

Top down and bottom up approach



Multicultural cooperation



New pathways to summit



New methods for data collection



Study the Balance Theory



Get some hands-on experience



The relevance of brute force in conflict management



Discover unresearched areas



Striving for an elevated perspective



Design of protective equipment



Effects of environmental conditions on researchers mood and performance



RHODES UNIVERSITY
Where leaders learn



ODAM2011

10th International Symposium on
**Human Factors in Organisational
Design and Management**

4 - 6 April 2011 • Grahamstown • South Africa

RESEARCH FOR THE MISSING LINK

Preliminary Programme

(updated 7 February 2011)

Supported by



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Overview

Sunday 3 April		
10:30 Pre-conference workshops 1. Office Ergonomics 2. Logical Framework Approach 3. Ergonomics Guidelines for IDC 16:00 4. Visual Display Terminals	16:00 Registration 19:00	IS: Interactive Session 18:00 Welcome Reception 19:00
Monday 4 April	Tuesday 5 April	Wednesday 6 April
8:30 Conference opening 9:30 Keynote K Kogi (Japan) 10:15 <i>Tea / Coffee break</i>	8:30 Penary Speech P John (SA) 9:00 Management of Interventions / Psycho-Social Asp. & Well-Being / Age-differentiated Work Systems / Human Factors in Agriculture 10:15 <i>Tea / Coffee Break</i>	8:30 HF in Industrial Engineering / Health Care management / Organizational Culture in Mining (IS) 10:00 <i>Tea / Coffee Break</i>
10:45 Ergonomics in Management / EQUID and Affective Design / Application of Ergonomics Design / Industrially Developing Countries 12:15 <i>Lunch break</i>	10:45 Human Factors Methods / Risk Management / Work Design in Health Care / Human Factors of Physical Tasks 12:15 <i>Lunch Break</i>	10:30 Tools for Participatory Design / Human Fatigue / Ergonomics and Society / Prevention of WRMSDs (IS) 12:00 <i>Lunch Break</i>
13:15 Standardization and Flexibilisation / Human Factors in Construction / Worker Participation in Mining (IS) / Airport Ergonomics (IS) 15:15 <i>Tea / Coffee break</i>	13:15 Keynote PA Scott (South Africa) 13:45 Knowledge Work and Teaching / Subjective and Affective Factors / Work Analysis / Environmental Stressors 15:00 <i>Tea / Coffee break</i>	13:00 Human Factors Concepts / Human Factors of Mining Industry / Health of Office Workers / Reliability Management 14:15 Closing Ceremony and 14:45 Outlook to ODAM XI (2014)
15:45 Penary Speech J Dul (Netherlands) 16:15 Cultural Ergonomics / Schools and Education / Safety Management / Fitness for Work 17:15	15:30 Keynote A Imada (USA) 16:15 16:30 Historic Town Tour (optional) see Page 19 for details 18:00	15:00 Safari Park Visit (optional) see page 18 for details
18:30 <i>Dinner</i> 20:00	19:00 <i>Gala Dinner</i> 22:00+	Thursday 7 April
		10:00 Visit to Volkswagen Automotive Plant in Uitenhage / Port Elizabeth (optional) see Page 18 for details 13:00

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Sunday 3 April

10:00 - 16:30 PRE-CONFERENCE WORKSHOPS

Workshop 1

OFFICE ERGONOMICS

By: Bob Bridger (Institute of Naval Medicine, United Kingdom)

This is a seminar on office ergonomics targeted at major financial institutions, office furniture companies and large corporations. Delegates with a background in facilities management, human resources and health and safety may attend.

Topics

1. Physical Ergonomics principles and design guidelines
 - a. Chairs and seating
 - b. Workstation design
 - c. Office Environment. Climate, lighting and noise
 - d. Office layout. Open plan, bullpen privacy and grouping
2. Psychological and Psychosocial factors
 - a. Stress and strain
 - b. Working hours and rest periods
 - c. Fatigue
3. Examples of office ergonomics tools – practical session
4. Case Study – assessment of the well-being of office workers
5. Overview

Workshop 2

LFA- LOGICAL FRAMEWORK APPROACH

By: Houshang Shahnavaz and Emma-Christin Lönnroth (Centre for Ergonomics of Developing Countries; Lulea University of Technology, Sweden)

This workshop is appropriate for people working with projects, research and development, research students and anyone interested in project planning, design and management at private, government or industrial organization.

Logical Framework Approach is an analytic tool for objective orientated project planning and management. LFA ensures that fundamental questions are asked and weaknesses are analyzed in order to provide decision makers with better and more relevant information. It guides systematic and logical analysis of the inter-related key elements which constitute a well-designed project. It provides a better basis for systematic monitoring and analysis of the effects of the projects. Management and administration benefit from this standardized procedure for collecting and assessing information. It also facilitates common understanding and better communication between decision-makers, managers and other parties involved in the project. LFA is an internationally accepted and widely used tool for improving the quality of project.

The aim of this work is to give participants the knowledge and skill for using LFA in their current and future projects.

Sunday 3 April

Workshop 3

ERGONOMICS GUIDELINES FOR OCCUPATIONAL HEALTH PRACTICE IN INDUSTRIALLY DEVELOPING COUNTRIES

By: Patricia Ann Scott, A Todd and C Christie (Rhodes University, South Africa)

In most IDCs there is very limited knowledge about ergonomics, and there are very few qualified Ergonomists. However, there are often people trained and involved in various sub-sections of occupational health and safety. While the expertise of these two general groups of professionals may differ there are many common areas of concern, the most important of which is for the health, safety and general well-being of workers involved in sub-optimal working conditions. The Ergonomics Guidelines, which form the basis of this workshop, are a joint venture of the IEA and ICOH.

The IEA and ICOH take the view that the lack of personnel formally trained in ergonomics should not be a barrier to the application of basic ergonomics principles in the work place. These Guidelines have therefore been developed to assist those who have a basic working knowledge of ergonomics and its benefits, but who do not have a formal education in the field.

The objective of the workshop is to cover the various sections of the booklet with interactive discussions and drawing on the personal experience of the delegates. This will be followed with the application of some of the points covered within a mock-up setting in the lab. The emphasis will be on manual work, identifying problem areas and considering ways of implementing “low cost” solutions, as well as assessing the benefits to both the specific worker(s) on the job and the company as a whole.

Workshop 4

VISUAL DISPLAY TERMINALS

By: Ruud Pikaar (Eur.Erg., ErgoS Engineering & Ergonomics, Netherlands)

Target group: workplace designers/engineers, occupational safety & health officers, human factors engineers and graduate students, management, and of course all participants of participants of the ODAM conference.

Session goal: Learn the basics of designing (multi-) display workstations.

Summary: In many workplaces, work with computers is increasing. Though human factors standards for VDT workstation design are in place, complaints and health problems can be noted. Practice is more complicated than standards suggest, and (display) technology is very rapidly changing. Therefore, a workplace designer should understand the human factors principles and be able to apply these principles in practice. So, learn how to optimize workstation design and avoid occupational health problems. This workshop provides human factors background material and practical experiences (cases) in the field of computer workstations with several visual display terminals. The workshop consists of three parts:

16:00 - 19:00 CONFERENCE REGISTRATION

18:00 - 19:00 WELCOME RECEPTION

Monday 4 April

8.30 – 9:30 CONFERENCE OPENING

Conference opening by the ODAM Technical Committee Chair (*M Robertson, USA & M Göbel, SA*)

Welcome address by the President of the International Ergonomics Association (*A Imada, USA*)

Welcome address by the Chairperson of the South African Ergonomics Society (*A Todd, South Africa*)

Welcome address by the Vice-Chancellor of Rhodes University (*S Badat, South Africa*)

Welcome address by the Major of Grahamstown (*n.n.¹*)

Introduction to the conference (*M Göbel, South Africa*)

9:30 – 10:15 KEYNOTE

How to support the participatory planning of practical workplace improvements (*K Kogi, Japan*)

10:15 – 10:45 TEA/COFFEE BREAK

10:45 – 12:15 (1) ERGONOMICS AND MANAGEMENT

Implementing lean production in a French automotive industry: which contributions for ergonomics?
(*M-S Perez Toralla, P Falzon & A Morais, France*)

Self-directed work teams and power (*G Maes & G Van Hootegem, Belgium*)

Developing HTO system's thinking for organizational and technological change (*A Karlton, Sweden*)

Conflicts between work and private life caused by working times
(*G Zülch, P Stock, D Schmidt & M Leupold, Germany*)

Managing sustainable ergonomics changes in large organisations (*D Caple, Australia*)

How to balance workplace safety with vocational rehabilitation (*G Szabó, Hungary*)

10:45 – 12:15 (2) EQUID AND AFFECTIVE DESIGN Organised by HM Khalid (Malaysia)

Ergonomics quality in design (EQUID) and affective design; bridging the gap (*R Bruder, Germany*)

Affect meets engineering – matching soft and hard factors in the design process (*M Göbel, S. Africa*)

User requirements in affective design; consideration for EQUID process (*MG Helander, Singapore*)

EQUID and measuring affective user experience (*HM Khalid, Malaysia*)

Sustainable affective design (*A Thatcher, South Africa*)

User centred approach in affective design of a portable PC
(*SJ Wong, N Senin & KNA Wahib, Malaysia*)

¹ Due to municipal elections taking place before the conference

Monday 4 April

10:45 – 12:15 (3) APPLICATION OF ERGONOMICS DESIGN

Benefits of physical activity versus seat space for aircraft passengers
(*SHH Tau & M Göbel, South Africa*)

An ergonomically designed electrical overhead crane for a cold rolling mill
(*VK Tewari & MR Jha, India*)

Deboners' stress in alternatively organized work (*J Karlton, K Aili & K Vogel, Sweden*)

Ergonomics application in a production company: case study, Darougar Company in Iran
(*H Shahnavaz, A Naghib & S Samadi, Sweden*)

The role of the Department of Industrial Safety and Health at Work in Minas Gerais
(*C Sirqueira & G Balbinotti, Brazil*)

Production systems and the benefits of ergonomics on working conditions: a theoretical and practical analysis on the topic (*L Vieira, G Balbinotti, L Gontijo & A Motter, Brazil*)

10:45 – 12:15 (4) HUMAN FACTORS ATTRIBUTES OF INDUSTRIALLY DEVELOPING COUNTRIES

Cumulative effects of living conditions and working conditions on the health, well-being, and work ability of nurses in Grahamstown (*J Hodgskiss & S Zschernack, South Africa*)

Process of work and mental health of family farmers in a micro-region in Southern Brazil
(*AR Poletto & LA Gontijo, Brazil*)

Working at the port with no master: pleasure and passion in a hard and risky job
(*M de F Queiroz, F Vezzà & R Machin, Brazil*)

An ergonomic study on the prevalence of musculoskeletal disorders among the load handling workers of a central market area in Kolkata (*T Das & S Gangopadhyay, India*)

An ergonomic study on the occurrence of accidents among the manual material handling workers of a central market area in Kolkata (*S Gangopadhyay & G Ghosha, India*)

Excellent work-place quality: questionable socio-economics (*JE Kelly & CJ Christie, South Africa*)

12:15 - 13:15 LUNCH BREAK

13:15 - 15:15 (1) STANDARDIZATION AND FLEXIBILIZATION IN OPERATIONS MANAGEMENT

System trust as a condition for successful co-operation (*M Kunze & B Spanner-Ulmer, Germany*)

Development activities in product introductions – a cross functional approach
(*M Berglund, U Harlin, M Gustavsson & K Säfsten, Sweden*)

Planning of adaptable assembly systems due to an ageing workforce
(*G Zülch & M Waldherr, Germany*)

Standardization as a tool to promote continuous improvement – case study of an automobilist factory (*L Vieira, G Balbinotti, G Coutinho & L Wiemes, Brazil*)

The information management in the context of project management: a focus on human work
(*J Fagundes, G Balbinotti, L Gontijo, R Triska & R Mendes Junior, Brazil*)

Monday 4 April

Error analysis and cultural assessment of human operators' interaction with a computer-based shop floor control system (*KG Bagley, C Ntuen & S Jiang, USA*)

Context and expertise conceptualized as localized metadata (*BS Caldwell et al., USA*)

Challenges in simulating information flow and knowledge sharing in organizations
(*BS Caldwell et al., USA*)

13:15 – 15:15 (2) HUMAN FACTORS IN CONSTRUCTION INDUSTRY **Organised by P Hoonakker (USA)**

Chronic diseases and function limitations among older construction workers
(*XS Dong & K Ringen, USA*)

Safety performance in construction - the challenge to improve safety culture
(*R Rwamamara & P Simonsson, Sweden*)

Energy expenditure requirements of bricklaying in South Western Nigeria
(*SO Ismaila, KT Oriolowo & OG Akanbi, Nigeria*)

Effects of leadership on construction workers' health and safety behaviour
(*CN Mulenga, JJ Bagraim & J Smallwood, South Africa*)

Ergonomics and manual handling in construction industry – risks and mitigations – experience from a developing economy (*KN Sen, India*)

Psycho-social workload in construction industry: a longitudinal study
(*P Hoonakker, C van Duivenbooden & J van der Molen, USA*)

Attributes of small, informal construction companies
(*T Smith-Jackson, B Kleiner, HN Kim, Y-H Hung & S Artis, USA*)

13:15 – 15:15 (3) HOLDING HANDS AT MIDNIGHT... SPECIAL SESSION ON WORKER PARTICIPATION IN THE MINING INDUSTRY **Facilitated by V Blewett, A Shaw and S Schutte (Australia & South Africa)**

Effective workforce participation in decision-making is a foundation for building healthy and safe workplaces. But there are some specific parameters for successful participation, such as commitment to the process of participation, regulatory support, the capacity to deal with power differentials, being treated with respect, being understood, having information and knowledge about workplace health and safety (at worker representative and management levels), and understanding the rules of engagement. In workplaces where one language is spoken effective participation should be relatively straightforward (although we know this is not always the case) but what happens in more complex environments? How can effective participation be accomplished in an environment where many different languages are spoken, where literacy is a barrier to knowledge and communication, where it is difficult for people to be physically together as a result of shift work and geography, and where the differences in power and influence between workers and senior management are very great?

This workshop will explore the features of effective consultation and the techniques and practices that can be used in a multi-lingual environment. It will draw on the experience of participants as well as our experience in two projects in the mining industry: the South African *Changing Minds, Changing Mines* project and the Australian *Digging Deeper* project.

Monday 4 April

13:15 – 15:15 (4) INTERACTIVE SESSION: AIRPORT ERGONOMICS - DESIGN OF BAGGAGE HANDLING SYSTEMS

Facilitated by R Pikaar (Netherlands)

Objectives:

Airport baggage handling systems are primarily based on manual handling of luggage. Traditional ergonomic guidelines for manual handling (lifting), show high levels of occupational health risks. The challenge is to find efficient ways to improve baggage handling and reducing health risks.

What do you get from this session?

- Experience a practical engineering context – *which may differ from scientific research outcomes*
- Discover the scope of a manual baggage handling problem – *it's not only about lifting luggage*
- Find out that a systems approach leads to innovative design solutions – *eye opener: best solutions are found in smart scheduling of tasks, not in automated loading systems.*

Session program

1. Presentation: introduction in airport baggage handling systems engineering
2. The engineering challenge – 5 minutes to think about the best redesign solution
3. Sub group discussion – inventory of human factors relevant in airport baggage handling and list additional design data you need
4. Additional data distributed
5. Sub group discussion: decide on your conceptual design for a new system and show the level of improvement you expect to gain.
6. Interactive (plenary) discussion.
7. Summary: the innovation of traditional baggage handling.

15:15 – 15:45 TEA/COFFEE BREAK

15:45 – 16:15 PLENARY SPEECH

The future of Ergonomics (*J Dul, Netherlands*)

16:15 – 17:15 (1) CULTURAL ERGONOMICS RESEARCH AND METHODS SYMPOSIUM

Organised by T Smith-Jackson (USA)

Cultural critical incidents in design: an international perspective

(*CG Oh, T Smith-Jackson, B Anderson, C Kim & H Iridiastadi, USA*)

Understanding how vulnerable populations use common information and communications

technologies (ICTs) to access health care information (*M Rogers, L Zach & P Dalrymple, USA*)

Culturally-competent ergonomics: a preliminary research checklist

(*T Smith-Jackson & A Essuman-Johnson, USA*)

Use of a human factors approach to uncover informatics needs of care providers as part of a trans-

disciplinary care model (*M Rogers, P Dalrymple & Y An, USA*)

Monday 4 April

16:15 – 17:15 (2) HUMAN FACTORS IN SCHOOLS AND EDUCATION

Ergonomic impact to improve learning environment (*L Burov & O Burova, Ukraine*)

Ergonomic evaluation and design of tables and chairs for use in tertiary institutions in Nigeria
(*AI Musa & OS Ismaila, Nigeria*)

Community ergonomics: A hand hygiene intervention in K-5 public schools (*CJ Alvarado, USA*)

Children and adolescents working in artistic labor: the Brazilian paradox
(*SR Cavalcante & R Vilela, Brazil*)

16:15 – 17:15 (3) SAFETY MANAGEMENT

Is a risk averse culture placing patients at more risk from bedrails?

(*S Hignett, G Sands, M Fray & D Xanthoupoulou, F Healey and P Griffiths, UK*)

International communication (*LJH Schulze, USA*)

Ranking of working shift groups in an Iranian petrochemical company using ELECTRE method based on safety climate assessment results (*M Khandan, M Maghsoudi Pour & S Vosoughi, Iran*)

The effect of safety culture on safety in organizational structures: a case study in Turkey
(*S Dursun & S Aytac, Turkey*)

16:15 – 17:15 (4) FITNESS FOR WORK

Aging or chronic disease: which is the real culprit? (*JE Kelly & CJ Christie, South Africa*)

Work ability of an ageing workforce at sea (*AI Bennett & R S Bridger, UK*)

Physical inactivity and cardiovascular risk in black males and females forming an urban working population (*L Jackson & C Christie, South Africa*)

The ageing workforce: impacts on fire training in seafarers (*AI Bennett & RS Bridger, UK*)

18:30 DINNER

Tuesday 5 April

8:30 – 9:00 PLENARY SPEECH

Human factors and ergonomics implementation in South African branches of automotive industry (*P John & B Canning, South Africa*)

9:00 – 10:15 (1) MANAGEMENT OF INTERVENTIONS

Integrating ergonomics into the engineering design of a hospital sterile processing plant: The role of an intermediary object (*LB Sørensen & O Broberg, Denmark*)

Monitoring management practices during the implementation of a participatory ergonomics program in a factory setting (*SN MacKinnon & CP Boone, Canada*)

Working at the macro-micro boundary: factors promoting and inhibiting the sharing of electronic patient records in the UK (*P Waterson, K Eason, D Tutt, M Dent & A Thornett, UK*)

Systems engineering – innovation in airport baggage handling
(*R Pikaar and F Asselbergs, Netherlands*)

Capturing decision input content to support work system design (*J Guinery, UK*)

9:00 – 10:15 (2) PSYCHO-SOCIAL ASPECTS AND WELL-BEING

Performance-based management and quality of work: an empirical assessment
(*P Falzon, A Nascimento, C Gaudart, M-A Dujarier & JF Germe, France*)

Transcultural leadership – toward greater occupational safety and health (*LJH Schulze, USA*)

Workplace safety and health promotion through participatory ergonomics: a systems approach for effectiveness and sustainability (*M Robertson, R Henning, N Warren, P Faghri, M Cherniack & the CPH-NEW Research Team, USA*)

Physical work environment, well-being and productivity in a South African financial institution: implications for work and workplace design (*A Thatcher & K Milner, South Africa*)

Developing and testing a model of psychosocial work environment and performance
(*K Edwards, JH Pejtersen & N Møller, Denmark*)

9:00 – 10:15 (3) AGE-DIFFERENTIATED WORK SYSTEMS

Organised by CM Schlick (Germany)

Identifying demographic bottlenecks for musculoskeletal risks in production areas - implications for the design of industrial workplaces and assignment of workers (*H Rademacher, R Bruder, A Sinn-Behrendt & K Landau, Germany*)

Ergonomic analysis of assembly work in a Chaku-Chaku assembly line – a follow up case study in a facility of the German automotive industry (*JA Enríquez-Díaz, A Sytch, D Kotzab & E Frieling, Germany*)

Changes in employee attitudes towards work activity in a Chaku-Chaku assembly line.
- a follow-up study in a German automotive manufacturing company (*D Kotzab, A Enríque, A Sytch & E Frieling, Germany*)

Tuesday 5 April

Identifying age-differentiated strain profiles for assemblers on the basis of age-critical reference processes (*C Scherf, K Börner, B Leitner-Mai & B Spanner-Ulmer, Germany*)

Refinement of Fitts's law for large touch screens: age-differentiated analysis of the motion angle in bivariate pointing tasks (*J Bützler, S Vetter, N Jochems & CM Schlick, Germany*)

9:00 – 10:15 (4) HUMAN FACTORS IN AGRICULTURE

Physical workload in organic agriculture (*R Abrahão, M Tereso & I Ribeiro, Brazil*)

Challenges of organic agriculture (*SFB Gemma, MJ-A Tereso & RF Abrahão, Brazil*)

Good practices in agriculture to reduce musculoskeletal disorders (*V Hermans, R Motmans, D O'Neill, P Lundqvist & D Roman-Liu, Belögium, UK and Poland*)

The challenges of implementing ergonomics aids for sheep shearers (*S Zschernack, M Göbel, NA Ndaki, South Africa*)

A method for analysis of the work of family farmers to improve their role as pilots of development projects at their production units (*UB Montedo, Brazil*)

10:15 – 10:45 TEA/COFFEE BREAK

10:45 – 12:15 (1) HUMAN FACTORS METHODS

Timeless times and placeless spaces – telecommuting systems designs from a sociotechnical perspective (*G Van Beek & G Van Hootegem, Belgium*)

Visualizing disaster attitudes from semantic mining of natural disasters narratives and experiences (*HM Khalid, Malaysia*)

Case study research: an example to study the tele-ICU (*P Hoonakker, P Carayon, A Khunlertkit, K Mcguire and D Wiegmann, USA*)

If functions were to speak – reliability and validity assessments of self reported quality of working life scales (*G Van Beek and G Van Hootegem, Belgium*)

Development and evaluation of a new questionnaire for rating of cognitive failures at work (*T Allahyari, N Hassanzadeh Rangji, Y Khosravi and Z Farid, Iran*)

Objective measures of cognitive workload: heart rate variability and eye movements (*S Skelton, South Africa*)

10:45 – 12:15 (2) RISK MANAGEMENT

Application of OCRA method in the ergonomical evaluation of risk factors of some jobs in Teheran prison (*A Jalalii, Iran*)

Ergonomic analysis of a caving rescue scheme: contributions to collective coordination (*A Landry, C Casse & D Ruffier-Monet, France*)

Risk factors, clinical features and outcome of treatment of work related musculoskeletal disorders in on-site clinics in Indian IT companies (*D Sharan, R Rameshkumar & PS Ajeesh, India*)

Organization of large-scale ergonomics risk assessments in industry – practical challenges, experiences and lessons learnt (*M Göbel, MC Mattison & NS Ngcamu, South Africa*)

Tuesday 5 April

Combining ergonomics and psychology for increasing effectiveness of proactive camera surveillance (*C Schilder & M Lousberg, Netherlands*)

Development of a mobile outdoor augmented reality system for enhanced situation awareness (*JA Neuhöfer & T Alexander, Germany*)

10:45 – 12:15 (3) WORK DESIGN IN HEALTH CARE

Organized by G Paul (Australia)

The impact of interruptions during clinical activities in the emergency department
(*G Pravettoni, C Lucchiari, A Gorini & G Vago, Italy*)

Time estimation of various hospital tasks by nurses and the effect of the strain level on the perception of time duration (*EM Burford & S Zschoernack, South Africa*)

Identification of task characteristics to categorise the workload of medical personnel in the hospital (*AB Elliott & S Zschoernack, South Africa*)

“Medical Service Systems” – An approach for the sustainable process orientation in health care (*R Hensel, M Esche, S Krause, D Bartel & B Spanner-Ulmer, Germany*)

Assessing the effectiveness of hospital bed movers for reducing physiological strain and muscle activation (*N Daniell, S Merrett, G Cottrell, H Galindo & G Paul, Australia*)

Improving posture and decreasing back pain with novel shoe insoles
(*N Daniell, S Merrett, P Gall, D Thewlis, C Bishop & G Paul, Australia*)

10:45 – 12:15 (4) HUMAN FACTORS OF PHYSICAL TASKS

Assessment approach for analysis of whole body action forces at assembly-specific workplaces in industry (*J Wakula, K Schaub, K Berg, R Bruder, U Glitsch & R Ellegast, Germany*)

Assessment of dependence between subjective and objective hand force data from an epidemiological study (*DA Coelho, C Harris-Adamson, TM Lima, I Janowitz and DM Rempel, Portugal and USA*)

Trunk motion characteristics and risk of injury during pushing and pulling tasks
(*A Todd, South Africa*)

The perception of pain and discomfort during load carriage on the head and back in Xhosa females (*S Davies, R Lloyd, B Parr & C Cooke, South Africa*)

Development of cross-cultural ergonomic guidelines for loading tasks
(*B Anderson, C Kim & T Smith-Jackson, USA*)

Relationship between job-related performance and physical fitness at Istanbul Firefighting Department (*B Arslanoglu, F Camliguney & A Pehlivan, Turkey*)

12:15 – 13:15 LUNCH BREAK

13:15 – 13:45 KEYNOTE

Ergonomics – a fundamental means to assist IDCs achieve sustainability
(*PA Scott, South Africa*)

Tuesday 5 April

13:45 – 15:00 (1) HUMAN FACTORS OF KNOWLEDGE WORK AND TEACHING

The challenges for human factors in knowledge work (*C Ipsen, N Møller & P L Jensen, Denmark*)

New challenging of XXI century's education (*V Kamyshyn & O Burov, Ukraine*)

Creative work environments for knowledge workers (*J Dul, Netherlands*)

The role of experiencing the work process in ergonomics teaching and learning in higher education (*S Zschoernack, South Africa*)

IDC's and education (*LJH Schulze, USA*)

13:45 – 15:00 (2) SUBJECTIVE AND AFFECTIVE HUMAN FACTORS

Aggression accounted: costs of aggressive behaviour and violence at work; benefits of preventive measures (*E Koningsveld, Netherlands*)

Emotions and leadership: reasons and impact of emotions in organizational context (*M Siebert-Adzic, Germany*)

Moving from participation to top down approach, a Scandinavian experience (*EC Lönnroth, Sweden*)

Coping's mediating effect on psychological well-being: testing the buffering hypothesis in a sample of police officers (*GJ Louw, South Africa*)

Psychosocial risks: when subjectivity breaks into the organization (*F Hubault & L Sznelwar, France and Brazil*)

13:45 – 15:00 (3) WORK ANALYSIS

Challenges of assessing the psycho-physiological effects of working at night (*J P Davy, M Göbel & W Lombard, South Africa*)

A study of ergonomic risk factor associated with sewing operation in garment industries in Tamilnadu (*S Chandrleka, M Arularasu & P Sivaprakash, India*)

Ergonomic evaluation of welding workplace (*SO Ismaila, OG Akanbi, OI Daniel, AI Musa & HO Sanusi, Nigeria*)

Ergonomics study of the activity of washing cars (*CMD Nienkotter, JR Mateus Junior, RM Souza & AC Bornia, Brazil*)

Work accident and occupational disease at Santos seaport (*M de F Queiroz, FMG Vezzà, R Machin, Brazil*)

13:45 – 15:00 (4) MANAGEMENT OF ENVIRONMENTAL STRESSORS

Diagnosis of disease associated with RSI workers in the cold storage room in the metropolitan region of Curitiba (*RM Wiczik & AA de Paula Xavier, Brazil*)

Management of outdoor heat stress – reducing exposure to solar heat radiation (*U Reischl and R Goonetilleke, USA*)

Communication in noisy environment: technical perspectives for an ageing workforce (*J Voix, Canada*)

A qualitative (pilot) assessment of the whole body vibration to which tractor drivers operating in the Ethekewini Municipal District are being exposed (*S Chester, South Africa*)

Tuesday 5 April

Modelling of environmental factors toward discrete human performance

(AR Ismail, BM Dero2, MYM Yusof, MHM Haniff, EH Sukadarin, ANN Kamarar, Malaysia)

15:00 – 15:30 TEA/COFFEE BREAK

15:30 – 16:15 KEYNOTE

ODAM's contribution to a better world: macroergonomic links to our future

(A Imada, USA)

16:30 – 18:00 HISTORIC TOWN TOUR (OPTIONAL)

see page 18 for details

19:00 – 22:00+ GALA DINNER

Wednesday 6 April

8:30 – 10:00 (1) HUMAN FACTORS IN INDUSTRIAL ENGINEERING

Organised by CM Schlick & B Spanner-Ulmer (Germany)

A systematic approach for human-oriented industrial engineering in the context of enterprises internationalization (*R Hensel & B Spanner-Ulmer, Germany*)

Influence of task descriptions on learning sensorimotor tasks
(*T Jeske, K Hasenau & CM Schlick, Germany*)

The human factor in DFM (*G Paul, Australia*)

Modeling muscle strain induced by movements for enhancing digital human models
(*J Mühlstedt & B Spanner-Ulmer, Germany*)

Management audit to implement effective ergonomics in manufacturing companies
(*M Bierwirth, R Bruder & K Schaub, Germany*)

Transferability of industrial engineering methods to the healthcare sector
(*K Edwards, AP Nielsen & P Hasle, Denmark*)

8:30 – 10:00 (2) HEALTH CARE MANAGEMENT

Workload management in Intensive care units (*P Carayon, USA*)

Training for sacrifice decision-making: a debative methodology
(*R Amalberti, P Falzon & A Nascimento, France*)

Measuring trust in sociotechnical health systems: the relationship between trust in personnel and technological subsystems (*E Montague, USA*)

Group communication climate and burnout among nursing staff
(*C Korunka & B Kubicek, Austria*)

Cultural diversity challenges for sustainable work relations in a South African government hospital (*N Barkhuizen & N Carrim, South Africa*)

Reduction of seclusion in a rural mental health inpatient unit – a case study
(*C Waring, Australia*)

8:30 – 10:00 (3) DON'T REACH FOR YOUR GUN! SPECIAL SESSION ON ORGANISATIONAL CULTURE IN THE MINING INDUSTRY By A Shaw, V Blewett & S Schutte (Australia/South Africa)

While the terms 'safety culture', 'safety climate' and 'organisational culture' are widely used, there is considerable debate in the literature about their meaning and use. Despite this ambiguity and debate, 'safety' culture is increasingly used as an explanation for health and safety performance as if it was unproblematic. At the same time, there is good evidence that the factors which differentiate organisations that provide safe and healthy working environments from those with less robust risk control relate more to the values, beliefs and norms of the organisational behaviour than the traditional OHS measures such as formal Safety Management Systems. Recent work in the South African and Australian mining industries provides solid empirical evidence of the cultural factors most closely associated with good OHS management. Both the *Changing Minds, Changing Mines* project in South

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Africa and the *Digging Deeper* project in Australia identified organisational justice and mindfulness, amongst others, as key features of the organisations that demonstrated more effective risk control.

What is organisational culture? How can 'culture' cause injury and illness? What does it mean to 'measure' culture? Is it an oxymoron to talk about a planned process of organisational culture change? This special session will explore these questions, using our recent work in the mining industries of South Africa and Australia as a starting point for exploring the experiences of participants.

10:00 – 10:30 TEA/COFFEE BREAK

10:30 – 12:00 (1) TOOLS AND METHODS FOR PARTICIPATORY DESIGN

A framework for integrating human factors into work-system design

(P Neumann & J Village, Canada)

Methods of the design process: an inventory *(BNE Kok, P Vink & K Slegers, Netherlands)*

Boundary objects in participatory ergonomics design processes

(O Broberg, V Andersen & R Seim, Denmark)

Research for the missing link in health care: from bed to bench and back

(M S Bogner, UK)

Using participatory ergonomics and cognitive work analysis to redesign computer task exposures in radiologists *(M Robertson, P Boiselle, R Eisenberg, D Siegal, CH Chang, M Dainoff, AM Garabet & J Dennerlein, USA)*

By moving from place to place, a space is also altered: the continuation of the ergonomics intervention and the architectural design process during a "moving phase" *(IS Castro, F de Paula Antunes Lima & F Jose de Castro Moura Duarte, Brazil)*

10:30 – 12:00 (2) HUMAN FATIGUE

Job rotation design from an ergonomics perspective *(NS Ngcamu & M Göbel, South Africa)*

A comparison between nap and booster break interventions to cope with fatigue during night shift work *(JP Davy, M Göbel & WR Lombard, South Africa)*

The effects of sustained visual workload on performance and on psycho-physiological responses *(C Chaplin & M Göbel, South Africa)*

The effects of task complexity and learning on the fatiguing processes of decision making *(M Sunshine & S Zschoernack, South Africa)*

Changes of saccade latency and precision performance during simulated eight hour night shifts *(JK Robertson & S Zschoernack, South Africa)*

The effects self-selected rest strategies on physiological, physical and perceptual responses *(J Köhne & MC Mattison, South Africa)*

10:30 – 12:00 (3) ERGONOMICS AND SOCIETY

The packages related to the social responsibility in Brazil and the principles of the earth charter *(E Novaes, Brazil)*

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A comparative study on regional economic development between different countries from macroergonomic viewpoints (*EMY Wang & J S-L Tung, Taiwan*)

Building investment process and eco-ergonomics (*J Charytonowicz, Poland*)

Organization development in a context of rapid industrialization – agro-forestry villages in Mozambique (*JK Walter, PR Ferrara, JH Juma, B Paul, DA Coelho and F Couvinhas, Mozambique, Italy, USA, Portugal*)

Systems design for sustainable development applied to an IDC context – a case study of the peripheries of Mindelo, São Vicente Island, Cape Verde (*AF Couvinhas, A Coelho, P Tamborrini and L Bistagnino, Italy, Mozambique & Portugal*)

Developing ergonomics in Africa (*D Kennedy, South Africa*)

10:30 – 12:00 (4) INTERACTIVE SESSION ON ON-SITE PREVENTION AND TREATMENT PROGRAMME FOR WORK RELATED MUSCULO-SKELETAL DISORDERS IN IT COMPANIES

Facilitated by **D Sharan (India)**

Work related musculoskeletal disorders (WRMSDs) create a significant financial burden to both employer and employee that includes both the cost of treatment and lost work time. The advantages of on-site clinics includes convenience of employees in saving time, earlier reporting of symptoms, better follow up regarding recovery and work, on-site workstation assessment for risk factor identification and modifications, monitoring posture, breaks and exercises, more effective coordination with members of Human Resources, Facilities, Health and Safety team and improved awareness levels regarding Ergonomics among Management and Employees. This symposium will discuss on-site prevention and treatment programme for WRMSD's, based on the extensive experience of the presenters in successfully running several such programmes catering to over 2,000,000 employees daily for nearly a decade. The symposium will be interactive and will use several real case studies.

Computer workstation assessment and documentation of ergonomic and environmental risk factors (*PS Ajeesh, D Sharan, RR Kumar & MM Kumar, India*)

Assessment of personal and psychosocial factors in workers and diagnosing WRMSD (*R Rameshkumar, D Sharan, PS Ajeesh & M Mathankumar, India*)

On-site fitness programme to prevent work related musculoskeletal disorders (*MM Kumar, D Sharan, PS Ajeesh & RR Kumar, India*)

Treatment and prognosis of WRMSD (*D Sharan, Ajeesh P S, R Rameshkumar R & M Mathankumar, India*)

How to calculate the return on investment of the on-site clinic (*D Sharan, P Parijat, PS Ajeesh, R Rameshkumar & M Mathankumar, India*)

12:00 – 13:00 LUNCH BREAK

13:00 – 14:15 (1) HUMAN FACTORS CONCEPTS

Do we need a new discussion about the quality of work? (*KJ Zink, Germany*)

Managing continuous improvement process as an organizational task in course of a century (*T Maschek, K Khazraei, S Hempten & J Deuse, Germany*)

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Trans-generational and trans-cultural human factors (*A Macris & O Paez, USA*)

Organizational social capital – the missing link between human performance and well-being?
(*P Hasle, Denmark*)

Designing work systems for sustainability (*S Heinen, M Frenz, R Djaloeis & C Schlick, Germany*)

13:00 – 14:15 (2) HUMAN FACTORS IN THE MINING INDUSTRY

Organised by **S Schutte (South Africa)**

Safety violations in mining: The role of human factors

(*D Cronje, K Mostert, I Rothmann & I Rothmann Jnr, South Africa*)

Current ergonomics needs in the South African mining industry (*C Badenhorst, South Africa*)

Women in mining: Is there a need to maximise the fit between the person and the work environment? (*S Schutte & T Hofmann, South Africa*)

An investigation of workplace stress in platinum miners using subjective and objective measures (*A Edwards, A Formanowicz & L Milanzi, South Africa*)

13:00 – 14:15 (3) HEALTH AND WELL-BEING OF OFFICE WORKERS

Cognitive control demands and self-control demands in office work: does office design matter? (*RS Bridger & K Brasher, UK*)

Effect of static posture on incidence of musculoskeletal problems among VDT operators
(*NA Charpe & V Kaushik, India*)

The effects of different cognitive workloads on perceptions of muscular discomfort
(*J Korte & MC Mattison, South Africa*)

Does the work style contribute to musculoskeletal symptoms in Indian computer professionals? (*D Sharan, PS Ajeesh, R Rameshkumar, J Jeena & M Mathankumar, India*)

A practitioner's approach to prevention of musculoskeletal disorders in office work – a case study (*T M Lima & DA Coelho, Portugal*)

13:00 – 14:15 (4) RELIABILITY MANAGEMENT

The boundaries of delimitation of human reliability in complex systems under the ergonomics of point of view (*L Sznelwar & G Fonseca, Brazil*)

Ergonomics approach for human error prevention in the pharmacist process
(*C-W Lu, W-J Chang, S-Y Tsai and C-L Huang & J-P Chen, China*)

Human factors in accident investigations in a South African railway industry
(*J Hutchings, South Africa*)

Achieving a safety culture in aviation (*M Weingartz, South Africa*)

A method proposition to evaluation training aircrafts reliability, performance and security for visual flights – VFR (Visual Flight Rules) (*ET Martins & MM Soares, Brazil*)

14:15 – 14:45 CLOSING CEREMONY AND OUTLOOK TO ODAM 2014

15:00 – 20:00 SAFARI PARK VISIT (OPTIONAL)

See Page 18 for details

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Registration for Optional Tours and Events

TUESDAY 5 APRIL 16:30 – 18:00

Historic Town Tour

This tour is at no cost, registration will be done at the conference.

WEDNESDAY 6 APRIL 15:00 – 21:30

Pumba Safari Park Tour (<http://www.pumbagamereverve.co.za>)

Itinerary:

- 15:00 Travel from Grahamstown
- 16:00 Safari Drive (first part) departs from Pumba Day Safari
- 18:00 Arrive at the lodge for dinner and beverages
- 19:00 Departure for second half of safari drive
- 20:00-20:30 Arrival at the Day Safari and departure to Grahamstown

What to expect:

- Safari drive with a qualified and informative ranger
- 5 star cuisine
- Home to the big five (Lion, Leopard, Elephant, Buffalo and Rhino), hopefully the guests will get to see them all.
- Lots of other wild animals species and bird life.

Cost: R 740

Reservations: Tony King (Email: tony@suregotravel.co.za, Tel 0027-46 622 2235 - Fax 0027-86 621 7725, Website www.suregotravel.co.za), Booking ref. 369020

The number of participants is limited! Bookings are taken on a first come first serve basis.

Transport from Pumba to Port Elizabeth can be arranged on an individual base.

THURSDAY 7 APRIL 10:00 – 13:00

Visit to Volkswagen Automotive plant in Uitenhage

There is an opportunity to visit the South African Production site of Volkswagen in Uitenhage (about 90 min from Grahamstown and 30 min from Port Elizabeth). Here the Volkswagen Polo is produced, from press-shop to final assembly. Further this site contains an engine plant.

Travel from Grahamstown can be arranged at a cost basis (departure 8:00, cost appr R250 one way) with option to return to Grahamstown or to Port Elizabeth (arrival at about 14:00). Participants travel on their own as well (meeting at 10:00 at the visitors parking of the Volkswagen plant).

Reservations: Contact June McDougall (Email: hke@ru.ac.za, Phone 0027-46-6038468).

The number of participants is limited! Bookings are taken on a first come first serve basis.

Alternative visit: Mercedes Benz in East London

A similar visit can be arranged for the Mercedes Benz plant in East London (about 90 min travel from Grahamstown, here the current C-Class models are produced), if enough participants express interest. For reservation see above.