



International Commission on Illumination
Commission Internationale de l'Éclairage
Internationale Beleuchtungskommission



DANISH BUILDING RESEARCH INSTITUTE
AALBORG UNIVERSITY COPENHAGEN

**CIE Expert Tutorial and Workshop
on Research Methods for Human Factors in Lighting
12-14 August 2018 Aalborg University Copenhagen, Denmark**

PROGRAMME

Sunday 12 August 2018

VILLUM Window Collection, Maskinvej 4, 2860 Søborg, Denmark

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- 17.00 **Welcome reception hosted by VELUX A/S**
Welcome by president of CIE, Yoshihiro Ohno
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Monday 13 August 2018

The Conference Hall, Aalborg University Copenhagen (AAU CPH)

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- 8.00 **Registration and coffee**
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- 8.30 **Welcome and introduction**
*Senior researcher Ásta Logadóttir, SBi, AAU
& CIE Division 3 Director Dr. Jennifer Veitch*
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- Session 1: Planning**
Chairperson: Professor Werner Osterhaus (email: Werner.Osterhaus@eng.au.dk)
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- 8.45 **Critical Analysis of a Research Paper**
Dr. Bob Davis, Pacific Northwest National Laboratory
- 9.15 **The Role of Theory in Lighting Research**
Professor Yvonne de Kort, Technische Universiteit Eindhoven
- 9.45 **Ethical Considerations for Applied Lighting Research**
Dr. Jennifer Veitch, National Research Council of Canada
- 10.15 **Coffee break**
- 10.30 **Workshop: Non Image Forming Effects, Perception and Vision**
Paper presentations and plenary debate (see details of workshop below)
- 12.30 **Lunch**
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Session 2: What and how to measure

Chairperson: Professor Marc Fontoynt (email: mfo@sbi.aau.dk)

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- 13.30 **Choosing and Defining Variables for Lighting Experiments**
Professor Kevin Houser, Pennsylvania State University
- 14.00 **How to Measure the Visual Stimulus**
Professor Myriam Aries, Jönköping University
- 14.30 **Methods for Assessing Daylighting Performance Metrics in Real Building Case Studies**
Professor Werner Osterhaus, Aarhus University
- 15.00 **Quantifying Photobiological and Photochemical Effects**
Dr. Peter Blattner, Federal Institute of Metrology METAS
- 15.30 **Coffee break & Poster session**
- 16.00 **Workshop: Advanced Measurements**
Paper presentations and plenary debate (see details of workshop below)
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17.30 End of today's programme

Tuesday 14 August 2018

The Conference Hall, Aalborg University Copenhagen (AAU CPH)

8.00 Coffee

Session 3: Measuring perception and performance in the lab and field studies

Chairperson: Professor Steve Fotios (email: steve.fotios@sheffield.ac.uk)

8.30 **Drawing Causal Inferences in Applied Lighting Research: Threats to Validity**

Dr. Jennifer Veitch, National Research Council of Canada

9.00 **Miss-use of Category Rating Scales (continuing TC 1.80)**

Professor Steve Fotios, University of Sheffield

9.30 **Good Statistical Practices in Human Factors Lighting Research**

Dr. Jim Uttley, The University of Sheffield

10.00 Coffee break

10.20 **Workshop: Psychophysics**

Paper presentations and plenary debate (see details of workshop below)

12.30 Lunch

Session 4: Post experiment

Chairperson: Professor Kevin Houser (email: khouser@enr.psu.edu)

13.30 **What to Report? Details of Experimental Apparatus and Procedure to Enable Repetition**

Dr. Martine Knoop, Technische Universität Berlin

14.00 **How to Write a Good Paper**

Professor Emeritus Peter Boyce, Rensselaer Polytechnic Institute

14.30 **Workshop: Representation for Evaluation**

Paper presentations and plenary debate (see details of workshop below)

15.30 **Coffee break and Poster session**

16.00 **Plenary discussion**

Dr. Bob Davis & Dr. Jennifer Veitch guest editors of

LEUKOS & CIE special issue

17.30 **End of today's programme**



Workshops

Each workshop consists of a number of paper presentations and plenary debates. Below you will find details of the contributing presenters. See abstracts in the [online Abstract Booklet](#) on the CIE event website.

Monday 13 August

Session 1 Workshop: Non Image Forming Effects, Perception and Vision

Chairperson: Professor Werner Osterhaus

Spectrometric Instrumentation For In-Situ Monitoring Of Spectral Components In Dynamic Lighting Scenarios

Carsten Dam-Hansen, Technical University of Denmark

Determining Personal Light Exposure and Occupant's Viewing Direction by Using the Non-Obtrusive Location-Bound-Estimations (Lbe) Method

Juliëtte van Duijnhoven, Eindhoven University of Technology

Integration of Non-Image Forming Effects of Light in Control Systems for Venetian Blinds and Electric Lighting

Marta Benedetti, École Polytechnique Fédérale de Lausanne

Spatially Resolved Data for Human Factors Research

Carolin Liedtke, Technische Universität Berlin

Characterization of Ocular System Aging in Light and Lighting Studies

Octavio Perez, Mount Sinai Hospital

Session 2 Workshop: Advanced Measurements

Chairperson: Professor Marc Fontoyant

Eye-Tracking for Human Factors Lighting Research

Jim Uttley, University of Sheffield

Impact of Light Incidence and Incident Radiant Flux on Acute Alertness

Kai Broszio, Technische Universität Berlin

Practical Issues in Field Studies Using Luminance Cameras

Thijs Kruisselbrink, Eindhoven University of Technology

High Dynamic Range Images Calibration for Luminance Maps Creation

Clotilde Pierson, Université catholique de Louvain



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Tuesday 14 August

Session 3 Workshop: Psychophysics

Chairperson: Professor Steve Fotios

Luminance Distributions Set by User-Controlled Lighting: The Optimal Methods to Maintain Satisfaction While Saving Energy

Christel de Bakker, Eindhoven University of Technology

The Impact of the Starting Point Chromaticity on Memory Colour Matching Accuracy

Ma Shining, KU Leuven

Methodological and Analytical Biases Identified in Studies of Glare Due to Discomfort

Michael Kent, University of Nottingham

Evaluation of Discomfort Glare Through Glare Scales: What Are We Really Measuring?

Clotilde Pierson, Université catholique de Louvain

How to Evaluate the « Performance » and « Robustness » of Glare Metrics?

Jan Wienold, Ecole Polytechnique Fédérale de Lausanne

Two Methods of Brightness Assessment and Experimental Bias

Ásta Logadóttir, Danish Building Research Institute, Aalborg University Copenhagen

Brightness Assessment Using Partition Scaling

Laurens Van de Perre, KU Leuven

Physiological Responses in Relation to Glare: A Case Study in Office Setting

Zahra Hamedani, Griffith University

Session 4 Workshop: Representation for evaluation

Chairperson: Professor Kevin Houser

A Critical Assessment of the Use of Calibrated Photorealistic Images for Visual Experimentation in Lighting

Marc Fontoynt, Danish Building Research Institute, Aalborg University Copenhagen

Studying the Effect of Light on the Experience of Space in Situ: Towards a Novel and Interdisciplinary Methodological Framework

Panos Andrikopoulos, UCL Institute for Sustainable Heritage

Benefits of Bringing the Real World to the Lab: Investigating Lighting Behaviour in Homes Using a Full-Scale Model

Kiran Maini Gerhardsson, Lund University

Methods for using Immersive Virtual Reality for Experimental Studies in Lighting Research

Kynthia Chamilothori, Laboratory of Integrated Performance in Design
