First International Conference on

Driver Distraction and Inattention

28–29 September 2009
Gothenburg, Sweden

FINAL PROGRAM

Venue: Lindholmen Conference Centre, Lindholmspiren 5, 4th floor, Lindholmen Science Park, Gothenburg

Phone number to Visitor Centre, Lindholmen Science Park: +46 31 764 70 00

Web: www.chalmers.se/safer/driverdistraction-en

PROGRAM OVERVIEW

DAY 1 – SEPTEMBER 28TH			
8.00-9.30 am	*Registration & Coffee*		
9.30-10.00 am	**PLENARY SESSION - ROOM A** **Welcome addresses**		
10.00-11.00 am	**Keynote Address 1:** Prof. Peter Hancock, University of Central Florida, USA: "*On the Nature of Distraction: Driving Beyond the Biases of Hindsight*"		
11.00-11.30 am	*Coffee break*		
11.30-1.00 pm **CONCURRENT SESSIONS**	**Session 1: Distraction – Theory and definition** **ROOM B**	**Session 2: Distraction – Measurement 1** **ROOM A**	**Session 3: Visual and Attentional Processes 1** **ROOM C**
1.00-2.00 pm	*Lunch - Restaurant Tres, ground floor*		
2.00-3.30 pm **CONCURRENT SESSIONS**	**Session 4: Distraction – Measurement 2** **ROOM C**	**Session 5: Distraction – Effects on Driving Performance 1** **ROOM B**	**Session 6: Visual and Attentional Processes 2** **ROOM A**
3.30-4.00 pm	*Coffee break*		
4.00-5.30 pm **CONCURRENT SESSIONS**	**Session 7: Distraction – Effects on Driving Performance 2** **ROOM B**	**Session 8: Distraction – Crashes and Crash Risk** **ROOM A**	**Session 9: Visual and Attentional Processes 3** **ROOM C**
5.30-5.45 pm	**Wrap Up Day 1** **ROOM A**		
7.30 pm	***Conference Dinner at Universeum Science Center*** **Dinner Speaker:** Carl Johan Almqvist, Safety Director, Volvo Truck Corporation		

PROGRAM OVERVIEW

DAY 2 – SEPTEMBER 29th			
8.00-9.00 am	*Registration & Coffee*		
9.00-9.15 am	**PLENARY SESSION - ROOM A** **Welcome addresses**		
9.15-10.15 am	**Keynote Address 2:** Michael Perel, National Highway Traffic Safety Administration (NHTSA), retired: *"A U.S. Perspective on Driver Distraction: Problems, Progress, Priorities"*		
10.15-10.45 am	*Coffee break*		
10.45-12.15 pm **CONCURRENT SESSIONS**	**Session 10: Distraction Prevention and Mitigation – HMI Design** **ROOM A**	**Session 11: Distraction Prevention and Mitigation – Technology Design 1** **ROOM C**	**Special Symposium 1: Impact of mental workload on the driving task: a psychological and neurophysiological approach** **ROOM B**
12.15-1.15pm	*Lunch – Restaurant Tres, ground floor*		
1.15pm-2.15pm	**PLENARY SESSION – ROOM A** **Keynote Address 3:** Prof. Claes Tingvall, Swedish Road Administration: "*Vision Zero and Distraction*"		
2-15-3.45pm **CONCURRENT SESSIONS**	**Session 12: Distraction – Distraction and Mitigation – Technology Design 2** **ROOM C**	**Special Symposium 2: Digital Billboards and Driver Distraction** **ROOM A**	**Session 13: Drowsy Driving and Inattention** **ROOM B**
3.45-4.15pm	*Coffee break*		
4.15-5.45pm **PLENARY SESSION**	**Special Symposium 3: Distraction – Priorities for Research and Countermeasure Development** **ROOM A**		
5.45-6.00pm	**Closing remarks** **ROOM A**		

DAY 1 – SEPTEMBER 28TH

8.00-9.30 am	*Registration & Coffee*
	PLENARY SESSION – ROOM A
9.30-10.00 am **ROOM A**	**Welcome addresses** Michael Regan, INRETS, Co-Chair Trent Victor, SAFER, Co-Chair Anna Nilsson-Ehle, director SAFER Stefan Bengtsson, First Vice President and Vice CEO, Chalmers University of Technology Lisa Knutsson, Communication Manager, SAFER
10.00-11.00 am **ROOM A**	**Keynote Address 1** Prof. Peter Hancock, University of Central Florida, USA "*On the Nature of Distraction: Driving Beyond the Biases of Hindsight*" Chair: Adj. Prof. Michael Regan, INRETS
11.00-11.30 am	*Coffee break*
11.30-1.00 pm	**CONCURRENT SESSIONS**
ROOM B	**Session 1: Distraction – Theory and definition** **Chair:** Michael Regan, INRETS • **A56-P Driver Distraction: Toward A Common Definition** M. A. Regan[1], J. D. Lee[2] & K. L. Young[3] [1] INRETS, France [2]University of Iowa, USA [3]Monash University Accident Research Centre, Australia • **A21-P Driver distraction and inattention: a queuing theory approach** J. W Senders University of Toronto, Canada • **A48-P The relationship between driver distraction and mental workload** T.W. Schaap[1], A.R.A van der Horst[2], B. van Arem[3] & K.A. Brookhuis[4] [1]University of Twente, Centre for Transport Studies, The Netherlands [2]TNO Defence, Security and Safety, BU Human Factors, The Netherlands [3]Delft University of Technology, Civil Engineering and Geosciences, The Netherlands [4] Delft University of Technology, Faculty of Technology, The Netherlands • **A64-P Behavioural adaptation to mobile phone legislation: Could there be unintended consequences of partial bans?** C. M. Rudin-Brown, K. L. Young & M. G. Lenné Monash University Accident Research Centre, Australia
ROOM A	**Session 2: Distraction – Measurement 1** **Chair:** Kristie Young, Monash University Accident Research Centre • **A24-P Development and Validation of a Naturalistic Driver Distraction Evaluation Tool** K. L. Young, M. G. Lenné, J. Archer & A. Williamson Monash University Accident Research Centre, Australia • **A30-O Research challenges and opportunities in the study of driver distraction by technology use through naturalistic methods** N. van Nes[1,2], M. Christoph[1], K. Young[2], D. Logan[2], M. Lenne[2] [1] SWOV Institute for Road Safety Research, The Netherlands [2] Monash University Accident Research Centre, Australia • **A37-P Intrusiveness of visual detection task on secondary and driving task performances** R. K. Chilakapati[1], R. Broström[2] & A. Rydström[3] [1] Chalmers University of Technology, Sweden [2]Volvo Car Corporation, Sweden [3]Luleå University of Technology, Sweden • **A70-O A naturalistic survey of driving distractions in England** M. J.M. Sullman School of Psychology, University of Hertfordshire, United Kingdom

ROOM C	**Session 3: Visual and Attentional Processes 1** **Chair:** Candida Castro, University of Granada • **A1-P How is driving related attention in driving with visual secondary tasks controlled? – Evidence for top-down attentional control** B. Metz, N. Rauch & H-P. Krueger Centre for Traffic Sciences (IZVW), University of Wuerzburg, Germany • **A2-P Un-experienced vs. Experienced drivers. Limitations of Human Attention. An analysis of their THREE ATTENTIONAL NETWORKS** C. Castro[1], D. Crundall[2], Chapman[2], S. Trawley[2] & G. Underwood[2] [1]Facultad de Psychology, Universidad de Granada, Spain [2]School of Psychology, University of Nottingham, United Kingdom • **A3-O Attentional Inefficiency And Driving Distraction: Limits Of Alertness And Vigilance, Orienting And Executive Control** C. Castro, J. Roca, M.F. López & J. Lupiañez Facultad de Psychology, Universidad de Granada, Spain • **A4-P Redundant head-up and head-down display configurations and distraction due to common secondary automobile tasks** C. J. Normark[1], P. Tretten[1] & A. Gärling[2] [1] Department of Human Work Sciences, Division of Industrial Design [2] Department of Human Work Sciences, Division of Engineering Psychology Luleå University of Technology, Sweden
1.00-2.00 pm	*Lunch - Restaurant Tres, ground floor*
2.00-3.30 pm	**CONCURRENT SESSIONS**
ROOM C	**Session 4: Distraction – Measurement 2** **Chair:** Terry Lansdown, Heriot-Watt University • **A50-P Frequency and Severity of In-Vehicle Distractions – A Self-Report Survey** T. C. Lansdown Applied Psychology, Heriot-Watt University, United Kingdom • **A53-O Driving Scenarios: Translating experiences of stress and distraction into simulator experiments and training tools** U. Lauper Parallel Consulting LLC, USA • **A60-O The LCT – a valid measure to assess driver distraction?** T. Petzoldt, N. Bär, C. Ihle & J. F. Krems Chemnitz University of Technology, Germany • **A26-P A method to detect inappropriate postures causing distraction via analysis of pressure distribution on the driving seat** M. Itoh & T. Inagaki Department of Risk Engineering, University of Tsukuba, Japan
ROOM B	**Session 5: Distraction – Effects on Driving Performance 1** **Chair:** Katja Kircher, VTI • **A18-P Driving whilst using in-vehicle information systems (ivis): benchmarking the impairment to alcohol** T. Wynn[1], J. H. Richardson[2] and A. Stevens[3] [1]Health and Safety Laboratory, United Kingdom [2]ESRI, Loughborough University, United Kingdom [3]TRL, United Kingdom • **A20-O Driver distraction due to listening on the mobile phone: Have we overlooked the distinction between different types of listening tasks?** J. Irwin[1], E. Ma[1], E. Chekaluk[1] & I. Faulks[2] [1]Department of Psychology, Macquarie University, Australia [2]Safety and Policy Analysis International, Australia • **A58-O The Moonwalking Bear Problem: Pedestrian perception as a natural proxy for driver attentiveness and the existing supportive frameworks** D. D. Levinger Transportation Usability Consulting, USA • **A71-O Definition of driving risk by mixture of experts** I. Mart´ın de Diego, C. Conde and E. Cabello University Rey Juan Carlos, Spain

ROOM A	**Session 6: Visual and Attentional Processes 2** **Chair:** Johan Engström, Volvo Technology • **A7-P Assessing lapses of attention in sleep disorders** D. N. Eder, D. Zou, L. Grote & J. Hedner University of Gothenburg, Sleep and Wakefulness Disorders Center, Vigilance and Neurocognition Laboratory, Sweden • **A8-P Assessment of cognitive engagement from heart rate dynamics during simulated driving with an in-vehicle information system** D. N. Eder[1], W.Lu[2], F. Chen[2] [1] Vigilance and Neurocognition Laboratory, University of Gothenburg, Sweden [2]Department of Computer Science and Engineering, Chalmers University of Technology, Sweden • **A9-P Attention selection and task interference in driving: an action-oriented view** J. Engström[1,2], G. Markkula[1] and T. Victor[1,2] [1] Volvo Technology Corporation, Sweden [2] SAFER, Sweden • **A10-P Visual attention in novice drivers: a lack of situational awareness** M. Dickinson, E. Chekaluk & J. Irwin Macquarie University, Australia
3.30-4.00 pm	*Coffee break*
4.00-5.30 pm	**CONCURRENT SESSIONS**
ROOM B	**Session 7: Distraction – Effects on Driving Performance 2** **Chair:** Trent Victor, SAFER • **A27-P Cognitive distraction and drivers' adaptation in different driving manoeuvres in real traffic** M. Baumann[1*], S. Briest[2], S. Knake-Langhorst[1] [1] German Aerospace Center DLR, Institute for Transportation Systems, Germany [2] Forschungs- und Innovationszentrum Mensch-Technik-Sicherheit, Germany • **A57-P Is there any difference between conversing by phone and conversing with a passenger while driving?** M-P. Bruyas & M. Taffin INRETS, France • **A54-O The Impact of Poor Visual Behavior on Driving Performance in Naturally Occurring Distractions** T. Victor[1,2], et al [1] Volvo Technology Corporation, Sweden [2] SAFER, Sweden
ROOM A	**Session 8: Distraction – Crashes and Crash Risk** **Chair:** Richard Hanowski, VTTI • **A12-P Relative crash involvement risk associated with different sources of driver distraction** A. Backer-Grøndahl & F. Sagberg Institute of Transport Economics, Norway • **A35-P Exploring inattention and distraction in the SafetyNet accident causation database** R Talbot[1] & H Fagerlind[2] [1]Vehicle Safety Research Centre, Loughborough University, United Kingdom [2]Chalmers University of Technology, Sweden • **A36-P Driver distraction and inattention in the USA large truck and national motor vehicle crash causation studies** R. H. Craft[1] & B. Preslopsky[2] [1]Federal Motor Carrier Safety Administration, United States Department of Transportation, USA [2] Econometrica, Incorporated, USA • **A39-P Driver distraction in commercial vehicle operations** R. J. Hanowski, R. L. Olson, J. S. Hickman & J. Bocanegra Virginia Tech Transportation Institute, USA

ROOM C	**Session 9: Visual and Attentional Processes 3** **Chair:** John Senders, University of Toronto • **A17-P Distraction and workload: Driving on the A10 ring road around Amsterdam** M. Hoedemaeker, J. Hogema, J. Pauwelussen TNO Human Factors, The Netherlands • **A29-P Heart rate variability changes during an auditory reaction time task in a simulated driving situation** N. Michael, J. Patterson, M. Dubaj & M. Schier Sensory Neuroscience Laboratory, Swinburne University, Australia • **A52-P Proposing a risk monitor model based on emotions and feelings: Exploring the limitations of perception and learning** T. Vaa Institute of Transport Economics, Norway • **A69-O Executive functions contribution to older drivers performance** J. Adrian[1], M. Moessinger, V. Postal[3] & A. Charles[3] [1]LAB PSA-Renault, France [2]Renault, France [3] Université Bordeaux 2
5.30-5.45 pm **ROOM A**	**Wrap Up Day 1:** Michael Regan, Trent Victor & Lisa Knutsson
7.30 pm	***Conference Dinner at Universeum Science Center*** *Address: Södra vägen 50* **Dinner Speaker:** Carl Johan Almqvist, Safety Director, Volvo Truck Corporation Introduced by Anna Nilsson-Ehle, director, SAFER

DAY 2 – SEPTEMBER 29th

8.00-9.00 am	*Registration & Coffee*
	PLENARY SESSION – ROOM A
9.00-9.15 am	Welcome: Michael Regan & Trent Victor
9.15-10.15 am **ROOM A**	**Keynote Address 2** Michael Perel, National Highway Traffic Safety Administration (NHTSA), retired *"A U.S. Perspective on Driver Distraction: Problems, Progress, Priorities"* Chair: Dr Trent Victor, SAFER
10.15-10.45 am	*Coffee break*
10.45-12.15 pm	**CONCURRENT SESSIONS**
ROOM A	**Session 10: Distraction Prevention and Mitigation – HMI Design** **Chair:** Michael Perel, National Highway Traffic Safety Administration (NHTSA), retired • **A28-O Development of a voice commanded HUD interface for an in-vehicle mobile phone application – exploring a technology transfer to the space industry** U. Rahe, M. Bergmark & E. Gustafsson Department of Product and Production Development, Chalmers University of Technology, Sweden • **A33-P An attempt to mitigate driver distraction with advisory information and auditory warnings - Benefits of ADAS integration and different warning types effects on driving performance** P. Alvarado Mendoza[1,3], A. Lindgren[1,3], F. Chen[1,3] & J. Chen[2] [1]Chalmers University of Technology, Sweden [2] Sino European Usability Center, School of Information Sci.&Tech. Dalian Maritime University, Sweden [3] SAFER, Sweden • **A34-P The effect of redundant information in HUD and HDD on driver performance in simple and complex secondary tasks** P. Tretten, C. J. Normark & A. Gärling Department of Human Work Sciences, Luleå University of Technology, Sweden • **A65-P Smart Driving Aids and their effects on driving performance and driver distraction** S. A. Birrell[1] & M. S. Young[2] [1] Human Centred Design Institute, School of Engineering and Design, Brunel University, United Kingdom [2] Brunel University, United Kingdom
ROOM C	**Session 11: Distraction Prevention and Mitigation – Technology Design 1** **Chair:** Peter Burns, Transport Canada • **A5-P Online estimation of the driver's state enhancement of lane-keeping assistance** C. Blaschke[1], B. Trefflich[3], R. Limbacher[2], F. Breyer[1], J. Freyer[2], S. Mayer[3] & B. Färber[1] [1] University of the Bundeswehr, Germany [2] Audi AG, Germany [3] Audi Electronics Venture GmbH, Germany • **A22-P Issues related to the driver distraction detection algorithm AttenD** K. Kircher & C. Ahlstrom Swedish National Road and Transport Research Institute (VTI), Sweden • **A46-P Touchpad as interaction input control for use of In-Vehicle Infotainment System** S. Norberg & U. Rahe Department for Product and Production Development, Chalmers University of Technology, Sweden • **A68-O Standard Evaluation Procedures for Voice Interfaces in Vehicles** P. Burns, J. Harbluk & J. Mitroi Transport Canada, Canada

ROOM B	**Special Symposium 1: Impact of mental workload on the driving task: a psychological and neurophysiological approach** **Chair:** Corinne Brusque, INRETS • **A62-O Attentional failures when driving: a French experience to stimulate research community on this road safety issue** C. Gabaude, A. Fort & A. Chapon INRETS, France • **A43-P From attention to decision-making: Neuropsychological study** A. Jacquet-Andrieu[1] & R. Martin[2] [1]Université Paris Est, France [2]Institut des Science de l'Homme, France • **A42-O Processing of relevant visual information while driving and attention: a MEG study** A. Fort[1] & C. Delpuech[2] [1]INRETS, France [2]CERMEP, INSERM U 280, France • **A44-P Self assessment, questionnaires and memory tests** C. Combe-Pangaud[1] & A. Jacquet-Andrieu[2] [1]Lyon 2 University, France [2]Université Paris Est, France • **A41-O Dacota 3D: a virtual environment inspired of videos games** G. Foliot Institut des Science de l'Homme, France
12.15-1.15pm	*Lunch – Restaurant Tres, ground floor*
	PLENARY SESSION – ROOM A
1.15pm-2.15pm **ROOM A**	**Keynote Address 3** Prof. Claes Tingvall, Swedish Road Administration "*Vision Zero and Distraction*" Chair: Adj. Prof. Michael Regan
2-15-3.45pm	**CONCURRENT SESSIONS**
ROOM C	**Session 12: Distraction – Distraction and Mitigation – Technology Design 2** **Chair:** Martin Baumann, German Aerospace Center DLR • **A11-O Managing the Telematics Use during Drive – What does Driver Want?** F. Chen[1,2] [1]Department of Computer Science and Engineering, Chalmers University of Technology, Gothenburg, Sweden [2]SAFER, Sweden • **A23-O Driver inactivity crash prevention** K. Küntzel, SUSEN AB • **A25-P Management of distraction risk from mobile phones in the UK rail industry** T. Luke[1], J. Heavisides[1] & D. Basacik[2] [1]RSSB (Rail Safety and Standards Board), United Kingdom [2]TRL, United Kingdom • **A55-O Real time distraction detection and warning system significantly improves safety on public roads** D. Croke Seeing Machines, USA/Australia
ROOM A	**Special Symposium 2: Digital Billboards and Driver Distraction** **Chair:** Jerry Wachtel, The Veridian Group, Inc. • **A63-P The State of the Art, Practice, and Knowledge about Digital Roadside Advertising and Traffic Safety** J. Wachtel, The Veridian Group, Inc., USA • **A51-P Driver distraction from roadside advertising: The clash of road safety evidence, highway authority guidelines and commercial advertising pressure** T. Horberry[1], M. A. Regan[2] & J. Edquist[3] [1]University of Queensland, Australia [2] INRETS, France [3]Monash University Accident Research Centre, Australia

ROOM B	**Session 13: Drowsy Driving and Inattention** **Chair:** Lena Nilsson, VTI • **A6-P Detecting sleepiness in truck drivers** D. Sandberg & M. Wahde Department of Applied Mechanics, Chalmers University of Technology, Sweden • **A13-P Predicting driver's hypovigilance on monotonous roads: Literature review** G. S. Larue[1], A. Rakotonirainy[1] & A. N. Pettitt[2] [1] Centre for Accident Research and Road Safety – Queensland, Australia [2] Queensland University of Technology, Australia • **A72-P Oculometric measures as an index of driver distraction, inattention, drowsiness and sleep onset** W. Torch[1, 2] & C. Cardillo[2] [1]Neurodevelopmental and Neurodiagnostic Center, USA [2]Eye-Com Corporation, USA • **A32-O Reducing distraction with integration and interaction design? -Understanding how different interaction modalities affect driving performance** P. Alvarado Mendoza[1,3], F. Chen[1,3] & H. Zhang[2] [1]Department of Computer Science and Engineering, Chalmers University of Technology, Sweden [2]Sino European Usability Center, School of Information Sci.&Tech. Dalian Maritime University, China [3] SAFER, Sweden
3.45-4.15pm	*Coffee break*
4.15-5.45pm	**PLENARY SESSION – ROOM A**
ROOM A	**Special Symposium 3: Distraction – Priorities for Research and Countermeasure Development** **Co-Chairs:** Michael Regan and Trent Victor **Panelists:** • Peter Burns, Transport Canada • Richard Hanowski, VTTI • Peter Hancock, University of Central Florida • Arne Nåbo, Saab Automobile AB • Michael Perel, National Highway Traffic Safety Administration (retired) • Michael Regan, INRETS • Trent Victor, SAFER • Jerry Wachtel, The Veridian Group, Inc. • Kristie Young, Monash University Accident Research Centre
5.45-6.00pm **ROOM A**	**Closing remarks:** Michael Regan, Trent Victor and Anna Nilsson-Ehle