples :

- Le dioxyde de titane nanostructuré est transparent à la lumière visible mais absorbe les rayons ultra-violet rendant cet ingrédient utile dans les crèmes et les lotions solaires. La nature photoactive du dioxyde de titane peut être utile dans les matériaux nanostructurés pour former un biocide effectif à la présence de la lumière ultraviolette. Les fenêtres, les carrelages, les revêtements des comptoirs auto-nettoyants traités avec le dioxyde de titane nanostructuré sont maintenant en vente.

- Les nanotubes de carbone – molécules simples tubulaires dont le diamètre est de quelques nanomètres mais dont la longueur peut être des micromètres – a un niveau de qualité unique, y compris la conductibilité thermique et électrique très élevées, la semi-conductibilité dans quelques configurations et le plus fort ratio résistance/poids d'une matière connue.

- Les boîtes quantiques – nanoparticules semi-conductrices d'une taille uniforme – permettent de montrer les effets quantiques dépendants de la taille de la particule comme fluorescente à très haut rendement. Les applications potentielles comprennent *in situ* une imagerie médicale ciblée.

Beaucoup d'autres matériaux nanostructurés sont développés, recherchés et produits pour diverses applications.

Quant à l'avenir, il est clair que la nanotechnologie influencera chaque aspect de nos vies de la même manière que la révolution industrielle a changé radicalement plusieurs domaines sociaux. La révolution industrielle a engendré de nouveaux risques de santé, qui à leur tour ont conduit à la création de l'hygiène au travail moderne. Par comparaison, il est naturel de se demander si la nanotechnologie changera notre compréhension des effets à la santé. Devrons-nous revoir la protection de la santé des travailleurs ?

Il est trop tôt, à tous les égards, pour donner des réponses définitives. Il s'agit d'une très jeune technologie dont les futurs effets sont relativement imprévisibles. Il y a un certain nombre d'indicateurs quantitatifs signalant que des matériaux nanostructurés peuvent présenter un risque de santé unique: La recherche sur la toxicité pulmonaire des nano-

particules a démontré que pour un certain nombre de matériaux insolubles, la surface et l'activité d'une particule indiquent mieux l'activité biologique que la chimie de masse ou de volume. La recherche a aussi démontré la potentialité des nanoparticules de migrer du poumon à d'autres organes et de la région nasale au cerveau.

Présentant un risque de santé potentiel sur les lieux de travail, il est concevable que la nanotechnologie puisse aussi être utilisée pour améliorer les conditions de travail. Il est déjà clair que cette technologie puisse accroître les méthodes diagnostiques, les thérapies médicales et le contrôle/effet de la pollution environnementale au delà des capacités actuelles.

Aux U.S.A. le gouvernement fédéral a mis l'accent sur les implications sociales de la nanotechnologie, y compris les effets sur la santé. NIOSH, l'agence américaine chargée d'assurer la santé et la sécurité des travailleurs par la recherche, la communication, l'éducation et la formation, a relevé le défi en lançant une importante initiative nanotechnologique. L'Institut est en train de développer une série de documents pour soutenir les lignes directrices sur la bonne pratique de travail. Par exemples, des questions fréquentes sur la nanotechnologie avec leurs réponses seront publiées sur les pages Internet de NIOSH (www.cdc.gov/NIOSH/topics/nanotech) pour la fin 2004. Une initiative importante, regroupera les parties concernées, lors de symposiums internationaux sur la nanotechnologie et la santé au travail. Le premier a eu lieu en Grande-Bretagne en octobre 2004 et le deuxième est prévu à Minneapolis (U.S.A.) pour octobre 2005 (www.cce.umn.edu/nanotechnology).

Le Comité Scientifique sur les petites entreprises et le secteur informel

La Commission Internationale de la Santé au Travail (CIST) possède 35 Comités Scientifiques. Le Comité Scientifique sur les petites entreprises et le secteur informel est l'un des plus actifs. Il a organisé un symposium international entre le 12 et le 15 novembre 2004 à Nagoya au Japon rassemblant environ 150 participants venant de 15 pays différents. Les Professeurs Toru Itani et Norihide Tachi ont été responsables de l'organisation du symposium.

En plus des communications orales et des posters, un atelier de travail concernant les futurs développements de la santé et de la sécurité dans les petites entreprises a été organisé par le Docteur Tsuyoshi Kawakami représentant l'OIT et le Professeur Norihide Tachi. Les besoins de développement importants pour les petites entreprises ont été résumés de la façon suivante : 1°) une politique gouvernementale fonctionnant bien, 2°) formation et information, 3°) extension des services de santé au travail y compris les services de base et 4°) recherche et réseaux d'experts.

Comité Scientifique sur l'éducation et la formation

Tous les membres de la CIST qui ont affaire à l'éducation et à la formation voulant se joindre au Comité Scientifique sur l'éducation et la formation, sont priés de communiquer leur nom, adresse postale et courrier électronique au secrétaire du Comité, voir ci-dessous. Si vous étiez adhérent avant l'année 2002, veuillez nous renvoyer vos coordonnées car nous devons mettre à jour la liste des membres.

Nous ne manquerons pas de vous informer des activités du Comité, en premier lieu la conférence sur l'éducation et la formation qui aura lieu entre le 26 et le 29 avril 2005 à Strasbourg (France).

Dr André Weel
Mediforce
P.O. Box 174
3970 AD Driebergen – The Netherlands
andre.weel@mediforce.nl

EPICOH

EPICOH 2004 – 17^{ème} Symposium International sur l'Epidémiologie dans la Santé au Travail – a eu lieu entre le 13 et le 16 octobre 2004 à Melbourne, en Australie. Vous trouverez plus d'information sur <http://www.med.monash.edu.au/epidemiology/epicoh/>. EPICOH 2005 sera organisé entre le 11 et le 14 septembre 2005 à Bergen en Norvège. Les thèmes principaux de la conférence seront l'épidémiologie professionnelle dans des pays en voie de développement, l'éthique sur la recherche et des approches méthodologiques. Pour des informations supplémentaires, veuillez visiter les pages Internet de la conférence sur <http://www.uib.no/isf/arbeid/epicoh2005/> ou contacter les organisateurs par courrier électronique epicoh2005@isf.uib.no ou par fax 0047 55 58 61 05.

Le Comité Scientifique sur l'épidémiologie a ouvert ses pages Internet sur www.epicoh.org qui se trouvent sur le serveur de l'université de Caroline du Nord.

ICOH Officers

President

Prof. Jorma Rantanen
Finnish Institute of
Occupational Health
Topeliuksenkatu 41a A
FIN – 00250 Helsinki, Finland
Tel: +358 9 4747 2010
Fax :+358 9 4747 2548
e-mail :
jorma.rantanen@occuphealth.fi

Secretary General

Dr. Sergio Iavicoli
ISPESL
National Institute for Occupational
Safety and Prevention
Via Fontana Candida 1
00040 Monteporzio Catone
(Rome), Italy
Tel: +39 06 94181407
Fax: +39 06 94181556
e-mail: seriav@iol.it

Vice-President

Dr. Ruddy C Facci
Health at Work International
Institute
Rua XV De Novembro 1425
Curitiba - Parana
CEP 80060-000, Brazil
Tel: 55 41 264 6363
Fax: 55 41 264 9446
e-mail: ruddy@insatnet.com.br

Vice President

Prof. Alain Cantineau
University Inst. Health Work
Environnement Faculty of Medicine
Louis Pasteur University - Hôpital
Civil
1 Place de l'Hôpital
67091 Strasbourg, France
Tel: +33 3 88116 466
Fax : +33 3 88116 524
e-mail :
alain.cantineau@medecine.u-strasbg.fr

Past President

Prof. Bengt Knave
National Institute for Working Life
S-11279 Stockholm, Sweden
Tel: 46 8 619 6737
Fax: 46 8 618 3635
E-mail: bengt.knave@niwl.se

Prof. Tar-Ching Aw

University of Kent
Canterbury CT2 7PD, Kent, UK
Tel: +44(1227)-827329
Fax: +44(1227)-724054
e-mail: t.c.aw@ukc.ac.uk

Mr. Ian Eddington

Faculty of Business, University of
Southern Queensland
Post Office Darling Heights
Toowoomba, Qld 4350, Australia
Tel: +61 746 311250
Fax: +61 746 315594
e-mail: edding@usq.edu.au

Mr. Kaj Elgstrand

National Institute for Working Life
SE-113 91 Stockholm, Sweden
Tel: +46 8 619 6742
Fax: +46 8 618 3635
e-mail: kaj.elgstrand@niwl.se

Prof. Abdeljalil El Kholti

Faculty of Medicine of Casablanca
Hassan II - Ain Chock University
P.O. Box 9154 20100 Casablanca
Morocco
Tel: +212 22 471454/222555
Fax: +212 22 298070
e-mail: akholti@fmp-uh2c.ac.ma
akholti@menara.ma

Prof. Richard Ennals

Kingston Business School
Kingston University
Kingston Hill – Kingston KT2 7LB
United Kingdom
Tel: +44 20 8547 7242
Fax: +44 20 8 547 7024
e-mail: ennals@kingston.ac.uk

Prof. Hua Fu

Fudan University
P.O. Box 248138 Yixueyuan Road
Shanghai 200032, China
Tel: +86 21 5423 7202
Fax: +86 21 6422 3464
e-mail: hfu@shmu.edu.cn

Prof. Tee L Guidotti

The George Washington University
Medical Center
2300 K Street, NW, Suite 201
Washington DC 20037, USA
Tel: +1 202 994 1765
Fax: +1 202 994 0011
e-mail: eohtlg@gwumc.edu

Dr. Kazutaka Kogi

The Institute for Science of Labour
2-8-14 Sugao, Miyamae-ku
Kawasaki 216-8501, Japan
Tel: +81 44 977 2121
Fax: +81 44 977 7504
e-mail: k.kogi@isl.or.jp

Dr. Petter Kristensen

National Inst. of Occupational
Health
P.O. Box 8149 Dep
N0033 Oslo, Norway
Tel: +47 2319 5100
Fax: +47 2319 5200
e-mail: petter.kristensen@stami.no

Prof. Tore J. Larsson

KTH - Royal Institute of
Technology
Campus Haninge
Marinens väg 30
SE-136 40 Haninge, Sweden
Tel: +46 8 790 4821
+46 8 696 4803
Fax: +46 8 790 4800
email: tore.larsson@syd.kth.se
tore.larsson@afa.se

Ms. Suvi Lehtinen

Finnish Institute of
Occupational Health
Topeliuksenkatu 41a A
FIN-00250 Helsinki, Finland
Tel : +358 9 47472344
Fax : +358 9 47472548
e-mail:
Suvi.Lehtinen@occuphealth.fi

Prof. Marco Maroni

International Centre for Pesticide
Safety (ICPS)
Regione Lombardia
Via Magenta 2520020 Busto
Garolfo - Milan, Italy
Tel: +39 331 568091
Fax: +39 331 568023
e-mail: mmaroni@icps.it

Prof. René Mendes

School of Medicine
Federal University of Minas Gerais
Rua Chicago, 685/801 Sion – Belo
Horizonte-MG, Brazil
Tel: +55 31 3222 5242
Fax: +55 31 3222 5242
e-mail: rene.mendes@uol.com.br

Dr. Louis Patry

Occupational Physician and
ergonomics
Direction de la Santé publique de
Montréal-centre
1301 rue Sherbrooke Est
Montréal, Québec H2L 1M3,
Canada
Tel: +1 514 528 2400
Fax : +1 514 528 2459
e-mail: LPatry@santepub-mtl.qc.ca

Prof. Gustav Schäcke

Institut für Arbeitsmedizin
Humboldt-Universität zu Berlin – F
Ostpreussendamm 111
D-12207 Berlin, Germany
Tel: +49 30 817 5548
Fax: +49 30 847 09406
e-mail:
Gustav.schaecke.berlin@online.de

Ms. Jennifer Serfontein

PO Box 27167
Greenacres 6057
Port Elizabeth, South Africa
Tel: 27 41 401 2800
Fax: 27 41 401 2801
Email: serfie@mweb.co.za

Prof. Ken Takahashi

Department of Environmental
Epidemiology
University of Occupational &
Environmental Health
Orio, Yahatanishiku
Kitakyushu City 807-8555, Japan
Tel: +81 93 691 7454
Fax: +81 93 601 7324
e-mail: ktaka@med.uoeh-u.ac.jp