



**iea 2012**

**Recife, Brazil**

18<sup>th</sup> World Congress on Ergonomics | February 12-16 2012 | Recife, Brazil

**Symposiums (updated January, 5<sup>th</sup>)**

**Date: 13/02**

**Room: 13**

**Time: 1:00 – 2:30pm**

**S01 Warning Symposium Session 1: Technology-Based Warnings and Auditory Alert Characteristics**

**Christopher B. Mayhorn (chair) and Michael S. Wogalter (co-chair)**

Training Time Estimation to Improve Alarm Reactions

James P. Bliss, Ph.D.a,\* , Rachel Liebmana and Eric Chanceya

aPsychology Department, Old Dominion University, 5115 Hampton Boulevard, Norfolk, VA, USA

Multimodal Urgency Coding: Auditory, Visual, and Tactile Parameters and Their Impact on Perceived Urgency

Carryl L. Baldwin, Jesse L. Eisert, Andre Garcia, Bridget Lewis, Stephanie M. Pratt, and Christian Gonzalez

Department of Psychology, George Mason University, United States of America

Selection of a voice for a speech signal for personalized warnings: the effect of speaker's gender and voice pitch

Sheron Machadoa, Emília Duarteb,c, Júlia Telesd,c, Lara Reisb and Francisco Rebeloa,c

aTechnical University of Lisbon, Portugal bInstitute of Arts, Design and Marketing, Portugal

cTechnical University of LisbonPortugal dTechnical University of Lisbon, Portugal

Auditory Backup Alarms: Distance-at-First-Detection via In-Situ Experimentation on Alarm Design and Hearing Protection Effects

Khaled Alali<sup>1</sup> & John Casali<sup>2</sup>

<sup>1</sup>Kuwait University, <sup>2</sup>Virginia Tech

The Impact of Emotions and Predominant Emotion Regulation Technique on Driving Performance.

G. M. Hancock<sup>1</sup>, P. A. Hancock<sup>1</sup> and C.M. Janelle<sup>1</sup>

<sup>1</sup>University of Central Florida, United States

Virtual Reality Based Therapy for Post Operative Rehabilitation of Children with Cerebral Palsy  
Deepak Sharan<sup>1</sup>, Ajeesh PS<sup>1</sup>, Rameshkumar R<sup>1</sup>, Mathankumar M<sup>1</sup>, Jospin Paulina R<sup>1</sup>, Manjula M<sup>1</sup>

<sup>1</sup>RECOUP Neuromusculoskeletal Rehabilitation Centre, India

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**S02 Warning Symposium Session 2: Litigation and Warnings: The Role of an Expert Witness**  
**Michael S. Wogalter (chair) and Christopher B. Mayhorn (co-chair)**

Warnings on Defibrillators: A Case Study  
Vicki R. Lewis and Rollin J. Fairbanks  
MedStar Institute for Innovation, Washington, DC, USA

Ratings Checklist for Warnings: A Prototype Tool to Aid Experts in the Adequacy Evaluation of Proposed or Existing Warnings  
David R. Lenorovitz<sup>a</sup>, S. David Leonard<sup>b</sup>, and Edward W. Karnes<sup>c</sup>  
<sup>a</sup>LENPRO Services, Inc., USA <sup>b</sup>Department of Psychology, University of Georgia, Athens, USA  
<sup>c</sup>Edward W. Karnes, LLC, USA

Tire Aging: A Human Factors Analysis of Failure to Warn and Inform  
Michael S. Wogalter<sup>a</sup>, and Kenneth R. Laughery<sup>b</sup>  
<sup>a</sup>Psychology Department, North Carolina State University, USA <sup>b</sup>Psychology Department, Rice University, USA

Ride-on lawnmowers warnings: Slope measurements and safety-by-separation  
Edward W. Karnes<sup>a</sup>, S. David Leonard<sup>b</sup>, David R. Lenorovitz<sup>c</sup>  
<sup>a</sup>Edward W. Karnes, LLC., USA <sup>b</sup>Department of Psychology, University of Georgia, USA <sup>c</sup>LENPRO Services, Inc., USA

What should I do? – A study about conflicting and ambiguous warning messages  
Emília Duarte<sup>a,b</sup>, Francisco Rebelo<sup>b,c</sup>, Júlia Teles<sup>c,d</sup> and Paulo Noriega<sup>b,c</sup>  
<sup>a</sup>Institute of Arts, Design and Marketing, Portugal <sup>b</sup>Technical University of Lisbon, Portugal  
<sup>c</sup>Technical University of Lisbon, Portugal <sup>d</sup>Technical University of Lisbon, Portugal

User Prompts and Guidance Techniques to Facilitate the Resolution of Medical Device Alarms  
Jonathon Kendler & Michael Wiklund

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**S03 ErgoDesignForum: Ergonomics and Design Cooperation, fear, attraction, temptation 1**  
Chair: Pierre-Henri Dejean

Users/consumers differences regarding Ergonomics and Design theory and practice  
Pierre-Henri Dejean and Peter Wagstaff  
Université de Technologie de Compiègne, Centre of Resources and Innovation Mobility and Handicap, Vélizy, France

Designer could also be ergonomist ?  
Steve Vezeau

What dialogue tools could help ergonomist/designer/manager cooperation?  
Jairo Drummond Camara , Fernando Oneto

Aesthetics, what issues to ergonomics and design ?  
Claudia Mourthè

Is it necessary to include lectures about ergonomist designers cooperation  
Luz Saenz

EQUID IEA project to certify design process including ergonomics approached  
Ralph Bruder

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#### **S04 Ergonomics and Education**

Francisco Nunes (chair) and Marcelo Soares (co-chair)

Ergonomics Content in the Physical Education Teacher's Guide in Rwanda  
Manobhram Nellutla<sup>a</sup> , Hetal Patel<sup>a</sup> , Aline Kabanda<sup>a</sup> and Assuman Nuhu<sup>a</sup>  
<sup>a</sup>Department of Physiotherapy, Kigali Health Institute, Rwanda.

International English and Ergonomics: a romance in the making?  
Roddy Kay  
Cambridge ESOL Centre BR119, Brazil

Physical and postural aspects of teachers during work activity  
Nilson Rogério da Silva<sup>a\*</sup> , Maria Amélia Almeida<sup>b</sup>  
<sup>a</sup>Paulista State University, Brazil <sup>b</sup>Federal University of São Carlos, Brazil

The deaf and the classroom design: a contribution of the built environmental ergonomics for the accessibility  
Laura Bezerra Martins<sup>a</sup> and Denise Maria Simões Freire Gaudiot<sup>b</sup>  
<sup>a</sup>Federal University of Pernambuco, Brazil. <sup>b</sup>Federal University of Pernambuco, Brazil.

Cross-disciplinary Problem-solving Workshop: a pedagogical approach to anticipate ergonomist engineering design collaboration  
Elisabeth Brunier, Michel Le Chapellier, Pierre Henri Dejean  
Compiegne University of Technology (UTC), France

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## **S05 Ergonomics and Education**

Francisco Nunes (chair) and Marcelo Soares (co-chair)

Integrating Community Ergonomics with Educational Ergonomics – Designing Community Systems to Support Classroom Learning

Thomas J. Smith

University of Minnesota, USA

Ergonomic analysis for elementary school teachers. Preliminary trial for elementary schools in the Province of Buenos Aires

Gabriela Cuenca<sup>a</sup>, and Patricio Nussold<sup>b</sup>

<sup>a</sup>Department of Industrial Engineering, National Technological University, Argentina. <sup>b</sup>University of Buenos Aires, Argentina.

Analysis of environmental factors affecting the quality of teacher's life of public schools from Umuarama

Bruna Evellyn Costa<sup>a</sup>, Nicéia Luzia Selete Silva<sup>b</sup>

<sup>a</sup>Paranaense University, UNIPAR <sup>b</sup>Paranaense University, UNIPAR

**Effectiveness of classroom ergonomic training for VDT workers in knowledge sector!**

**Jajoo, B | B R, D**

Ergonomics and Education as a Strategy for Sustainable Development in Business

Dierci Marcio Silveira (1), Erico Lourenço Brandão (2). (não informa instituição do 2)

(1)Industrial Systems, Petroleum, Gas and Energy Laboratory – LABSE

Fluminense Federal University – UFF

Burnout syndrome, working conditions, and health: a reality among public high school teachers in Brazil

Ângela Maria C. Santana<sup>a</sup>, Dione De Marchi<sup>a</sup>, Luiz C. G. Junior<sup>a</sup>, Yassana M. Girondoli<sup>a</sup>, Andrés Chiappeta<sup>a</sup>

<sup>a</sup>Nutrition and Health Department, Federal University of Viçosa - Brazil

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## **S06 Night, Shiftwork and Health effects**

Frida Marina Fischer (chair)

Irregular working times and metabolic disorders among truck drivers: a review.

Elaine C Marqueze<sup>a</sup>, Melissa A Ulhôa<sup>a</sup>, Claudia R C Moreno<sup>a</sup>

<sup>a</sup>Environmental Health Department, University of São Paulo, Brazil.

Need for recovery from work and sleep-related complaints among nursing professionals

Aline Silva-Costa<sup>a</sup>, Rosane Harter Griep<sup>a</sup>, Frida Marina Fischer<sup>b</sup>, Lúcia Rotenberg<sup>a</sup>

<sup>a</sup>FIOCRUZ, Brazil <sup>b</sup>University of São Paulo, Brazil.

Morbidity among nursing personnel and its association with working conditions and work organization

Vasconcelos S<sup>a</sup>, Marqueze E<sup>a</sup>, Gonçalves L<sup>a</sup>, Lemos L<sup>a</sup>, Araújo L<sup>a</sup>, Fischer FM<sup>a</sup>, Moreno CRC<sup>a</sup>  
<sup>a</sup>Environmental Health Department, University of São Paulo, Brazil.

Musculoskeletal reported symptoms among aircraft assembly workers: a multifactorial approach  
Fabrício Augusto Menegon<sup>a</sup> Frida Marina Fischer<sup>b</sup>

<sup>a</sup>Federal University of Itajubá, Brazil. <sup>b</sup>Department of Environmental Health, University of São Paulo, Brazil.

Work ability among hospital food service professionals: multiple associated variables require comprehensive intervention

Frida Marina Fischer<sup>a</sup>; Maria Carmen Martinez<sup>b</sup>

<sup>a</sup>Environmental Health Department, University of São Paulo, Brazil. <sup>b</sup>Hospital Samaritano de São Paulo, Brazil

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### **S07 Human Factors and Ergonomics in the Building and Construction Industry 1**

Peter Hoonakker (chair) & Henk van der Molen (co-chair)

Relationship between construction workers' musculoskeletal disorders and occupational health service activities

Savinainen Minna<sup>a</sup> and Nyberg Mika<sup>a</sup>

<sup>a</sup> Finnish Institute of Occupational Health, Finland

Flow Diagram Analysis of Electrical Fatalities in Construction Industry

Chia-Fen Chi<sup>a</sup>, Yuan-Yuan Lin<sup>a</sup> and Mohamad Ikhwan<sup>a</sup>

<sup>a</sup> Department of Industrial Management, National Taiwan University of Science and Technology, Taiwan

Predicting long-term absenteeism from work in construction industry: A longitudinal study

Peter Hoonakker<sup>a</sup> and Cor van Duivenbooden<sup>b</sup>

<sup>a</sup>University of Wisconsin-Madison, USA <sup>b</sup>Arbouw, Dutch National Institute for Safety and Health in the Construction Industry, The Netherlands

The evaluation of team lifting on physical work demands and workload in ironworkers

Henk F. van der Molen<sup>a,b</sup>, Steven Visser<sup>a</sup>, P. Paul F.M. Kuijter<sup>a</sup>, Gert Faber<sup>c,d,e</sup>, Marco J.M.

Hoozemans<sup>c</sup>, Jaap H. van Dieën<sup>c</sup>, Monique H.W. Frings-Dresen<sup>a</sup>

<sup>a</sup>University of Amsterdam, The Netherlands <sup>b</sup>Arbouw, The Netherlands <sup>c</sup>Research Institute MOVE, VU University, The Netherlands <sup>d</sup>Department of Environmental Health, Harvard School of Public Health, USA <sup>e</sup>Liberty Mutual Research Institute for Safety, USA

Assessment method of accessibility conditions: how to make public buildings accessible?

Isabela Fernandes Andrade<sup>a</sup> e Vera Helena Moro Bins Ely<sup>a</sup>

<sup>a</sup>Federal University of Santa Catarina, Brazil

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## **S08 Human Factors and Ergonomics in the Building and Construction Industry 2**

Chairs: Henk van der Molen and/or Paul Kuijer

Ergonomic Analysis of the Use of Open-Plan Offices in Brazilian Public Sector Offices

Ana Paula Lima Costa<sup>a</sup>, Vilma Villarouco<sup>b</sup>

<sup>a</sup>UFPE, Brazil <sup>b</sup>UFPE, Post graduate Program on Design, Brazil

Study and analysis of occupational risk factors for ergonomic design of construction worksystems

Ratri Parida<sup>a</sup>, Pradip Kumar Ray<sup>b</sup>

<sup>a</sup>Department of Industrial Engineering and Management, Indian Institute of Technology Kharagpur, India <sup>b</sup>Department of Industrial Engineering and Management, Indian Institute of Technology Kharagpur, India

Evidence-based exposure criteria for work-related musculoskeletal disorders as a tool to assess physical job demands

P. Paul F.M. Kuijer<sup>a</sup>, Henk F. van der Molen<sup>a,b</sup>, Monique H.W. Frings-Dresen<sup>a</sup>

<sup>a</sup>Netherlands Center for Occupational Diseases, University of Amsterdam, The Netherlands

<sup>b</sup>Arbouw, The Netherlands

Construction and application of an indicator system to assess the ergonomic performance of large and medium-sized construction companies

Isabela Xavier Barbalho Bezerra<sup>a</sup>, Ricardo José Matos de Carvalho<sup>b</sup>

<sup>a</sup> UFRN, Brazil. <sup>b</sup> UFRN, Brazil.

Outcomes of a Revised Apprentice Carpenter Fall Prevention Training Curriculum

Bradley Evanoff<sup>a</sup>, Vicki Kaskutas<sup>a</sup>, Ann Marie Dale<sup>a</sup>, John Gaal<sup>b</sup>, Mark Fuchs<sup>b</sup>, and Hester Lipscomb<sup>c</sup>

<sup>a</sup>Department of Medicine, Washington University, USA <sup>b</sup>Carpenters' District Council of Greater St. Louis and Vicinity, Carpenters Joint Apprenticeship Program, USA <sup>c</sup>Division of Occupational and Environmental Medicine, Duke University, USA

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## **S09 Human Factors and Ergonomics in the Building and Construction Industry 3**

Chairs: Vera Bins Ely and/or Paul Kuijer

Casting an ergonomic eye on university libraries

Nicole Ferrer<sup>a</sup> and Vilma Villarouco<sup>b</sup>

<sup>a</sup> UFPE, Pernambuco, Brazil <sup>b</sup>Federal University of Pernambuco, Brazil

The impact of a 'green' building on employees' physical and psychological wellbeing

Andrew Thatcher<sup>a</sup> and Karen Milner<sup>a</sup>

<sup>a</sup>Psychology Department, School of Human & Community Development, University of the Witwatersrand, South Africa

Using Process Evaluation to Determine Effectiveness of Participatory Ergonomics Training Interventions in Construction

Ann Marie Dale<sup>a\*</sup>, Lisa Jaegers<sup>a,b</sup>, Brian Buchholz<sup>c</sup>, Laurie Welch<sup>d</sup>, and Bradley A. Evanoff<sup>a</sup>,

<sup>a</sup>Department of Medicine, Washington University, USA <sup>b</sup>School of Public Health, Saint Louis University, USA <sup>c</sup>University of Massachusetts Lowell, USA <sup>d</sup> The Center for Construction Research and Training CPWR, USA

Ergonomic aspects to be considered in planning public spaces destined for elderly people.

Marcella Viana Portela de Oliveira Cunha<sup>a</sup>, Angelina Dias Leão Costa<sup>b</sup> and Mariama da Costa Ireland<sup>c</sup>

<sup>a</sup>Federal University of Paraíba, UFPB. <sup>b</sup>Federal University of Paraíba, Post graduate Course in Architecture and Urbanism, Thermal Comfort Laboratory <sup>c</sup>Federal University of Paraíba, UFPB.

Anthropometric Evaluation of Internal Horizontal Circulation Environments

Sadi Seabra<sup>a</sup> and Bruno Barros<sup>b</sup>

<sup>a</sup> State Technical School Agamenon Magalhães, Brazil. <sup>b</sup>Federal University of Pernambuco – Design Core, Brazil

Accessibility for all: going from theory to practice

Isabela ANDRADE<sup>a</sup>, Vanessa DORNELES<sup>a</sup> e Vera Helena Moro BINS ELY<sup>a</sup>

<sup>a</sup> PósARQ, Course of Architecture and Urbanism, UFSC

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### **S10 Systems Ergonomics**

John Wilson (chair)

**Dynamic systems approach as basis for human oriented design**

**Ralph Bruder**

Sociotechnical systems approach to healthcare quality and patient safety

Pascale Carayon<sup>a</sup>

<sup>a</sup> Department of Industrial and Systems Engineering, University of Wisconsin-Madison, USA

Performance-based management and quality of work: an empirical assessment

Pierre Falzon\*, Adelaide Nascimento\*, Corinne Gaudart\*\*, Cécile Piney\*, Marie-Anne Dujarier\*\*, Jean-François Germe\*\*\*

\*National Conservatory of Arts and Crafts, France \*\*National Conservatory of Arts and Crafts, France \*\*\*National Conservatory of Arts and Crafts, France

Fundamentals of systems ergonomics

John R Wilson

University of Nottingham, UK

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### **S11 Ergonomics and design for sustainability**

Klaus J. Zink & Giuseppe Di Bucchianico (co-chairs)

Strategies and Arguments of Ergonomic Design for Sustainability

Antonio Marano<sup>a</sup>, Giuseppe Di Bucchianico<sup>a</sup> and Emilio Rossi<sup>a</sup>

<sup>a</sup>IDEA Department, University of Chieti-Pescara, Italy

Toward a Transdisciplinary Approach of Ergonomic Design for Sustainability

Giuseppe Di Bucchianico<sup>a</sup>, Antonio Marano<sup>a</sup> and Emilio Rossi<sup>a</sup>

<sup>a</sup>IDEA Department, University of Chieti-Pescara, Italy

Ergonomics and Sustainability in the design of everyday use products

Francesca Tosi

University of Florence, Italy

Sustainability and accessibility: the Design for All approach

Isabella Steffan<sup>a</sup>

<sup>a</sup>Studio Steffan - Design & Research – Italy

Ergonomics and design for sustainability in healthcare: ambient assisted living and the social-environmental impact of patients lifestyle

Giuseppe Andreoni<sup>a</sup>; Pelin Arslan<sup>b</sup>; Fiammetta Costa<sup>b</sup>; Sabrina Muschiato<sup>b</sup>; Maximiliano Romero<sup>c</sup>

<sup>a</sup>LyPhe: Laboratory for Physical Ergonomics, INDACO Department, Politecnico di Milano, via Durando 38/A, 20158, Milan, Italy.

<sup>b</sup>HCD: Health Care Design, INDACO Department, Politecnico di Milano, via ghislanzoni 24, 23900 Lecco, Italy.

<sup>c</sup>PhyCo: Physical Computing Lab, INDACO Department, Politecnico di Milano, via Durando 38/A, 20158, Milan, Italy.

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### **S12 Human Factors and Ergonomics for Organizational Sustainability**

Klaus J. Zink & Giuseppe Di Bucchianico (co-chairs)

Early variability in the conceptualisation of “sustainable development and human factors”

Andrew Thatcher

Psychology Department, University of the Witwatersrand, South Africa

Defining Elements of Sustainable Work Systems – a System-oriented Approach

Klaus Fischer<sup>a</sup> and Klaus J. Zink<sup>b</sup>

<sup>a, b</sup>University of Kaiserslautern, Germany

Ergonomics and sustainability – challenges from global supply chains

Hasle<sup>a</sup>, Peter and Jensen<sup>b</sup>, Per Langaa

<sup>a</sup>National Research Centre for the Working Environment, Denmark <sup>b</sup>Department of Management Engineering, Technical University of Denmark, Denmark

Shared Services Centers and work sustainability: which contributions from ergonomics?

Justine Arnoud, Pierre Falzon

National Conservatory of Arts and Crafts (CNAM), France

Ergonomic Principles and Tools for Best Interdisciplinary Psycho-Physical Stress Prevention

Dott. Luigi Dal Cason<sup>a</sup>

<sup>a</sup>Ecotarget Srl, Italy

Innovation in User-centered Skills and Performance Improvement for Sustainable Complex Service Systems

Waldemar Karwowski<sup>a, b</sup>, Tareq Z. Ahram<sup>a, b</sup>

<sup>a</sup>Institute for Advanced Systems Engineering, USA <sup>b</sup>Department of Industrial Engineering and Management Systems, University of Central Florida, USA

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**S13 Contribution for IEA/WHO toolkit for WMSDs prevention 1: General contributions for a IEA/WHO toolkit devoted to MSD prevention**

Chair: David Caple and Enrico Occhipinti

A Toolkit for MSDs prevention - WHO and IEA context

David C Caple

Past President of the International Ergonomics Association, Australia

Conceptual Framework for Development of a Toolkit for Prevention of Work-related Musculoskeletal Disorders

Wendy Macdonald

La Trobe University, Australia

IEA/WHO toolkit for WMSDs prevention: criteria and practical tools for a step by step approach.

Enrico Occhipinti<sup>a</sup>, Daniela Colombini<sup>b</sup>

<sup>a</sup>Foundation Policlinico Ca'Granda, Italy <sup>b</sup>Don Gnocchi Foundation, Italy

Categorizing Job Physical Exposures Using Simple Methods

Stephen Bao, Barbara Silverstein

Washington State Department of Labor and Industries, USA

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**S14 Contribution for IEA/WHO toolkit for WMSDs prevention 2: Experiences in using simple tools for biomechanical risk assessment in craftwork, small industries and difficult sectors with high task variability**

Chair: Daniela Colombini and Ruddy Facci

A simple tool for preliminary hazard identification and quick assessment in craftwork and small/medium enterprises (SME).

Colombini Daniela\*, Occhipinti E.\*\* , Di Leone G. \*\*\*

\*Don C. Gnocchi Foundation , Italy \*\*Policlinico Ca' Granda Foundation, Italy \*\*\*Prevention Department, National Health Unit, Italy

Hazard identification and pre-map with a simple specific tool: synthesis of application experience in handicrafts in various productive sectors.

Daniela Colombini\*, Enrico Occhipinti\*\* ,Raffaele Peluso\*\*\*, Loretta Montomoli\*\*\*\* ,Marco Placci\*

\*Don C. Gnocchi Foundation, Italy \*\*Policlinico Ca' Granda Foundation, Italy \*\*\*CESMEL, Italy \*\*\*\*University of Siena, Italy

Biomechanical overload in multiple tasks with weekly and annual cycle: practical experiences in the field of cleaning and packaging of fruit.

Daniela Colombini \*, E. Occhipinti \*\*

\*Don C. Gnocchi Foundation – Milan-Italy \*\*Policlinico Ca' Granda Foundation, Italy

Study of biomechanical overload in urban gardeners of Barcelona: application of analytical models for risk exposure evaluation in annual working cycle

Alvarez-Casado, Enrique<sup>a</sup>, Hernandez-Soto, Aquiles<sup>b</sup>, Tello, Sandoval<sup>b</sup> and Gual, Rosa<sup>a</sup>

<sup>a</sup>Department of Business Organization, Polytechnical University of Catalunya Spain. <sup>b</sup>Center for Applied Ergonomics, Spain

Application of the OCRA Method in the sugar cane harvest and its repercussion on the workers' health. Preliminary study.

Facci Ruddy, Marcatto Eduardo and Santino Edoardo

Escola OCRA Brasileira, Brazil

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**S15 Contribution for IEA/WHO toolkit for WMSDs prevention 3: Experiences in applying tools for managing MSD with special reference to HARM and KIM tools**

Chair: Tom Armstrong and Marjolein Douwes

**Developing the Ontario Toolbox for the Prevention of MSDs**  
**Richard Wells**

New risk assessment tools in The Netherlands

Heleen de Kraker and Marjolein Douwes

TNO, The Netherlands

New tools in Germany: Development and appliance of the first two KIM ("lifting, holding and carrying" and "pulling and pushing") and practical use of these methods

Ulf Steinberg

*Federal Institute for Occupational Safety and Health (BAuA), Division 3: Work and Health.*

Evaluation of objectivity, reliability and criterion validity of the Key Indicator Method for Manual Handling Operations (KIM-MHO), draft 2007

André Klußmann<sup>a,b</sup>, Hansjürgen Gebhardt<sup>a</sup>, Monika Rieger<sup>b</sup>, Falk Liebers<sup>c</sup>, Ulf Steinberg<sup>c</sup>

<sup>a</sup>Institute of Occupational Health Safety and Health, Germany <sup>b</sup>University Hospital of Tübingen, Germany <sup>c</sup>Federal Institute for Occupational Safety and Health, Germany

HARM overview and its application: some practical examples

Marjolein Douwes and Heleen de Kraker

TNO, The Netherlands

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### **S16 World engineering anthropometry resource, tools and applications**

Chair: Kathleen Robinette

**WEAR Data Network case studies: predicting morphological evolution and analysis of morphological variations related to educational or activity levels**

**R.Mollard, Kathleen Robinette and Sarah Skelton**

A protocol for evaluating the accuracy of 3D body scanners

Makiko Kouchi<sup>a</sup>, Masaaki Mochimaru<sup>a</sup>, Bruce Bradtmiller<sup>b</sup>, Hein Daanen<sup>c</sup>, Peng Li<sup>d</sup>, Beatriz Nacher<sup>e</sup>, and Yunja Nam<sup>f</sup>

<sup>a</sup>National Institute of Advanced Industrial Science and Technology, Japan <sup>b</sup>Anthrotech Inc., U.S.A.

<sup>c</sup>Department of Human Performance, Business Unit of Human Factors, The Netherlands <sup>d</sup>US

Army Natick Soldier Research Development & Engineering Center, U.S.A. <sup>e</sup>Polytechnic University

of Valencia, Spain <sup>f</sup>Department of Clothing and Textiles, College of Human Ecology, Seoul

National University, Korea

Where is the human waist? Definitions, manual compared to scanner measurements

Daisy Veitch<sup>a</sup>

<sup>a</sup>SHARP Dummies Pty Ltd, Australia

Comparing swimsuits in 3D

Erik van Geer<sup>a</sup>, Johan Molenbroek<sup>b</sup>, Sander Schreven<sup>c</sup>, Lenneke deVoogd-Claessen<sup>d</sup>, Huib Toussaint<sup>c</sup>

<sup>a</sup>Erik van Geer Product Development, the Netherlands <sup>b</sup>TU Delft, The Netherlands <sup>c</sup>VU University Amsterdam, The Netherlands <sup>d</sup>TU Delft, The Netherlands

A multidimensional approach to the generation of helmets' design criteria: A preliminary study  
Alemany, S<sup>a</sup>; Olaso, J<sup>a</sup>; Nacher, B<sup>a</sup>; Gil, M<sup>a</sup>; Hernández, A<sup>a</sup>; Pizá, M<sup>a</sup>; Solves, C<sup>a</sup>

<sup>a</sup>Polytechnique University of Valencia, Spain

Measurement of breast volume using body scan technology (computer-aided anthropometry)

Daisy Veitch<sup>a</sup>, Karen Burford<sup>b</sup>, Phil Dench<sup>c</sup>, Nicola Dean<sup>b</sup> and Philip Griffin<sup>b</sup>

<sup>a</sup>SHARP Dummies Pty Ltd, Australia <sup>b</sup>Flinders Medical Centre, Australia <sup>c</sup>headus (metamorphosis) Pty Ltd, Australia

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### **S17 Anthropometric data acquisition and use**

Chairs: Masaaki Mochimaru and Makiko Kouchi

Photogrammetry procedures applied to anthropometry

Maria Lúcia Leite Ribeiro Okimoto<sup>a</sup> and Alison Alfred Klein<sup>b</sup>

<sup>a</sup>Department of Mechanical Engineering, Federal University of Paraná, Brazil <sup>b</sup>Federal University of Paraná, Brazil

Using digital photogrammetry to conduct an anthropometric analysis of wheelchair users

Helda Oliveira Barros<sup>a</sup> and Marcelo Márcio Soares

<sup>a</sup>Federal University of Pernambuco, Brazil.

Automatic anthropometric personalization of a digital human model from a set of subject's photographs.

Jean-Pierre Verriest

IFSTTAR - University de Lyon, France

An anthropometric survey using digital photogrammetry: a case study in Recife, Pernambuco, Brazil.

Bruno Barros<sup>a</sup> and Marcelo Soares<sup>b</sup>

<sup>a</sup>Federal University of Pernambuco, Brazil <sup>b</sup>Department of Design, Federal University of Pernambuco, Brazil

Structuring software anthropometric variables on CD Rom as a facilitator of the process of design of work situations

Sharinna Venturim Zanuncio<sup>a</sup>, Carlos Emílio Barbosa Antônio<sup>a</sup>, Jugurta Lisboa Filho<sup>a</sup>, Simone Caldas Tavares Mafra<sup>b</sup>, Elza Maria Vidigal Guimarães<sup>a</sup>, Vania Eugênia da Silva<sup>a</sup>, Amaury Paulo de Souza<sup>a</sup>, Luciano José Minette<sup>a</sup>

Federal University of Viçosa, Brazil

<sup>a</sup>Federal University of Viçosa, Brazil <sup>b</sup>Home Economics Department and Higher Education Department of the Ministry of Education and Culture (SESu/MEC)

**A Meta Analysis of Current Clothing Correction Factor Data and Preliminary Study on Military Clothing Correction Factors for the Australian Defence Force (ADF)**

**S.Davis**

**Date: 14/02**  
**Room: 13**  
**Time: 4:30 – 6:00pm**

### **S18 Anthropometric survey**

Chair: Daisy Veitch

Sizing up Australia: Toward a national sizing survey

Daisy Veitch<sup>a</sup>, Verna Blewett<sup>b</sup> and David Caple<sup>c</sup>

<sup>a</sup>SHARP Dummies Pty Ltd, Australia <sup>b</sup>Central Queensland University, Australia <sup>c</sup>David Caple & Associates, Australia

How does the size and shape of local populations in China compare to general anthropometric surveys currently used for product design?

Nathan Daniell<sup>a</sup>, François Fraysse<sup>a</sup> and Gunther Paul<sup>a</sup>

<sup>a</sup>Ergolab, University of South Australia, Australia

### **Analysis of Pilot Anthropometric Survey Data for the Australian Defence Force**

J. Coleman

Defence Science, Australia

### **Anthropometry of Indonesian Workers in Jakarta**

Y. Yanto

Universitas Katolik Indonesia Atma Jaya Jakarta, Indonesia

Anthropometric Analysis of Wheelchair Users: Methodological Factors Which Influence Interpopulational Comparison

Helda Oliveira Barros<sup>a</sup> and Marcelo Márcio Soares

<sup>a</sup>Federal University of Pernambuco, Brazil.

Computer Re-sampling for Demographically Representative User Populations in Anthropometry: A Case of Doorway and Clear Floor Space Widths

Victor Paquet<sup>a,b</sup>, Caroline Joseph<sup>a,b</sup> and Clive D'Souza<sup>a,b</sup>

<sup>a</sup>Department of Industrial and Systems Engineering, University at Buffalo, USA <sup>b</sup>University at Buffalo, USA

**Date: 14/02**  
**Room: 15**  
**Time: 1:00 – 2:30pm**

### **S19 Human Factors and Ergonomics in the Building and Construction Industry 4**

Chairs: Vera Bins Ely and/or Gert Faber

The ergonomic and legal aspects of the heritage of the state of Pernambuco - Brazil

Terezinha de Jesus Pereira da Silva, Prof. Arq. PhD. <sup>a</sup>, Augusto Eugenio Paashaus Neto, Adv. <sup>b</sup>

<sup>a</sup>Department of Architecture and Urbanism, Federal University of Pernambuco, Brazil <sup>b</sup>Legal Department, Fundarpe - Foundation of Historical and Artistic Heritage of Pernambuco. Brasil.

## Communication of Ergonomics in building and construction

Viveca Wiberg<sup>a</sup>

<sup>a</sup> Swedish Work Environment Authority (SWEA)

From usability requirement to technical specifications for hand-held tools and materials: an applied research in the construction field

Gabriella Duca<sup>a</sup>, Erminia Attaianesi<sup>a</sup>

<sup>a</sup>Department DICATA/LEAS Laboratory, University of Naples Federico II, Italy

Accessibility in the Fortress of São José da Ponta Grossa

Callado, J.<sup>a</sup>, Poletto, A<sup>b</sup>

<sup>a</sup> Federal Institute of Education, Science and Technology of Santa Catarina, Brazil <sup>b</sup> Federal Institute of Education, Science and Technology of Santa Catarina, Brazil

Analysis of Accessibility for buildings of a graduation school – an experiment in Ergonomics training curriculum

ACIOLY, A. S. G<sup>a</sup>, OLIVERIA, M. D.<sup>a</sup>; FREITAS, V. H. F.<sup>a</sup>

<sup>a</sup>Design Department, Federal University of Paraíba, Brazil. <sup>a</sup>Design Department, Federal University of Paraíba, Brazil. <sup>a</sup>Design Department, Federal University of Paraíba, Brazil.

**Date: 14/02**

**Room: 15**

**Time: 2:30 – 4:00pm**

## **S20 Human Factors and Ergonomics in the Building and Construction Industry 5**

**Chairs: David Rempel and/or Peter Hoonakker**

Organizational factors related to occupational accidents in construction

J.M. Jackson Filho<sup>a</sup>, E.D. Fonseca<sup>a</sup>, F.P.A. Lima<sup>b</sup> and F.J.C.M. Duarte<sup>c</sup>

<sup>a</sup> FUNDACENTRO, Brazil <sup>b</sup> Production Engineering Department, Federal University of Minas Gerais, Brazil <sup>c</sup> COPPE, Federal University of Rio de Janeiro, Brazil.

Young workers in the construction industry and initial OSH-training when entering work life

Kari Anne Holte and Kari Kjestveit

Department of Social science and business development, International Research Institute of Stavanger, Norway

Overview of ergonomics built environment

Ana Paula Lima Costa<sup>a</sup>, Fábio Campos<sup>b</sup> and Vilma Villarouco<sup>c</sup>

<sup>a</sup>UFPE, Brazil <sup>b</sup>UFPE, Brazil <sup>c</sup>UFPE, Post graduate Program on Design, Brazil

## Interventions for overhead & concrete drilling

Rempel, D ; Barr, A ; Janowitz, I

University of California – USA

Methodological proceedings to evaluate the physical accessibility in urban historic sites

Gabriela Sousa Ribeiro<sup>a</sup>, Laura Bezerra Martins<sup>a</sup> and Circe Maria Gama Monteiro<sup>b</sup>

<sup>a</sup>Department of Design, Federal University of Pernambuco, Brazil. <sup>b</sup>Department of Architecture and Urbanism, Federal University of Pernambuco, Brazil.

Risk management project for work with Precast Concrete Shells

Linda Rose<sup>a</sup>

<sup>a</sup> Department of Ergonomics, School of Technology and Health, KTH, The Royal Institute of Technology, Sweden

**Date: 14/02**

**Room: 15**

**Time: 4:30 – 6:00pm**

## **S21 Human Factors and Ergonomics in the Building and Construction Industry**

**Chair(s): Gert Faber and/or Peter Hoonakker**

The preparation of the hospitality network of Recife for the 2014 World Cup and the challenges of accessibility

Calabria, E ; Silva, T

Federal Rural University of Pernambuco, Federal University of Pernambuco – Brazil

The elderly in the shopping centers: the usability study of semipublic spaces as attractiveness generator

Maria Cristina Bittencourt<sup>a</sup>, Vera Lúcia Duarte do Valle Pereira, <sup>a</sup> Waldemar Pacheco Jr. <sup>a</sup>

<sup>a</sup>Departament of Production Engineering and Systems, Federal University of Santa Catarina, Brazil

Does team lifting increase the variability in peak lumbar compression in ironworkers?

Gert Faber<sup>a,b,c</sup>, Steven Visser<sup>d</sup>, Henk F. van der Molen<sup>d,e</sup>, P. Paul F.M. Kuijer<sup>d</sup>, Marco J.M. Hoozemans<sup>a,f</sup>, Jaap H. van Dieën<sup>a</sup>, Monique H.W. Frings-Dresen<sup>d</sup>

<sup>a</sup>Research Institute MOVE, Faculty of Human Movement Sciences, VU University, The Netherlands <sup>b</sup>Department of Environmental Health, Harvard School of Public Health, USA <sup>c</sup>Liberty Mutual Research Institute for Safety, USA <sup>d</sup>Coronel Institute of Occupational Health, Academic Medical Center, University of Amsterdam, The Netherlands <sup>e</sup>Arbouw, The Netherlands <sup>f</sup>EXPres, Faculty of Human Movement Sciences, VU University, The Netherlands

Biomechanical Modelling and Evaluation of Construction jobs for Performance Improvement

Ratri Parida<sup>a</sup>, Pradip Kumar Ray<sup>b</sup>

<sup>a</sup>Department of Industrial Engineering and Management, Indian Institute of Technology Kharagpur, India <sup>b</sup>Department of Industrial Engineering and Management, Indian Institute of Technology Kharagpur, India

Accessibility in collective housing for the elderly: a case study in Portugal

PAIVA, Marie Monique Bruère<sup>a</sup>, VILLAROUCO, Vilma<sup>b</sup>

<sup>a</sup>UFPE, Post-Graduate Programme in Design, Brazil. <sup>b</sup>UFPE, Post graduate Program on Design, Brazil

Impact of lightweight and conventional jackhammers on the operator

Naira Campbell-Kyureghyan, PhD, Gurjeet Singh, MS, Wilkistar Otieno, PhD, Karen Cooper, MS  
Department of Industrial & Manufacturing Engineering, University of Wisconsin-Milwaukee, USA

**Date: 14/02**  
**Room: 16**  
**Time: 1:00 – 2:30pm**

## **S22 Transport Ergonomics and Human Factors I**

**Chair: Anabela Simões**

Naturalistic observation of drivers' interactions while overtaking on an undivided road  
Evangelia Portouli<sup>a</sup>, Dimitris Nathanael<sup>a</sup>, Nicolas Marmaras<sup>a</sup> and Vassilis Papakostopoulos<sup>b</sup>  
<sup>a</sup>National Technical University of Athens, Greece <sup>b</sup>Department of Product and Systems Design  
Engineering, University of the Aegean, Greece

Comparison of Two Human-Machine-Interfaces for Cooperative Maneuver-Based Driving  
Benjamin Franz<sup>a</sup>, Michaela Kauer<sup>a</sup>, Anton Blanke<sup>a</sup>, Michael Schreiber<sup>a</sup>, Ralph Bruder<sup>a</sup>, and  
Sebastian Geyer<sup>b</sup>

Technical University of Darmstadt

<sup>a</sup>Institute of Ergonomics, Germany <sup>b</sup>Institute of Automotive Engineering, Germany

Safety implications of infotainment system use in naturalistic driving

Miguel A. Perez

Virginia Tech Transportation Institute, Unites States

Using naturalistic driving films as a design tool for investigating driver requirements in HMI  
design for ADAS

Wang, M; Chen, F; Sun, D

A method to investigate drivers' acceptance of Blind Spot Detection System<sup>\*</sup>

Giulio Francesco Piccinini<sup>a</sup>, Anabela Simões<sup>b</sup>, Carlos Manuel Rodrigues<sup>c</sup> and Miguel Leitão<sup>d</sup>

<sup>a</sup>Cooperative of Ensino Superior and Scientific Research C.R.L., Portugal <sup>b</sup>Institute Superior of  
Management, Portugal <sup>c</sup>Department of Civil Engineering, University of Porto, Portugal

<sup>d</sup>Department of Electrical Engineering, Institute Polytechnic of Porto, Portugal

Finite element modelling of automotive seat cushion indentation using a deformable butt-  
shaped indenter

Al-Dirini, R ; Paul, G ; Thewlis, D

AUSTRALIA

**Date: 14/02**  
**Room: 16**  
**Time: 2:30 – 4:00pm**

## **S23 Transport Ergonomics and Human Factors II**

**Chair: Anabela Simões**

Subcontracting: a safety risk?

Carta, G; Falzon, P.

Keeping rail on track: preliminary findings on safety culture in Australian rail

Verna Blewett<sup>a</sup>, Sophia Rainbird<sup>a</sup>, Jill Dorrian<sup>b</sup>, Jessica Paterson<sup>a</sup> and Marcus Cattani  
<sup>a</sup>Central Queensland University, Australia <sup>b</sup>University of South Australia, Australia <sup>c</sup>Cattani Consulting Pty Ltd, Australia

Understanding human factors in rail engineering: re-analysis of detailed, qualitative data on functions and risks

Brendan Ryan<sup>a</sup>, John R. Wilson<sup>ab</sup>, Alex Schock<sup>b</sup>

<sup>a</sup>University of Nottingham, UK. <sup>b</sup>Ergonomics National Specialist Team, UK

### Factors Affecting Driver Distraction through Roadside Advertisements in the Philippines Gutierrez, A

Indonesian railway accidents – utilizing Human Factors Analysis and Classification System in determining potential contributing factors

Hardianto Iridiastadia, and Zulfa Fitri Ikatrinasarib

<sup>a</sup>Faculty of Industrial Technology, Institut Teknologi Bandung, JL.Ganesha No.10, Bandung 40132, Indonesia; <sup>b</sup>Graduate Program, Universitas Mercu Buana, JL. Menteng Raya No. 29, Jakarta 10340, Indonesia

**Date: 14/02**

**Room: 16**

**Time: 4:30 – 6:00pm**

### S24 Transport Ergonomics and Human Factors 3

**Chair: Anabela Simões**

Designing Dynamic Distributed Cooperative Human-Machine Systems

A. Lütke<sup>a</sup>, D. Javaux<sup>b</sup>, F. Tango<sup>c</sup>, R. Heers<sup>d</sup>, K. Bengler<sup>e</sup>, C. Ronfle-Nadaud<sup>f</sup>

<sup>a</sup>OFFIS Institute for Information Technology, Germany <sup>b</sup>Next Step Solutions, Belgium <sup>c</sup>Search Center of Fiat, Italy <sup>d</sup>Visteon Innovation & Technology GmbH, Germany <sup>e</sup>Technical University of Munich, Germany <sup>f</sup>National School of Civil Aviation 7, France

User Acceptance of Cooperative Maneuver-Based Driving – A Summary of Three Studies

Michaela Kauer<sup>a</sup>, Benjamin Franz<sup>a</sup>, Michael Schreiber<sup>a</sup>, Ralph Bruder<sup>a</sup>, and Sebastian Geyer<sup>b</sup>

<sup>a</sup>Technical University Darmstadt, Germany <sup>b</sup>Technical University Darmstadt, Darmstadt, Germany

How Shall We Design the Future Vehicle for Chinese Market

Fang Chen, MinJuan Wang<sup>a</sup>, Xi Chan Zhu<sup>b</sup>, Jiaqi Li<sup>b</sup>

<sup>a</sup>Chalmers University, Sweden <sup>b</sup>Tongji University, China

DriveID: Safety Innovation Through Individuation

Benjamin D. Sawyer<sup>a</sup>, Grace Teo<sup>a</sup> and Mustapha Mouloua<sup>a</sup>

<sup>a</sup>Department of Psychology, University of Central Florida, United States of America

Assisted Entry Mitigates Text Messaging-Based Driving Detriment

Benjamin D. Sawyer<sup>a</sup> and Peter A. Hancock<sup>a</sup>

<sup>a</sup>Department of Psychology, University of Central Florida, United States of America

**Date: 14/02**  
**Room: 17**  
**Time: 1:00 – 2:30pm**

**S25 Gender, work activity and risk: what are the implications for intervention?**

**Chair: Rima Habib, Faculty of Health Sciences, American University of Beirut - Lebanon**

Effects of extended work shifts on employee fatigue, health, satisfaction, work/family balance, and patient safety.

Madeleine Estryn-Béhar<sup>a</sup>, Beatrice I.J.M. Van der Heijden<sup>b</sup>, & the NEXT Study Group

<sup>a</sup>Department of Occupational Health Hôtel Dieu, Assistance-Public-Hospitals of Paris, France

<sup>b</sup>Radboud University Nijmegen; Open University of the Netherlands; University of Twente, The Netherlands.

The impact of career-long tensions between different spheres of life on kindergarten teachers at the end of their careers.

Cau-Bareille, Dominique

When gender bumps into health and safety training: working conditions, readings and challenges drawn from a case study in an industrial chemicals company

Ricardo Vasconcelos<sup>a</sup>, Sandra Teixeira<sup>b</sup>, Joana Castelhana<sup>a</sup> and Marianne Lacomblez<sup>a</sup>

Thinking about gender, thinking about a *common space* of observation and discussion of the work activity of the other: the case of bus drivers

Liliana Cunha<sup>a,b</sup>, Sónia Nogueira<sup>a</sup> and Marianne Lacomblez<sup>a</sup>

<sup>a</sup>University of Porto, Portugal <sup>b</sup>Portuguese Catholic University, Portugal

The Activity of Occupational health physicians in relation to the Task of Keeping People Affected by MSD in Employment: a Gender Effect?

S.Caroly<sup>a</sup>

<sup>a</sup>University of Grenoble, France

Burnout, organizational requirements and work-life balance: the case of the general practitioners (GPs)

Marianne De Troyer, Guy Lebeer

METICES - Free University of Brussels

**Date: 14/02**  
**Room: 17**  
**Time: 2:30 – 4:00pm**

**S26 Gender issues in various occupations**

**Chair: Rima Habib, Faculty of Health Sciences, American University of Beirut - Lebanon**

SHIFT WORK -PROBLEMS AND ITS IMPACT ON FEMALE NURSES IN UDAIPUR, RAJASTHAN INDIA  
Rathore, H1  
Maharana pratap University Agriculuture & technology, India

Women's working conditions in hospital cleaning: a case study  
Salerno, S

Gender differences on the job satisfaction in the phase of implementing advanced  
manufacturing technology in the Chinese manufacturing firms  
Na Yu<sup>a,b</sup>, Li Ming Shen<sup>a</sup>, and Siegfried Lewark<sup>b</sup>  
<sup>a</sup>Nanjing Forestry University, China <sup>b</sup>University of Freiburg, Germany

**Adequacy of ergonomic workstations with a gender perspective in oil and electrical industry**  
Gonzalez, R

Influence of Gender on the Prevalence of Rsi/ Wruld in Meat-Packing Plants  
Reis, P.<sup>a,b</sup>, Moro, A.<sup>a,c</sup> Merino, Eugenio<sup>a</sup> Vilagra, J.<sup>d</sup>  
<sup>a</sup>Federal University of Santa Catarina, Brazil <sup>b</sup>Instituto de Ensino Superior de Foz do Iguaçu, Brazil  
<sup>c</sup>Federal University of Santa Catarina, Brazil <sup>d</sup>Department of Physiotherapy, University of West of  
Paraná, Brazil

Gender and age do not influence the ability to work  
Rosimeire Simprini Padula<sup>a</sup>, Luciana do Socorro da Silva Valente<sup>a</sup>; Mônica Vasconcelos de  
Moraes<sup>a</sup>;  
Luciana Dias Chiavegato <sup>a</sup>, Cristina Maria Nunes Cabral <sup>a</sup>.  
<sup>a</sup>City of São Paulo University, Brazil.

**Date: 14/02**  
**Room: 17**  
**Time: 4:30 – 6:00pm**

**S27 Gender issues in agricultural work**  
Co-Chairs: Rima R. Habib and Fadi Fathallah

Gender involvement in manual material handling (mmh) tasks in agriculture and technology  
intervention to mitigate the resulting musculo skeletal disorders  
Dr Suman Singh<sup>1</sup>, Dr Neelima Sinwal<sup>2</sup>, Dr Hemu Rathore<sup>2</sup>  
<sup>1</sup>FRM Department, Maharana Pratap University of Agriculture and Technology, India <sup>2</sup>Maharana  
Pratap University of Agriculture and Technology, India

**Technology interventions for Drudgery Reduction of gender in Andhra Pradesh**  
Nil, A

Intervention of Gender Friendly Land Preparation Technologies For Drudgery Reduction of Hill  
Farm Women  
Kishtwaria, J

Ergonomic Intervention in Weeding Operations for Drudgery Reduction of Hill Farm Women of India.

Kishtwaria, J

Migrant women farm workers in the occupational health literature

Rima R. Habiba and Fadi A. Fathallahb

aAmerican University of Beirut, Lebanon bDepartment of Biological and Agricultural Engineering, University of California, USA

Assessment of energy balance of Indian farm women in relation to their nutritional profile in lean and peak agricultural seasons<sup>1</sup>

Dr Suman Singha\*, Dr Sushma Sinwalb and Dr Hemu Rathoreb

a Associate Professor, FRM Department, College of Home Science, Maharana Pratap University of Agriculture and Technology, Udaipur, INDIA.

b FRM Department, College of Home Science, Maharana Pratap University of Agriculture and Technology, Udaipur, India

**Date: 15/02**

**Room: 01**

**Time: 1:00 – 2:30pm**

### **S28 Ergonomics in automotive industry**

Chair: Begoña Toledo Muñoz (to be confirmed)

Integration of time as a factor in ergonomic simulation

Mario Walther<sup>a</sup> and Begoña Toledo Muñoz<sup>a</sup>

<sup>a</sup>Volkswagen Group

Metabolic impact of shift work

Ioná Zalczman Zimberg<sup>a</sup>, Silvio A. Fernandes Junior<sup>b</sup>, Cibele Aparecida Crispim<sup>c</sup>, Sergio Tufik<sup>a</sup> and Marco Tulio de Mello<sup>a,b</sup>

<sup>a</sup>Department of Psychobiology, Federal University of São Paulo, Brazil <sup>b</sup>Multidisciplinary Center for the Study of Sleepiness and Accidents <sup>c</sup> Medical School, Federal University of Uberlândia, Brazil

Ergonomic risk assessment with DesignCheck to evaluate assembly work in different phases of the vehicle development process

Winter Gabriele<sup>a</sup>, Schaub Karlheinz G.<sup>a</sup>, Großmann Kay<sup>b</sup>; Laun Gerhard<sup>b</sup>, Landau Kurt<sup>a</sup> and Bruder Ralph<sup>a</sup>

<sup>a</sup>Darmstadt University of Technology, <sup>b</sup> Dr.-Ing. h.c. F. Porsche AG

The charge of ergonomics – A model according to the influence of ergonomic workplace design for economical and efficient indicators of the automotive industry

Nicole Neubert<sup>a</sup>, Prof. Dr. Ralph Bruder<sup>b</sup>, Dr. Begoña Toledo<sup>a</sup>

<sup>a</sup>Volkswagen Group <sup>b</sup>Technical University Darmstadt

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<sup>1</sup> Assessment of energy balance of Indian farm women in relation to their nutritional profile in lean and peak agricultural seasons

\* E-mail : sumanfrm@rediffmail.com

Assessing driver's mental representation of Adaptive Cruise Control (ACC) and its possible effects on behavioural adaptations.

Giulio Francesco Piccinini<sup>a</sup>, Anabela Simões<sup>b</sup>, Carlos Manuel Rodrigues<sup>c</sup> and Miguel Leitão<sup>d</sup>

<sup>a</sup>UNIVERSITAS, Cooperative of Ensino Superior and Scientific Research C.R.L. <sup>b</sup>CIGEST, Institute of Management <sup>c</sup>Department of Civil Engineering, University of Porto <sup>d</sup>Department of Electrical Engineering, Polytechnic Institute of Porto

Managing Ergonomics in the development of rotation between workstations in the Automotive Industry. A balance between health and traceability of tasks.

Filus, Dr.. Rodrigo<sup>a</sup>, Partel, Luciana<sup>b</sup>

<sup>a</sup>Corporate Ergonomic Sector Volkswagen do Brasil. Corporate Responsible Production Unit Taubaté – HR Unit Manager. <sup>b</sup>Human Resources Production Unit Curitiba – Volkswagen do Brasil. HR Manager.

**Date: 15/02**

**Room: 01**

**Time: 2:30 – 4:00pm**

### **S29 Original approach for a session on physical workload in automotive industries 1**

Chair: Enrico Occhipinti

Prevention of MSD by means of ergonomic risk assessment (tools) in all phases of the vehicle development process

Schaub Karlheinz, Kugler Michaela, Bierwirth Max, Sinn-Behrendt Andrea and Bruder Ralph  
Darmstadt University of Technology, Germany.

Global ergonomics strategy in Volkswagen: from the product construction, over the planning until the serial process

Dr. Begoña Toledo<sup>a</sup>

<sup>a</sup>Volkswagen Group, Germany

### **Field report of Volkswagen do Brazil**

Filus, R.

Volkswagen

ERGO-MTM model: an integrated approach to set working times based upon standardized working performance and controlled biomechanical load

Caragnano G.<sup>a</sup>, Lavatelli I.<sup>a</sup>

<sup>a</sup>PricewaterhouseCoopers Advisory SpA, Italy

Interactive production planning and ergonomic assessment with Digital Human Models – Introducing the Editor for Manual Work Activities (ema)

Lars Fritzschea\*, Wolfgang Leidholdtb, Sebastian Bauerb, Thomas Jäckelb and Adrian Morenob  
aimk automotive, Inc., 5 Research Drive, 29607 Greenville SC, U.S.A.;

bimk automotive, GmbH, Annaberger Str. 73, 09111 Chemnitz, Germany

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\* Corresponding author. Email: info@imk-automotive.com

**Date: 15/02**  
**Room: 01**  
**Time: 4:30 – 6:00pm**

### **S30 Original approach for a session on physical workload in automotive industries 2**

Chair: Karlheinz Schaub  
Darmstadt University of Technology - Germany

MultipLa – a tool for the combined overall estimation of various types of manual handling tasks  
Schaub Karlheinz, Bierwirth Max, Kugler Michaela, and Bruder Ralph  
Darmstadt University of Technology, Germany.

Ergonomics and workplace design: application of Ergo-UAS System in Fiat Group Automobiles.  
Vitello M.<sup>a</sup>, Galante L.G.<sup>a</sup>, Capoccia M.<sup>a</sup>, Caragnano G.<sup>b</sup>  
<sup>a</sup>Fiat Group Automobiles, Italy <sup>b</sup>PricewaterhouseCoopers Advisory Spa, Italy

Correlations in between EAWS and OCRA Index concerning the repetitive loads of the upper limbs in automobile manufacturing industries  
Ivan Lavatelli<sup>a</sup>, Karlheinz Schaub<sup>b</sup>, Gabriele Caragnano<sup>c</sup>  
<sup>a</sup>Technical Committee Coordinator, AMI - Associazione MTM Italia, Italy <sup>b</sup>Institute of Ergonomics, University of Technology, Germany <sup>c</sup>International MTM Directorate, USA

Ergonomics and workplace design: application of Ergo-UAS System in Fiat Group Automobiles.  
Vitello M.a, Galante L.G.a, Capoccia M.a, Caragnano G.b  
a. Fiat Group Automobiles, Manufacturing Planning & Control, Turin, Italy  
b. PricewaterhouseCoopers Advisory Spa, Operation, Milan, Italy

**Date: 15/02**  
**Room: 02**  
**Time: 1:00 – 2:30pm**

### **S31 NIOSH Consortium Studies of Distal Upper Extremity Musculoskeletal Disorders**

Jay Kapellusch (chair)

Risk factors for incident carpal tunnel syndrome: Results of a prospective cohort study of newly-hired workers  
Evanoff B., Dale A.M., Deych E., Ryan D., Franzblau A.

Workplace factors in wrist tendinosis among blue-collar workers ? the San Francisco study  
Harris C., Eisen E.A., Goldberg R., Krause N., & Rempel D.

Relationships Between Job Physical Exposure and Carpal Tunnel Syndrome in a Prospective Cohort: Results from the WISTAH Hand Study  
Kapellusch J.M., Garg A., Hegmann K.T., Wertsch J., Merryweather A., Thiese M., & Blowski D.

Prospective study of carpal tunnel syndrome and physical workload in Washington State workers

Silverstein B.A., Fan Z.J., Bao S., Smith C.K., Bonauto D.K., Howard N.L., & Viikari-Juntura E.A.

**Date: 15/02**

**Room: 02**

**Time: 2:30 – 4:00pm**

### **S32 Changing Mines for Healthier People**

Andrea Shaw (chair)

Digging Deeper to establish strong foundations  
Verna Blewett

Changing Minds, Changing Mines in South Africa  
Andrea Shaw and Schu Schutte

Addressing the Cultural Complexity of OHS in the Australian Mining Industry

Christine Aickin<sup>a</sup>, Andrea Shaw<sup>b</sup>, Verna Blewett<sup>c</sup>, Laurie Stiller<sup>d</sup>, Stephen Cox<sup>e</sup>

<sup>a</sup>Workability Pty Ltd, Australia <sup>b</sup>Shaw Idea Pty Ltd, Australia <sup>c</sup>University of South Australia, Adelaide SA, Australia <sup>d</sup>Beyond Words Pty Ltd, Australia <sup>e</sup>Stephen Cox Consulting Pty Ltd, Australia

Using MSD Prevention for Cultural Change in Mining: Queensland Government/Anglo Coal Industry Partnership

Trudy Tilbury<sup>a</sup> and Liz Sanderson<sup>b</sup>

<sup>a</sup>DEEDI Mines, Australia <sup>b</sup> AAMC, Australia

Application of ergonomics principles in underground mines through the Occupational Safety and Health Management System – OSHMS OHSAS 18.001:2007

Agnaldo Fernando Vieira de Arruda<sup>a</sup>, Leila Maral Gontijo<sup>b</sup>

<sup>a</sup>Federal Institute of Goiás, Brazil <sup>b</sup>Federal University of Santa Catarina, Brazil

**Date: 15/02**

**Room: 02**

**Time: 4:30 – 6:00pm**

### **S33 Healthcare Information Technology Implementation**

Co-chairs: Patrick Waterson, Peter Hoonakker and Pascale Carayon

Challenges to care coordination posed by the use of multiple health IT applications

Pascale Carayon<sup>1,2</sup>, Bashar Alyousef<sup>1,2</sup>, Peter Hoonakker<sup>1</sup>, Ann Schoofs Hundt<sup>1</sup>, Randi Cartmill<sup>1</sup>, Janet Tomcavage<sup>5</sup>, Andrea Hassol<sup>4</sup>, Kimberly Chaundy<sup>3</sup>, Sharon Larson<sup>6</sup>, Jim Younkin<sup>3</sup> and James Walker<sup>3</sup>

<sup>1</sup>University of Wisconsin-Madison, USA <sup>2</sup>Department of Industrial and Systems Engineering, University of Wisconsin-Madison, USA <sup>3</sup>Geisinger Health System, USA <sup>4</sup>Abt Associates, USA <sup>5</sup>Geisinger Health Plan, USA <sup>6</sup>SAMHSA, Rockville, USA

Computer Decision Support Tools in Primary Care

Peter Hoonakker<sup>a</sup>, Adjhaporn Khunlertkit<sup>a</sup>, Matthew Tattersal<sup>b</sup> and Jon Keevil<sup>b</sup>

<sup>a</sup>University of Wisconsin-Madison, USA <sup>b</sup>Department of Medicine, University of Wisconsin-Madison, USA

Considering social ergonomics: The effects of HIT on interpersonal relationships between patients and clinicians

Enid Montague, Onur Asan

<sup>1,2</sup>UW-Madison, USA

Can we make health IT safe enough for patients?

Robert L Wears, <sup>a,b</sup>

<sup>a</sup>Department of Emergency Medicine, University of Florida – USA <sup>b</sup>Centre for Safety and Quality Improvement, Imperial College London, UK

Using HIT to deliver integrated care for the frail elderly in the UK: current barriers and future challenges

Patrick Waterson<sup>1</sup>, Ken Eason<sup>2</sup>, Dylan Tutt<sup>3</sup> and Mike Dent<sup>4</sup>

<sup>1</sup>Loughborough University, UK <sup>2</sup>Bayswater Institute, UK <sup>3</sup>University of Reading, UK <sup>4</sup>Staffordshire University, UK

Spin your science into gold: Direct to Consumer Marketing within Social Media platforms

David Egilman and Nicholas M Druar

Department of Family Medicine, Brown University, Warren Alpert School of Medicine, 8 N. Main Street, Suite 401, Attleboro, MA, USA; Never Again Consulting, 8 N. Main Street, Suite 401, Attleboro, MA, USA

**Date: 15/02**

**Room: 04**

**Time: 1:00 – 2:30pm**

### **S34 Human-Centered Design of Life-Critical Systems 1**

Guy A. Boy (chair)

What do we mean by Human-Centered Design of Life-Critical Systems?

Guy A. Boy

Florida Institute of Technology, U.S.A.

Complexity Analysis of the Next Gen Air Traffic Management System: Trajectory Based Operations

Rhonda Lyons

Florida Institute of Technology, U.S.A.

Improving Flight Condition Situational Awareness through Human Centered Design

Carol Craig<sup>a</sup>

<sup>a</sup>Florida Institute of Technology, USA <sup>b</sup>Craig Technologies, USA

The Development of a Virtual Camera System for Astronaut-Rover Planetary Exploration

Donald W. Platt<sup>a</sup> and Guy A. Boy<sup>a</sup>

<sup>a</sup>Florida Institute of Technology, USA

**Date: 15/02**

**Room: 04**

**Time: 2:30 – 4:00pm**

### **S35 Human-Centered Design of Life-Critical Systems 2**

Guy A. Boy (chair)

Advanced interaction media in nuclear Power plant control rooms

Lucas Stephane

Human Centered Design Institute and Department of Mathematical Sciences, Florida Institute of Technology

150 West University Boulevard, 32901 Melbourne, FL, USA

Automations influence on nuclear power plants: a look at three accidents and how automation played a role

Kara Schmitt

Human Centered Design Institute (HCDi), Florida Institute of Technology, 150 W. University Blvd, Melbourne, FL 32901, USA

Human-machine cooperation: a solution for life-critical Systems?

Patrick Millot <sup>a,b</sup> and Guy A. Boy <sup>b</sup>

<sup>a</sup> LAMIH CNRS Université de Valenciennes, Le Mont Houy 59313 Valenciennes Cedex 9, France

<sup>b</sup> HCDi, Florida Institute of Technology, 150 West University Blvd, Melbourne, FL 32901, U.S.A.

Rethinking healthcare as a safety-critical industry

Robert L Wears, MD, MS <sup>a,b</sup>

<sup>a</sup> Department of Emergency Medicine, University of Florida – Jacksonville, 655 W 8<sup>th</sup> Street, Jacksonville, FL 32209, USA

<sup>b</sup> Centre for Safety and Quality Improvement, Imperial College London, QEQM Building, Praed Street, London W2 1NY, UK

**Date: 15/02**

**Room: 04**

**Time: 4:30 – 6:00pm**

### **S36 Ergonomics Analysis of Work and Training: Part 3 - Analysis, evaluation, and dissemination of effective training practices**

Co-chairs: Jussara Brito and Dominique Cau-Bareille

Evaluating work and training within an intercommunicating process of change: reflections drawn from a case study on a chemicals industrial company in Portugal

Ricardo Vasconcelos <sup>a</sup>, Daniel Silva <sup>b</sup>, Ricardo Pinto <sup>b</sup> and Sérgio Duarte <sup>a</sup>

<sup>a</sup> University of Porto, Portugal <sup>b</sup> University of Porto, Portugal

Ergonomic analysis of work activity for the purpose of developing training programs: the contribution of ergonomics to vocational didactics

Sylvie Ouellet

Institut de recherche Robert-Sauvé en santé et en sécurité du travail, Québec

Instruments of trainers' activity: the use of referentials in processes of recognition and validation of prior learning

Joana Fernandes<sup>a</sup> and Marta Santos<sup>b</sup>

<sup>a</sup>Oporto University, Portuguese Catholic University, Portugal <sup>b</sup>Oporto University, Oporto, Portugal

Proposal for training of workers and researchers as from the participatory return of research results in workers' health

Joseane Pessanha Ferreira<sup>a</sup>, Claudia Osorio da Silva<sup>b</sup> e Lúcia Rotenberg<sup>a</sup>

<sup>a</sup>Oswaldo Cruz Foundation, FIOCRUZ, Brazil. <sup>b</sup>Department of Psychology, Fluminense Federal University, Brazil

"Meetings on the work": an analysis device for understanding the articulation between outsourcing and other organizational innovations

Denise Alvarez<sup>a</sup> and Marcelo Figueiredo<sup>b</sup>

<sup>a</sup> and <sup>b</sup> Department of Production Engineering, Fluminense Federal University, Brazil

**Date: 15/02**

**Room: 13**

**Time: 1:00 – 2:30pm**

### **S37 ANTHROPOMETRY APPLIED TO ERGONOMIC DESIGN**

Chair: Johan Molenbroek

Using experimental design to define boundary manikins

Erik Bertilsson<sup>a,b</sup>, Dan Högberg<sup>a</sup> and Lars Hanson<sup>b,c</sup>

<sup>a</sup>University of Skövde, Sweden <sup>b</sup>Department of Product and Production Development, Chalmers University of Technology, Sweden <sup>c</sup>Scania CV, Scania AB (publ), Sweden

Anthropometric Change: Implications for Office Ergonomics

Claire C. Gordon, Ph.D<sup>a</sup> and Bruce Bradtmiller, Ph.D.<sup>b</sup>

<sup>a</sup>US Army Natick Soldier Center, USA <sup>b</sup>Anthrotech, USA

Influence of anthropometry on meat-packing plant workers: an approach to the shoulder joint

Pedro Ferreira Reis<sup>a,b</sup>, Luis Sérgio Peres<sup>c</sup>, Adriana Seára Tirloni<sup>a</sup>, Diogo Cunha dos Reis<sup>d</sup>, Jansen Atier Estrázulas<sup>e</sup>, Mateus Rossato<sup>f</sup> and Antônio Renato Pereira Moro<sup>a,d,g</sup>

<sup>a</sup>University of Santa Catarina, Brazil <sup>b</sup>Instituto de Ensino Superior de Foz do Iguaçu, Brazil  
<sup>c</sup>University of West of Paraná, Brazil <sup>d</sup>Federal University of Santa Catarina, Brazil <sup>e</sup>State of Amazonas University, Brazil <sup>f</sup>Federal University of Amazonas, Brazil <sup>g</sup>Department of Physical Education, Federal University of Santa Catarina, Brazil

1D and 3D anthropometric data application on public transport vehicle layout and on oil and gas laboratories work environment design

Flávia Pastura<sup>a</sup>, Carla Guimarães<sup>a</sup>, Maria Cristina Zamberlan<sup>a</sup>, Glória Cid<sup>a</sup>, Venétia Santos<sup>b</sup>, Priscilla Streit<sup>a</sup>, Alessandra Paranhos<sup>a</sup>, Rodrigo Cobbe<sup>a</sup>, Kamila Cobbe<sup>a</sup> and Denise Batista<sup>a</sup>

<sup>a</sup>National Institute of Technology (INT), Brazil <sup>b</sup>Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Brazil

Determining anthropometric variables as a tool in the preparation of furniture and designs of interior spaces: the case of children 6 to 11 years old of Vicosa, State of Minas Gerais, Brasil  
Sharinna Venturim Zanuncio<sup>a</sup>, Simone Caldas Tavares Mafra<sup>b</sup>, Carlos Emílio Barbosa Antônio<sup>a</sup>,  
Jugurta Lisboa Filho<sup>a</sup>, Elza Maria Vidigal Guimarães<sup>b</sup>, Vania Eugênia da Silva<sup>a</sup>, Amaury Paulo de  
Souza<sup>a</sup>, Luciano José Minette<sup>a</sup>

Federal University of Viçosa, Brazil

<sup>a</sup>Federal University of Viçosa, Brazil <sup>b</sup>Home Economics Department and Higher Education  
Department of the Ministry of Education and Culture (SESu/MEC).

Accessibility and Ergonomic Analysis for Banking Cash

A. Kaizer, F. Ramos and E. Ferro

NR Work Ltd, Brazil

**Date: 15/02**

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**Time: 2:30 – 4:00pm**

### **S38 Ergonomics Analysis of Work and Training – Gender considerations**

Co-Chairs: Catherine Delgoulet & Marta Santos

Police training course for agents – entry into the profession and also into the distinction  
between men and women

Joana Castelhana<sup>a</sup>, Marianne Lacomblez<sup>a</sup>, Marta Santos<sup>a</sup> and Camilo Valverde<sup>a,b</sup>

<sup>a</sup>University of Porto, Portugal <sup>b</sup>Portuguese Catholic University, Portugal

Safe and healthy integration into semiskilled jobs: does gender matter?

Marie Laberge<sup>a</sup>, Nicole Vézina<sup>a</sup> and Johanne Saint-Charles<sup>a</sup>

<sup>a</sup>University of Quebec at Montreal, Canada

The entry of women predominantly male professions: when training supports the search of  
alternative ways of organizing work time

Sónia Nogueira<sup>a</sup>, Marianne Lacomblez<sup>a</sup>, Marta Santos<sup>a</sup>, Liliana Cunha<sup>a,b</sup> and Joana Castelhana<sup>a</sup>

<sup>a</sup>University of Porto, Portugal <sup>b</sup>Portuguese Catholic University, Portugal

Health and Safety of Students in Vocational Training in Quebec: A Gender Issue?

Céline Chatigny, Jessica Riel and Livann Nadon

University of Quebec at Montreal, Canada

The use of a Website as an interaction and training device in health, gender and work in schools  
Jussara Brito<sup>a</sup>, Mary Yale Neves<sup>b</sup>, Amanda Ornela Hyppolito<sup>c</sup>, Denise Alvarez<sup>d</sup>, Edil Ferreira da  
Silva<sup>e</sup>, Hélder Muniz<sup>f</sup>, Kátia Reis de Souza<sup>g</sup>, Maristela França<sup>h</sup> and Milton Athayde<sup>i</sup>

<sup>a</sup>Oswaldo Cruz Foundation, Brazil <sup>b</sup>Department of Psychology, Fluminense Federal University,  
Brazil <sup>c</sup>Department of Health and Society, Universidade Federal Fluminense, Brazil <sup>d</sup>Department  
of Production Engineering, Fluminense Federal University, Brazil <sup>e</sup>Department of Psychology,  
State University of Paraíba and Federal University of Paraíba, Brazil <sup>f</sup>Department of Psychology,

Fluminense Federal University, Brazil. <sup>g</sup>Oswaldo Cruz Foundation, Brazil <sup>h</sup>Department of Technical Process and Technical Process and Documentais, Federal of State of Rio de Janeiro University, Brazil <sup>i</sup>State University of Rio de Janeiro, Brazil

**Date: 15/02**

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**Time: 4:30 – 6:00pm**

### **S39 Ergonomic aspects of Clinical and Surgical Procedures**

Thomas J. Armstrong & David Rempel (co-chairs)

Disparities Between Industrial and Surgical Ergonomics

F. Jacob Seagull

Department of Medical Education, University of Michigan Medical School, USA

Standardization of surgical procedures for identifying best practices and training.

Armstrong, T. <sup>a</sup>, D. Yu<sup>a</sup>, A. Frischknecht<sup>b</sup>, R. Minter<sup>b</sup>, P. Andreatta<sup>c</sup>, S. Kasten<sup>b</sup>

<sup>a</sup>University of Michigan, USA, <sup>b</sup>Department of Surgery, University of Michigan, USA <sup>c</sup>Department of Medical Education, University of Michigan, USA

Distal Upper Extremity Musculoskeletal Risk Factors Associated with Colonoscopy

David Rempel<sup>a</sup>, David Lee<sup>a</sup> and Amandeep Shergill<sup>b</sup>

<sup>a</sup>Department of Medicine, University of California, USA. <sup>b</sup>Department of Gastroenterology, VA Hospital, USA.

Ergonomic considerations in natural orifice transluminal endoscopic surgery (NOTES): A case study

Cristina Tessier, Likun Zhang, and Caroline G.L. Cao

Department of Mechanical Engineering, Tufts University, United States

Ergonomic risk assessment of nasogastric tube placement and implications for design and training

Oliver Anderson<sup>a</sup>, Peter Buckle<sup>a</sup> and George Hanna<sup>a</sup>

<sup>a</sup>Department of Surgery and Cancer, Imperial College London, UK

Ergonomics of novices and experts during simulated endotracheal intubation

Adam de Laveaga<sup>1</sup>, Michael C. Wadman<sup>2</sup>, Laura Wirth<sup>1</sup> and M. Susan Hallbeck<sup>1</sup>

<sup>1</sup>University of Nebraska, USA <sup>2</sup>University of Nebraska Medical Center, USA

**Date: 15/02**

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**Time: 1:00 – 2:30pm**

### **S40 Ergonomics for Persons with Disabilities 1**

Karen Jacobs and Marcelo Soares (co-chairs)

Review of practices for keeping people with disabilities in employment: moving beyond the concept of compensation to implement a developmental approach

Gaëtan Bourmaud<sup>a,b</sup> & Xavier Rétaux<sup>c</sup>

<sup>a</sup> AXErgonomie – France <sup>b</sup> CNAM / TOF / CRTD / Ergonomics Team – France <sup>c</sup> AXErgonomie - France

Ergonomics and the Inclusion of People with Disabilities in a Brazilian Workplace

Francisco de Paula Nunes Sobrinho<sup>a</sup> and Uilielma Ferreira de Lucena<sup>b</sup>

Rio de Janeiro State University, Brazil

Including the people with disabilities at work: a case study of the job of bricklayer in civil construction in Brazil

Martins, L. B<sup>a</sup>, Guimarães, B. M<sup>b</sup> and Barkokébas Junior, B<sup>c</sup>

<sup>a</sup>Department of Design, Federal University of Pernambuco, Brazil. <sup>b</sup>Department of Design, Federal University of Pernambuco, Brazil <sup>c</sup>Department of Civil Engineering, University of Pernambuco, Brazil

Issues concerning scientific production of including people with disabilities at work

Guimarães, B. M<sup>a</sup>, Martins, L. B<sup>b</sup> and Barkokébas Junior, B<sup>c</sup>

<sup>a</sup>Department of Design, Federal University of Pernambuco, Brazil. <sup>b</sup>Department of Design, Federal University of Pernambuco, Brazil. <sup>c</sup>Department of Civil Engineering, University of Pernambuco, Brazil

METHODOLOGY ANALYSIS FOR A SYSTEMIC MULTIDISCIPLINARY APPROACH TO INCREASE WORKPLACE FUNCTIONING FOR PEOPLE WITH DISABILITIES

Magno, M; Attaianese, E; Duca, G

**Date: 15/02**

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#### **S41 Ergonomics for Persons with Disabilities 2**

Karen Jacobs and Marcelo Soares (co-chairs)

Ergonomic aspects of design of a cap with electronic obstacle detector for use by visually impaired people

Nascimento, N.<sup>a</sup>, Salvado, R.<sup>a</sup>, Araújo, P.<sup>b</sup> and Borges, F.<sup>c</sup>

<sup>b</sup> Institute for Telecommunications, University of Beira Interior, Portugal <sup>c</sup> Federal Institute of Education, Science and Technology of Paraíba, Brazil

Ergonomics, Design Universal and Fashion

Martins, Suzana Barreto. Dr.<sup>a</sup>, Martins, Laura Bezerra. Dr.<sup>b</sup>

<sup>a</sup>State University of Londrina, Department of Design, Brazil. <sup>b</sup>Federal University of Pernambuco, Department of Design, Brazil.

Design of therapeutic clothing for sensory stimulation of children with psychomotor delay

Ângela Pires<sup>a</sup>, Rui Miguel<sup>b</sup>

<sup>a</sup>Catwalk, Portugal <sup>b</sup> Department of Textiles and Fashion, University of Beira Interior, Portugal

Colour and Inclusivity: a Visual Communication Design Project with Older People

Moreira da Silva, Fernando<sup>a</sup>

<sup>a</sup>CIAUD - Research Centre in Architecture, Technical University of Lisbon, Portugal

Chemical Toilet for Persons with Disabilities: proposal for an urban furniture affordable

Tavares, Ademario Santos<sup>a</sup>, Montenegro, Glielson Nepomuceno<sup>b</sup>

<sup>a</sup>Federal University of Campina Grande, Brazil. <sup>b</sup>Federal University of Campina Grande, Brazil.

Inclusive Design - Assistive technology for people with cerebral palsy

Regina Heidrich<sup>a</sup>, Patrícia Bassani<sup>b</sup>

<sup>a</sup>LABIE – Laboratory of Inclusion and Ergonomics, Brazil <sup>b</sup>ICET, University Feevale, Brazil

**Date: 15/02**

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### **S42 Ergonomics for Persons with Disabilities 3**

Karen Jacobs and Marcelo Soares (co-chairs)

**Workstation Customization for individuals with disabilities**

**Uilielma Lucena**

Inclusion of people with disabilities in the production system of a footwear industry

R.S.Bitencourt<sup>a</sup> and L. B. de M. Guimarães<sup>a</sup>

<sup>a</sup>Federal University of Rio Grande do Sul, Brazil

Research The Mobile Phone Operation Interfaces For Vision-Impairment

Yen-Ting Yao<sup>a</sup>, Cherng-Yee Leung<sup>b</sup>

<sup>a</sup>Tatung University, Taipei, Republic of China <sup>b</sup>Department of Industrial Design, Tatung University, Republic of China

**Fixation system and accommodate wheelchair during bus transportation**

**Cardoso, V ; Silva, D**

**Federal University of Amazonas – Brazil**

**SOCIO-DEMOGRAPHIC PROFILE AND ABILITY TO WORK IN WORKERS WITH DISABILITIES IN PHYSICS UNIVERSITY OF PARAÍBA-UFPB/BR**

**Almeida, M.P.**

**Date: 15/02**

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### **S43 Prevention of work-related musculoskeletal disorders in Brazil: results, challenges, and impressions of different experiences (Part I)**

**Chairs: Helenice Jane Cote Gil Coury and Ana Beatriz de Oliveira**

Comparison of randomized and non-randomized controlled trials evidence regarding the effectiveness of workplace exercise on musculoskeletal pain control

RFC Moreira<sup>a</sup>, FA Foltran<sup>a</sup>, F Albuquerque-Sendín<sup>b</sup>, MC Mancini<sup>c</sup> and HJCG Coury<sup>a</sup>

<sup>a</sup>Physical Therapy Department, Federal University of São Carlos, Brazil <sup>b</sup>Physical Therapy Department, University of Salamanca, Spain <sup>c</sup>Occupational Therapy Department, Federal University of Minas Gerais, Brazil

Teaching Ergonomics to undergraduate Physical Therapy students: new methodologies and impressions of a Brazilian experience

Letícia Holtz Barbosa<sup>a</sup> and Maria Helena Câmara Pinheiro<sup>b</sup>

<sup>a</sup>Physiotherapy Department, University Center of Barão de Mauá, Brazil <sup>b</sup>Psychology Department, University of Ribeirão Preto, Brazil

Postural analysis and psychosocial measurements of federal civil servants of an institution of higher education

Rodrigo Carregaro<sup>a</sup>, Juliano Falcão<sup>a</sup>, Karlla Massuda<sup>a</sup>, Daniely Masunaga<sup>a</sup>, Camila Sinzato<sup>a</sup>, Ana Beatriz de Oliveira<sup>b</sup>, Rosimeire S Padula<sup>c</sup>

<sup>a</sup>Federal University of Mato Grosso do Sul (UFMS), Brazil <sup>b</sup>Federal University of São Carlos, Brazil <sup>c</sup>City of São Paulo University, Brazil

Musculoskeletal disorders and psychosocial risk factors among workers of the aircraft maintenance industry

Helen Cristina Nogueira<sup>a</sup>; Ana Carolina Parise Diniz<sup>b</sup>; Dechristian França Barbieri<sup>a</sup>; Rosimeire Simprini Padula<sup>c</sup>; Rodrigo Luiz Carregaro<sup>d</sup> and Ana Beatriz de Oliveira<sup>a,b</sup>

<sup>a</sup>Federal University of São Carlos, Brazil <sup>b</sup>Federal University of São Carlos, Brazil <sup>c</sup>Federal University of Mato Grosso do Sul, Brazil <sup>d</sup>City of São Paulo University, Brazil

Are cutout handles used when available in real occupational settings? Description of grips and upper extremities movements during industrial box handling

Luciana Cristina da Cunha Bueno Silva<sup>a</sup>, Ana Beatriz Oliveira<sup>a</sup>, Michele Elisabete Rubio Alem<sup>a</sup>, Luis Carlos Paschoarelli<sup>b</sup>, Helenice Jane Cote Gil Coury<sup>a</sup>.

<sup>a</sup>Department of Physical Therapy, Federal University of São Carlos, Brazil <sup>b</sup>Department of Industrial Design, São Paulo State University, Brazil

**Date: 15/02**

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**Time: 2:30 – 4:00pm**

**S44 Prevention of work-related musculoskeletal disorders in Brazil: results, challenges, and impressions of different experiences (Part 2)**

**Chairs: Rosimeire Simprini Padula and Tatiana de Oliveira Sato**

The influence of the tasks characteristics in physical performance and psychosocial aspects of workers

Rosimeire Simprini Padula<sup>a</sup>; Juliana Neves Rosina<sup>b</sup>; Cristina Maria Nunes Cabral<sup>a</sup>; Sandra Maria Sbeghen Ferreira de Freitas<sup>a</sup>; Luciana Dias Chiavegato<sup>a</sup>

<sup>a</sup>City of São Paulo University, Brazil <sup>b</sup>City of São Paulo University, Brazil

Furniture dimensions and postural overload for schoolchildren's head, upper back and upper limbs

Mariana Vieira Batistão<sup>a</sup>, Anna Cláudia Sentanin<sup>a</sup>, Cristiane Shinohara Moriguchi<sup>a</sup>, Gert-Åke Hansson<sup>b</sup>, Helenice Jane Cote Gil Coury<sup>a</sup>, Tatiana de Oliveira Sato<sup>a</sup>

<sup>a</sup>Department of Physiotherapy, Federal University of São Carlos, Brazil <sup>b</sup>Department of Occupational and Environmental Medicine, University Hospital, Sweden

INFLUENCE OF DOOR HANDLES DESIGN IN EFFORT PERCEPTION: ACCESSIBILITY AND USABILITY

Luis Carlos Paschoarelli<sup>a</sup>, Raquel Santos<sup>b</sup> and Paula Bruno<sup>c</sup>

<sup>a</sup>Design Department, Paulista State University, Brazil <sup>b</sup>Ergonomics Department, Technical University of Lisbon, Portugal <sup>c</sup>Mathematical Methods Department, Technical University of Lisbon, Portugal

Brazilian version of an assessment tool for the evaluation of work organizational aspects (AOT) by the NIOSH WMSD Research Consortium: Translation and application in industrial sectors  
Mariana V. Batistão<sup>a</sup>, Carolina C. Alcântara<sup>a</sup>, Isabella G. Pissinato<sup>a</sup> and Michele E. R. Alem<sup>a</sup> and Helenice J. C. G. Coury<sup>a</sup>

<sup>a</sup>Department of Physiotherapy, Federal University of São Carlos, Brazil

Need for recovery assessment among nursing professionals and call center operators

Cristiane Shinohara Moriguchi<sup>a</sup>, Taísa Trevizani<sup>a</sup>, Roberta de Fátima Carreira Moreira<sup>a</sup>, Letícia Bergamin Januário<sup>a</sup>, Ana Beatriz de Oliveira<sup>a</sup> and Helenice Jane Cote Gil Coury<sup>a</sup>

<sup>a</sup>Department of Physical Therapy, Federal University of São Carlos, Brazil

Psychosocial risks: acting upon the organisation by ergonomic intervention

Johann Petit<sup>a</sup>, Bernard Dugué<sup>a</sup>

<sup>a</sup>Department Of Ergonomics, Bordeaux Institute of Technology, France

**Date: 15/02**

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**Time: 4:30 – 6:00pm**

**S45 Interactive research as a means for ergonomic improvement of large-scale work systems**

Chairs: Johan Karlton

Outcome Measures and Prognosis of WRMSD

Jerrish A Jose<sup>a</sup>

<sup>a</sup>RECOUP Neuromusculoskeletal Rehabilitation Centre, INDIA

Supervisors in ergonomic change of meat cutting work

Vogel, K.

Department of Ergonomics, KTH Royal Institute of Technology, Sweden

New ways of organizing product introductions

Martina Berglund<sup>a</sup>, Ulrika Harlin<sup>b,c</sup>, Maria Gustavsson<sup>d</sup> and Kristina Säfsten<sup>e</sup>

<sup>a</sup>Department of Management and Engineering, Linköping University, Sweden <sup>b</sup>Swerea IVF, Sweden <sup>c</sup>Department of Product and Production Development, Chalmers University of Technology, Sweden <sup>d</sup>Department of Behavioral Sciences and Learning, Linköping University, Sweden <sup>e</sup>Department of Industrial Engineering and Management, Jönköping University, Sweden

Ten years of experience from interactive ergonomics projects

J., Eklund<sup>a</sup> and J., Karlun<sup>b</sup>

<sup>a</sup>Royal Institute of Technology, Sweden <sup>b</sup> Department of Industrial Engineering and Management, Jönköping University, Sweden

**Date: 15/02**

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**Time: 1:00 – 2:30pm**

#### **S46 Transport Ergonomics and Human Factors 4**

**Chair: Anabela Simões, affiliation???**

Decision Support for Vessel Traffic Service (VTS): User needs for dynamic risk management in the VTS Domain

Gesa Praetorius and Margareta Lützhöft

Department of Shipping and Marine Technology, Chalmers University of Technology, Sweden

Transmitting intended and suggested routes in ship operations: cognitive off-loading by placing knowledge in the world

Thomas Porathe

Department of Shipping and Marine Technology, Chalmers University of Technology, Sweden

New insights, new challenges; Person centred transport design

Andree Woodcock

Department of Industrial Design, Coventry School of Art and Design Coventry University, UK

**From the “terrain” to “territory”: which contributions from mobility and bus drivers’ activity towards local development?**

**Liliana Cunha<sup>a,b</sup> and Marianne Lacomblez<sup>b</sup>**

**<sup>a</sup>Portuguese Catholic University, Portugal <sup>b</sup>University of Porto, Portugal**

Ergonomic investigation on pedestrian crossing with traffic light signalization

Giuseppe Amado<sup>a</sup> and Anamaria de Moraes<sup>b</sup>

<sup>a</sup>Department of Technical Design, Fluminense Federal University, Brazil <sup>b</sup>Department of Arts and Design, Pontifical Catholic University of Rio de Janeiro, Brazil

What does a motorcyclist look at while driving at urban arterials?

Dimitris Nathanael<sup>a</sup>, Evangelia Portouli<sup>a</sup>, Kostas Gkikas<sup>a</sup> and Vassilis Papakostopoulos<sup>b</sup>

<sup>a</sup>National Technical University of Athens, Greece <sup>b</sup>Department of Product and Systems Design Engineering, University of the Aegean, Greece

**Date: 15/02**

**Room: 16**

**Time: 2:30 – 4:00pm**

#### **S47 Transport Ergonomics and Human Factors 5**

**Chair: Anabela Simões, affiliation???**

Skills of novices early trained or traditionally trained versus experienced drivers confronted to simulated urban accidents' scenarios

Catherine Berthelon<sup>a</sup>, Loïc Damm<sup>b</sup>

<sup>a</sup>IFSTTAR, France <sup>b</sup>University of Exeter, United Kingdom

Factors and motives of unsafe behaviors of road users

H. Boudrifa, A. Bouhaf, M. Touil<sup>1</sup> and F. Tabtroukia

University of Algiers, Algeria.

Assessment of Cognitive Workload of In-Vehicle Systems Using a Visual Peripheral and Tactile Detection Task Setting

Klaus Bengler<sup>a</sup>, Martin Kohlmann<sup>a</sup>, Christian Lange<sup>b</sup>

<sup>a</sup>Technical University of Munich, Germany <sup>b</sup>Ergoneers, GmbH, Germany

**A methodology to evaluate long-term drivers' acceptance of a "Blind Spot Detection" system**  
Piccinini, G; Simões, A; Rodrigues, C; Leitão, M

Ergonomic evaluation of a wheelchair transportation securement system

Madiha Ahmed <sup>a</sup>, Naira Campbell-Kyureghyan <sup>a</sup>, Karen Frost <sup>b</sup>, Gina Bertocci <sup>b</sup>

<sup>a</sup>Industrial and Manufacturing Engineering Department, University of Wisconsin-Milwaukee, USA <sup>b</sup>Mechanical Engineering Department, University of Louisville, USA

**Date: 15/02**

**Room: 16**

**Time: 4:30 – 6:00pm**

**S48 Transport Ergonomics and Human Factors 6**

**Chair: Anabela Simões, affiliation???**

**Ergonomics applied to flight attendants in South American airline**  
Vélez, M

Aircraft accident investigation: the decision-making in initial action scenario.

Marcia M. Barreto<sup>a</sup>, Selma L. O. Ribeiro<sup>b,c</sup>

<sup>a,b</sup>Technological Institute of Aeronautics (ITA), Brazil <sup>b</sup>National Institute for the Spatial and Aeronautical Development - IDEA, Brazil <sup>c</sup>Estácio de Sá University, Brazil

Aircraft Seating Comfort: The influence of seat pitch on passengers' well-being

Florian Kremser<sup>a</sup>, Fabian Guenzkofer<sup>a</sup>, Claudia Sedlmeier<sup>a</sup>, Olaf Sabbah<sup>b</sup> and Klaus Bengler<sup>a</sup>

<sup>a</sup>Technical University of Munich, Germany <sup>b</sup>RECARO Aircraft Seating GmbH & Co.KG, Germany

**Research of injuries of passengers in city buses as a consequence of non-collision effects**

Aleksandar Zunjic<sup>a</sup>, Vladimir Sremcevic<sup>b</sup>, Vera Zeravcic Sijacki<sup>a</sup> and Ana Sijacki<sup>c</sup>

<sup>a</sup>University of Belgrade, Serbia <sup>b</sup>Muzicka skola Mokranjac, Serbia <sup>c</sup>University of Belgrade, Serbia

Low-Floor Bus Design Preferences of Walking Aid Users during Simulated Boarding and Alighting  
Clive D'Souza<sup>a,b</sup>, Victor Paquet<sup>a,b</sup>, James Lenker<sup>a,c</sup>, Edward Steinfeld<sup>a,d</sup> and Piyush Bareria<sup>a,b</sup>

<sup>a</sup>University at Buffalo, USA <sup>b</sup>Department of Industrial and Systems Engineering, University at Buffalo, USA <sup>c</sup>Department of Rehabilitation Science, University at Buffalo, USA <sup>d</sup>Department of Architecture and Planning, University at Buffalo, USA

**Date: 15/02**

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**Time: 1:00 – 2:30pm**

#### **S49 Risk Assessment and Interventions in Agriculture**

**Chair: Fadi Fathallah, University of California – United States**

Ergonomic factors and production target evaluation in eucalyptus timber harvesting operations in mountainous terrains

Amaury Paulo de Souza, M.S., Ph.D.<sup>a</sup>, Luciano José Minette, M.S, D.S.<sup>b</sup>, André Luis Petean Sanches, Forest Engineer, Graduate Student<sup>c</sup>, Emília Pio da Silva, D.S, Forest Science<sup>d</sup>; Valéria Antônia Justino Rodrigues, Environmental Engineer, M.S.<sup>e</sup>, Luciana Aparecida de Oliveira, B.S. in Home Economics<sup>f</sup>

<sup>a,b,c,d,e,f</sup>Forest Engineering Department, Federal University of Viçosa, Brazil

Protective gloves on manual sugar cane cutting are really effective?

Abrahão, R.F.<sup>a</sup>, Gonzaga, M.C.<sup>b</sup> and Braunbeck, O.A.<sup>a</sup>

<sup>a</sup>Campinas State University, Brazil <sup>b</sup>Ministry of Labor and Employment, Brazil

Impacts of introducing a new tool for the manual harvesting of sugar cane: the ergonomic analysis contribution

Souza, C. D. R., FILHO, A. B. G. J., SILVA, R. A. V.

University Center - SENAC - Ribeirão Preto, SP, Brazil

Ergonomic Rice Transplanter for Filipino Farmers

Seva, Casino

De La Salle University-Manila, Philippines

A randomized intervention trial to reduce mechanical exposures in the Colombian flower industry

Barrero LH<sup>a</sup>, Ceballos C<sup>b</sup>, Ellegast R<sup>c</sup>, Pulido JA<sup>a</sup>, Monroy M<sup>a</sup>, Berrio S<sup>a</sup> and Quintana LA<sup>a</sup>

<sup>a</sup>Department of Industrial Engineering, Pontifical University Javeriana, Colombia <sup>b</sup>A.R.P. SURA, Colombia <sup>c</sup>IFA – Institute for Occupational Safety and Health of the German Social Accident Insurance, Germany

Work and technological innovation in organic agriculture

Tereso, M.J.A.<sup>a</sup>, Abrahão, R.F.<sup>a</sup>, Gemma, S.F.B.<sup>b</sup>, Montedo, U.B.<sup>c</sup>, Menegon, N.L.<sup>d</sup>, Guarneti, J.E.<sup>e</sup>, Ribeiro, I.A.V.<sup>a</sup>

<sup>a</sup>Campinas State University, Brazil <sup>b</sup>Campinas State University, Brazil <sup>c</sup>São Paulo University, Brazil <sup>d</sup>Federal University of São Carlos, Brazil <sup>e</sup>São Paulo State University, Brazil

**Date: 15/02**

**Room: 17**

**Time: 2:30 – 4:00pm**

**S50 Health Hazards in Agriculture**

**Chair: Fadi Fathallah, University of California – United States**

Thermal comfort and personal protective equipment (PPE)

Ronaldo André Castelo dos S. de Almeida<sup>a</sup>, Marcelo Motta Veiga<sup>a,b</sup>, Francisco José de Castro Moura Duarte<sup>c</sup>, Luiz Antônio Meirelles<sup>c</sup>, and Lilian Bechara Elabras Veiga<sup>c</sup>

<sup>a</sup>Environmental Health Department, Oswaldo Cruz Foundation, Ministry of Health, Brazil

<sup>b</sup>Strategic Management Department, Federal University of Rio de Janeiro State, Brazil <sup>c</sup>COPPE, Federal University of Rio de Janeiro, Brazil

Occupational Health Hazards & Efficacy of Protective Masks in Threshing Operation

Sudesh Gandhi<sup>a</sup>, M. Dilbaghi<sup>b</sup>, M. Mehta<sup>c</sup> and Neelam Pruthi<sup>d</sup>

<sup>a</sup>Department of Family Resource Management, COHS, CCSHAU, India. <sup>b</sup>Department of Family Resource Management, COHS, CCSHAU, India. <sup>c</sup>Department of Family Resource Management, COHS, CCSHAU, India. <sup>d</sup>Department of Textile and Apparel Designing, COHS, CCSHAU, India.

Family farming workers mental health in a microrregion in southern Brazil

Ângela Regina Poletto<sup>a</sup>, Leila Amaral Gontijo<sup>b</sup>

<sup>a</sup>Federal Institute of Education, Brazil <sup>b</sup>Federal University of Santa Catarina, Brazil

Pesticide exposure and sprayer's task goals: comparison between vineyards and greenhouses.

Mandy Lambert<sup>a</sup>, James Richardson<sup>a,b</sup> and Sonia Grimbuhler<sup>a</sup>

<sup>a</sup>Cemagref: Research Unit "technologies for safety and performance of agricultural equipment, France <sup>b</sup>University Paris Sud XI, France

Reducing orchard workers exposure to pesticide products: an ergo-toxicological approach

Grimbuhler, S ; Richardson, J ; Darses, F ; Moget, C (sem a letra inicial)

The Institute for Research in Science and Technology Environment, University of Paris-Sud, Computer Science Laboratory for Mechanics and Engineering Sciences - France

**Date: 15/02**

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**S51 Innovation and Intervention Evaluation in Agriculture**

**Chair: Fadi Fathallah, University of California – United States**

Intervention of drudgery reducing technologies in agriculture and impact evaluation

Manju mehta, Sudesh gandhi and Mamta dilbaghi,

Deptt. of Family Resource Management, College of Home Science, CCS Haryana Agricultural University, India

From Farmer to Wage Earner: Changing Work Practices in Mozambique's Agro-Forestry Villages  
Paul, Couvinhas

Innovation – decision behaviour of tribal women of Udaipur District regarding vermiculture technology

Latika Vyas

Maharana Pratap University of Agriculture and Technology, INDIA

Usability study of a vineyard teleoperation compost spreader

Ester Ferrari and Eugenio Cavallo

Italian National Research Council (CNR), Italy

Difficulties related to work in the certification process for organic production

Sandra Francisca Bezerra Gemma

School of Applied Sciences, University of Campinas, UNICAMP, Brazil

An Ergonomics Approach to Citrus Harvest Mechanization

Simone Emmanuelle Alves Costa<sup>a</sup>, João Alberto Camarotto<sup>a</sup>

<sup>a</sup> Department of Production Engineering, Federal University of Sao Carlos, Brazil

**Date: 16/02**

**Room: 01**

**Time: 1:00 – 2:30pm**

**S52 Last 30 years of the IEA**

Patrick Waterson (chair)

The recent history of the IEA: an analysis of IEA Congress presentations since 1961

Patrick Waterson<sup>1</sup>, Pierre Falzon<sup>2</sup> and Flore Barcellini<sup>2</sup>

<sup>1</sup>Loughborough University, UK <sup>2</sup>Laboratory of Ergonomics, France

Emerging role of human factors and ergonomics in healthcare delivery – A new field of application and influence for the IEA

Pascale Carayon<sup>a</sup>

<sup>a</sup>Department of Industrial and Systems Engineering, University of Wisconsin-Madison, USA

Recurring issues in the IEA, the discipline and the profession of ergonomics/human factors

John R Wilson

University of Nottingham, UK

**Date: 16/02**

**Room: 01**

**Time: 2:30 – 4:00pm**

**S53 The new challenges of future vehicle HMI design, towards safer and positive experience**

**Chair: Fang Chen**

**Chalmers University of Technology, Sweden**

How Shall We Design the Future Vehicle for Chinese Market

Fang Chen, MinJuan Wang<sup>a</sup>, Xi Chan Zhu<sup>b</sup>, Jiaqi Li<sup>b</sup>

<sup>a</sup>Interaction Design, Institute of Apply IT, Chalmers University, Swedens <sup>b</sup>Safety Research, Institute of Automobile, Tongji University, China

Using Naturalistic Driving Films as a Design Tool for Investigating Driver Requirements in HMI Design for ADAS

Minjuan Wang<sup>a</sup>, Dong Sun<sup>b</sup>, and Fang Chen<sup>c</sup>

<sup>a,b,c</sup> Interaction design department, Chalmers University of Technology, Sweden

Methodical aspects of text testing in a driving simulator

Sundin A<sup>a</sup>, Patten C.J.D.<sup>b</sup>, Bergmark M<sup>a</sup>, Hedberg A<sup>a</sup>, Iraeus I-M<sup>c</sup>, Pettersson I<sup>c</sup>

<sup>a</sup>Semcon AB, Sweden <sup>b</sup>Swedish National Road and Transport Research Institute, Sweden <sup>c</sup>Volvo Car Corporation, Sweden

The use of Affective Interaction Design in Car User Interfaces

Dimitrios Gkouskos<sup>a</sup> and Fang Chen<sup>b</sup>

<sup>a,b</sup>Department of Interaction Design, Chalmers University of Technology, Sweden

Countermeasure Drowsiness by Design - Using Common Behaviour

Staffan Davidsson<sup>a</sup>

<sup>a</sup>Luleå University of technology, Sweden and Volvo Cars Corporation

Towards a model to interpret driver behaviour in terms of mismatch between real world complexity and invested effort

Robert Broström<sup>a,b</sup> and Staffan Davidsson<sup>a,b</sup>

<sup>a</sup> Vehicle HMI-Dept 94750, Driver Interaction & Infotainment, Volvo Car Corporation PV32, Göteborg, Sweden <sup>b</sup> Engineering Psychology, Luleå University of Technology, Luleå, Sweden

**Date: 16/02**

**Room: 02**

**Time: 1:00 – 2:30pm**

**S54 New world of work and its effects on comfort, health and productivity**

Chair: Peter Vink, Delft University of Technology

Co-moderators: M. Blok and M. Robertson

New Ways of Working: does flexibility in time and location of work change work behavior and affect business outcomes?

Merle M. Blok, Liesbeth Groenesteijn, Roos Schelvis and Peter Vink

TNO, the Netherlands

The effects of new ways of work in the Netherlands: national data and a case study

P. Vink, M. Blok, E. de Korte, M. Blok, L. Groenesteijn

TNO/ Delft University of Technology, the Netherlands

**Some differences in the approach of new ways work in the USA and the Netherlands**

**M. Robertson<sup>a</sup>, P. Vink<sup>b</sup>**

**<sup>a</sup>Liberty Mutual, USA, <sup>b</sup>TNO, the Netherlands**

Development of an office ergonomics program

N.Larson

3M, USA

Expectation Changes and Team Characteristics in a Participatory Design Process

Conne Mara Bazley, Annelise de Jong, Peter Vink

Jimconna, USA

Participatory ergonomics and new work: reducing neck complaints in assembling

S.A. Miguez, M.S. Hallbeck, P. Vink

Ergosys, Brazil

**Date: 16/02**

**Room: 02**

**Time: 2:30 – 4:00pm**

**S55 Design and Evaluation of Work Systems for Aging Employees**

Christopher Schlick (chair)

Influences of mechanical exposure biographies on physical capabilities of workers from automotive industry – a study on possible dose-response relationships and consequences for short and long term job rotation

Holger Rademacher<sup>a</sup>, Ralph Bruder<sup>a</sup>, Andrea Sinn-Behrendt<sup>a</sup> and Kurt Landau<sup>a</sup>

<sup>a</sup>Department of Mechanical Engineering, Technical University of Darmstadt, Germany

Impact of increasing productivity on work content and psychosocial work characteristics in Chaku-Chaku assembly lines - A follow-up study in a German automotive manufacturing company

José-Alonso Enríquez-Díaz, Daniel Kotzab, Alina Sytch and Ekkehart Frieling

Department of Work and Organizational Psychology, University of Kassel, Germany

Consolidated findings from 6 years research on the age-differentiated design of human-computer interaction

Sebastian Vetter, Jennifer Bützler, Nicole Jochems and Christopher M. Schlick

RWTH Aachen University, Germany

Promoting work ability and well-being in hospital nursing: The interplay of age, job control, and successful ageing strategies

Andreas Müller, Matthias Weigl, Barbara Heiden, Jürgen Glaser, and Peter Angerer

University Munich, Germany

What makes age diverse teams effective? Results from a six-year research program

Wegge, J.<sup>a</sup>, Jungmann, F.<sup>a</sup>, Liebermann, S.<sup>a</sup>, Shemla, M.<sup>a</sup>, Ries, B.C.<sup>b</sup>, Diestel, S.<sup>b</sup> and Schmidt, K.-H.<sup>b</sup>

<sup>a</sup>Technical University Dresden, Germany <sup>b</sup>Leibniz Research Centre for Working Environment and Human Factors, Technical University Dortmund, Germany

Aging: Physical Difficulties and Safety in Cooking Tasks

N. I Ibrahim<sup>a,b</sup> and S. Davies<sup>b</sup>

<sup>a</sup>University of Malaysia Perlis (UniMAP), Malaysia <sup>b</sup>Coventry University, UK

**Date: 16/02**

**Room: 03**

**Time: 1:00 – 2:30pm**

### **S56 Neuroergonomics, Technology and Cognition**

Raja Parasuraman (chair)

Attention: The chair confirmed that only one paper will be submitted to this session.

Symposium: Neuroergonomics, technology, and cognition

Raja Parasurama , Carryl L. Baldwin, Benjamin Knott, Joel S. Warm, Victor Finomore, Deborah Boehm-Davis, and Scott M. Galster

Department of Psychology, George Mason University, 4400 University Drive, Fairfax, VA 22030, USA

Air Force Research Laboratory, 711 Human Performance Wing, Wright-Patterson AFB OH 45433, USA

**Date: 16/02**

**Room: 04**

**Time: 1:00 – 2:30pm**

### **S57 Ergonomics Analysis of Work and Training: Part 1 - Transmission and construction of knowledge in work situations**

Co-chairs: Céline Chatigny and Sylvie Ouellet

The influence of flexible management practices on the sharing of experiential knowledge in the workplace: a case study of food service helpers

Elise Ledoux<sup>a</sup>, Esther Cloutier<sup>a</sup>, Pierre-Sébastien Fournier<sup>b</sup>

<sup>a</sup>Institut de recherche Robert-Sauvé en santé et sécurité du travail, Canada <sup>b</sup>Management Department, Laval University, Canada

Specialisation and training for fire-fighters driving heavy rescue vehicles: consequences for the development of operators?

Christine Vidal-Gomel<sup>a</sup>, Catherine Delgoulet<sup>b</sup> and Déborah Gébaï<sup>c</sup>

<sup>a</sup>Department of Education Sciences, University of Nante, France <sup>b</sup>University Paris Descartes, France. <sup>c</sup>ERGO nova, France

Coordination meetings as a means of fostering collective learning among jury members involved in the validation of prior learning (VPL)

Cortessis Sandrine

Swiss Federal Institute for Vocational Education and Training, Switzerland.

Active participation in preventionist professional practices: a specific ergonomics training course

Léonard Querelle<sup>a</sup>, Michel Duwelz<sup>b</sup>, Joffrey Beaujouan<sup>c</sup> and Anne Pignault<sup>d</sup>

<sup>a</sup> European Ergonomist, Ergonomie & Conception, France <sup>b</sup> National Institute of Research and Safety, France <sup>c</sup> Polytechnic Institute of Bordeaux, France <sup>d</sup> University Paris West, France

Landscaping: Teamwork and integration into inter-individual coordination as a learning situation  
Patrick Mayen<sup>a</sup>, and Paul Olry<sup>b</sup>

<sup>a</sup> Department of Humanities and Social Sciences, Agrosup Dijon, France <sup>b</sup> Department of Humanities and Social Sciences, Agrosup Dijon, France

**Date: 16/02**

**Room: 04**

**Time: 2:30 – 4:00pm**

**S58 Ergonomics Analysis of Work and Training: Part 2 - Analysis of trainers' and teachers' activities and their pedagogical views (or the consequences thereof)**

Co-chairs: Marie Laberge and Céline Chatigny

Being a trainer in the French vocational training system: a case study of job status and working conditions in relation to perceived health

Catherine Delgoulet<sup>ab</sup>

<sup>a</sup> University Paris Descartes, France <sup>b</sup> Center of Study of Employment, France

Conditions, demands and constraints on trainers' activity: a case study in the Portuguese context  
Marta Santos<sup>a</sup> and Andreia Ferreira<sup>b</sup>

<sup>a</sup> University of Porto, Portugal <sup>b</sup> University of Porto, Porto, Portugal

"Obey", "disobey" or "tinker with" reforms to the system: a subject for French teacher trade unions to work on

Dominique Cau-Bareille

Lyon Institute of Study of Work (IETL), University of Lyon 2, France

Physical education and sport teachers' health : from expressed ill-being to hindrances of action  
Coutarel, Fabien, and Fiard, Jacques

University of Clermont, University Blaise Pascal, France

What is learned during the first moments of work?

Claire Tourmen<sup>a</sup>, Annie Leroux<sup>b</sup> and Sylvie Beney<sup>c</sup>

<sup>a</sup> AgroSup Dijon, France <sup>b</sup> CARSAT de Bourgogne, France

**Date: 16/02**

**Room: 16**

**Time: 1:00 – 2:30pm**

**S59 Prospective ergonomics 1: approaches and principles**

Chair: Pr. Jean-Marc Robert, Canada.

Prospective ergonomics : origin, goal, and prospects.

J-M. Robert (École Polytechnique de Montréal, Canada) & E . Brangier (Université Paul Verlaine

– Metz, France)

Innovation and design approaches within prospective ergonomics.

A. Liem (Norwegian University of Science and Technology, Trondheim, Norway) & E. Brangier (Université Paul Verlaine – Metz, France)

Cognitive chrono-ethnography: a methodology for anticipating future user needs.

M. Kitajima (National Institute of Advanced Industrial Science and Technology, Japan).

Ethical issues raised by the new orientations in ergonomics and living labs.

J. Barcenilla (Université Paul Verlaine – Metz, France) & Ch. Tijus (Université Paris 8, France).

Measuring a product's usefulness.

F. Aubin, H. Atoyan, (Cognitive Group Inc., Canada), J-M. Robert (École Polytechnique de Montréal, Canada), & T. Atoyan (McGill University, Canada).

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**Time: 2:30 – 4:00pm**

### **S60 Prospective ergonomics 1: methods and cases studies**

**Chair: Pr. Eric Brangier, France.**

Anticipating needs and designing new items rapidly - a case study for the design of postural aid equipment.

M-C. Prévost, & D. Spooner, (Designfabrik, Canada).

Drivers' safety needs, behavioural adaptations and acceptance of new driving support systems.

F. Saad, & P. Van Elslande (IFSTTAR, France).

Activity analysis: contributions to the innovation of projects for aircrafts cabins.

Rossi, N. T.; Gregghi, F. M.; Menegon, L. N. & Souza, G.B.J (Universidade Federal de São Carlos, Brazil).

Designing future products: What difficulties do designers encounter and how can their creative process be supported?

Nathalie Bonnardel<sup>a,b</sup>

<sup>a</sup>Aix-Marseille University, France <sup>b</sup>I.U.F. (University Institute of France), France

**Date: 16/02**

**Room: 17**

**Time: 1:00 – 2:30pm**

### **S61 Agricultural Health and Safety and Ergonomics in Sweden**

**Chair: Fadi Fathallah, University of California – United States**

Health and safety strategy in Swedish agriculture

Peter Lundqvist, Catharina Alwall Svennefelt  
Department of Work Science, Swedish University of Agricultural Sciences, Sweden

The Farrier's Work Environment

Lotta Löfqvist<sup>a</sup> and Stefan Pinzke<sup>a</sup>

<sup>a</sup>Department of Work Science, Swedish University of Agricultural Sciences, Sweden

What factors attract and motivate dairy farm employees in their daily work?

Christina Lunner Kolstrup

Department of Work Science, Swedish University of Agricultural Sciences, Sweden

Ergonomics in animal production in Sweden - research, development and education

P. Lundqvist

Swedish University of Agricultural Sciences, Sweden

Tractor accidents in Swedish traffic

Stefan Pinzke<sup>a</sup>, Kerstin Nilsson<sup>a,b</sup>, Peter Lundqvist<sup>a</sup>

<sup>a</sup>Department of Work Science, Business Economics and Environmental Psychology, Swedish University of Agricultural Sciences, Sweden. <sup>b</sup>Department of Occupational and Environmental Medicine, Lund university, Sweden

Occupational Accidents Among Elderly Farmers in Sweden

Kerstin Nilsson<sup>a,b</sup> and Stefan Pinzke<sup>a</sup>

<sup>a</sup> Department of Work Science, Business Economics and Environmental Psychology, Swedish University of Agricultural Sciences, Sweden <sup>b</sup> Department of Occupational and Environmental Medicine, Lund University, Sweden

**Date: 16/02**

**Room: 17**

**Time: 2:30 – 4:00pm**

**S62 Musculoskeletal Disorders in Agriculture**

**Chair: Fadi Fathallah, University of California – United States**

Social partners cooperation for reduction of musculoskeletal disorders in agriculture

Veerle Hermans<sup>a,b</sup>, David O'Neill<sup>c</sup>, Roeland Motmans<sup>a</sup>, Peter Lundqvist<sup>d</sup> and Danuta Roman-Liu<sup>e</sup>

<sup>a</sup>Department of Ergonomics, IDEWE, External Prevention Service for Safety and Health at Work, Belgium <sup>b</sup>Department of Work Psychology, Vrije Universiteit Brussel, Belgium <sup>c</sup>Department of Ergonomics, University of Loughborough, UK <sup>d</sup>Department of Agricultural Biosystems and Technology, Swedish University Agricultural Sciences, Sweden <sup>e</sup>Biomechanics Laboratory, CIOP, Poland

Relationship between productivity, quality and musculoskeletal disorder risk among deboning workers in a Chilean salmon industry

Ilardi, Juan S.<sup>a</sup>

<sup>a</sup>Institute of Work safety, Chile.

Ergonomics and Design in the Brazilian Agricultural Sector: A Proposal to build matrix of contradictions

Thaís Tosetto<sup>a</sup>, João Alberto Camarotto<sup>b</sup>

<sup>a</sup>Industrial Engineer Department, Federal University of São Carlos, Brazil. <sup>b</sup>Industrial Engineer Department, Federal University of São Carlos, Brazil

Ergonomic analysis in the bagging of grain equipment: unsuitability of the workstation

Mariño, S ; Lemos, L

Bahia State University, Federal University of Bahia, National Service for Industrial Training – Brazil

Workload composition of the organic horticulture

Abrahão, R.F.<sup>a</sup>, Ribeiro, I.A.V.<sup>a</sup> and Tereso, M.J.A.<sup>a</sup>

<sup>a</sup>Faculty of Agriculture Engineering, Campinas State University, Brazil

**Date: 16/02**

**Room: 03**

**Time: 2:30 – 4:00pm**

### **S63 How assess an Employee with Work Related Musculoskeletal Disorder?**

Chair: Deepak Sharan

Assessment of Psychosocial Risk Factors

Deepak Sharan<sup>1</sup>

<sup>1</sup>RECOUP Neuromusculoskeletal Rehabilitation Centre, Bangalore, INDIA

Physical examination, Special tests and Investigations for the diagnosis of WRMSD

Deepak Sharan<sup>1</sup>

<sup>1</sup>RECOUP Neuromusculoskeletal Rehabilitation Centre, Bangalore, INDIA

Ergonomic Workplace Analysis (EWA)

Deepak Sharan<sup>1</sup>

<sup>1</sup>RECOUP Neuromusculoskeletal Rehabilitation Centre, Bangalore, INDIA.

History Taking

Jerrish A Jose<sup>a</sup>

<sup>a</sup>RECOUP Neuromusculoskeletal Rehabilitation Centre, INDIA