



Annual Conference & General Assembly 2024

30-31 May 2024

Clarion Hotel, Trondheim
Norway

Parallel sessions

General information

The conference programme features parallel sessions on both days. You can choose one session per day. Please note that the number of participants per session is limited and allocation will be done on a first come, first served basis.

The parallel sessions D and J will take place at the [Norwegian University of Science and Technology \(NTNU\)](#) and a bus shuttle will be organised (departure in front of the hotel).

We thank you for your understanding and look forward to lively discussions!

Overview

Thursday, 30 May 2024

from 15:00 to 17:00

- A. Back to the roots in One Health: How plants and animals can stay healthy with the help of daylight
- B. Ideas for interdisciplinary projects
- C. One scene, many metrics: A practical and collaborative inter-device daylight and twilight measurement session*
- D. Studios - daylight and view (at NTNU)
- E. The Artic Sun

Friday, 31 May 2024

from 10:00 to 11:30

- F. Daylight as a boundary mechanism in intercultural transdisciplinary design: The Green Health project
- G. Identification of societal topics for DLA: Kick off working group
- H. Latitude, Health and Sustainable Goals
- I. Messaging the Value of Daylight
- J. ROMLAB - laboratory of space (at NTNU)

** Parallel Session C includes a twilight/dusk session on 30 May from 22:30 to 23:45 at the Clarion Hotel. The number of participants is limited to 20 people and you will be asked to bring measurement devices for measurement.*

Parallel session A

Back to the roots in One Health: How plants and animals can stay healthy with the help of daylight

Thursday, 30 May 2024

from 15:00 to 17:00

Lead

Dr Michael J. Balick, The New York Botanical Garden, USA

Prof. K. David Harrison, VinUniversity, Hanoi, Vietnam

PD Dr Kristjan Plaetzer, Paris Lodron University Salzburg, Austria

Prof. Heinrich Walt, University Hospital Zurich, Switzerland

Description

In our recent workshops with a focus on One Health, we mainly addressed human health in countries with low income. However, this would not be possible without carefully analysing life of our partners who are the plants and the animals that comprise the ecosystems in which humans live as well. Conservation/One Health are most effective when multiple perspectives including biology, human behavior and cultural beliefs and values are considered. The first part of the program's focus will include biological and cultural aspects of ecosystem protection and management, including an example of how local communities have developed a "bottom up" approach to ensuring that their forest ecosystems are intact so that future generations can share the benefits of living in healthy environments. This will include mention of a culturally important species that is highly endangered and the role of the community in repopulating forests to ensure that this species thrives.

In the second part, we will explore how photodynamic methods can benefit the veterinary field within a One Health framework: on one hand, using photosensitizers together with daylight or artificial light can effectively manage microbial infections and even treat tumors in animals. On the other hand, this approach can serve as novel, economic and ecofriendly procedure to control pests in agriculture by acting as photo insecticide. Both revolutionary approaches shall be discussed.

Objectives

- Protecting forest ecosystems in both South Pacific and Vietnam, what are the needs and what the differences? (Part 1)
- New applications for using daylight and photosensitizers against insect pests in plants and how can we minimize the use of antibiotics in animals? (Part 2)

Note: According to the World Health Organization the areas in which the One Health concept is particularly relevant include food safety, the control of zoonoses, and combatting antibiotic resistance.

Parallel session B

Ideas for interdisciplinary projects

Thursday, 30 May 2024

from 15:00 to 17:00

Lead

Prof. Christoph Küffer, OST Eastern Switzerland University of Applied Sciences, Switzerland

Description

Have an idea for an outside-the-box daylight-related research project and want to develop it? Are you looking for collaborators from other disciplines? Or do you just want to contribute your skills to existing ideas as a collaborator? Then this is the workshop for you. We will be pooling our interdisciplinary backgrounds together to create a brainstorming session for new interdisciplinary research ideas. The aim is to come up with concrete research ideas and ideally create a first-draft plan on how to move them forward. Attendees from all academic and professional backgrounds are welcome.

Objectives

- Generate innovative interdisciplinary daylight research ideas that participants are motivated to bring to a project proposal level and eventually carry out.
- Establish new networks within the Daylight Academy community
- Establish kick-off plans that can be developed further

Parallel session C

One scene, many metrics: A practical and collaborative inter-device daylight and twilight measurement session

Thursday, 30 May 2024

Part 1 from 15:00 to 17:00 (Daylight session)

Part 2 from 22:30 to 23:45 (Twilight/dusk session)

Lead

Prof. Manuel Spitschan, Technical University of Munich, Munich, Germany

Prof. Brian Norton, Tyndall National Institute, University College Cork and Technological University Dublin, Ireland

Dr Lenka Maierova, Czech Technical University, Prague, Czech Republic

Description

Across different disciplines, daylight is measured and quantified differently. As an example, the effect of light on human physiology is quantified using α -opic irradiances, while the impact of light for photosynthesis is quantified using yield photon flux (YPF). Moreover, scenes illuminated by daylight can be captured using a variety of techniques, including multispectral radiance cameras, spectroradiometers measuring spectral irradiance, photometers capturing illuminance – and through painting or another artistic method. How can this diversity of measures, methods and metrics be harmonized and compared?

In this workshop, we will capture, collect and inventorize different measures of the same scene using a common, coordinated and time-stamped measurement protocol. Participants are invited to bring their light measurement devices and engage in measurements of daylight and twilight. Measurement approaches from photosynthesis, photochemistry and atmospheric science are particularly welcome. The data collected in this workshop will be merged into a large open-access data set hosted by the Daylight Academy. Insights from this multidisciplinary activity will further expand the understanding of metrics, measurements and data in different fields of daylight research and will contribute to the ongoing Daylight metrics, measurements, and data project.

Participation in the workshop is limited to 20 participants. In your registration, you must indicate the types of measurement devices that you will be bringing for measurements. If you will be unable to bring these devices, then you must cancel in advance as soon as you can.

Objectives

- Collect daylight and twilight data using different light measurement devices
- Produce a comprehensive understanding of daylight measurement landscapes across disciplines

Parallel session D

Studios - daylight and view

Thursday, 30 May 2024

from 15:00 to 17:00

Lead

Prof. Barbara Szybinska Matusiak, NTNU, Trondheim, Norway

Ms Marzieh Nazari, NTNU, Trondheim, Norway

Description

The studios for architecture students are located in the southern low-rise block at NTNU's university campus which was built in the early 1960s jointly with the two high-rise buildings, Sentralbygg 1 and 2. Since architecture students used large drawing boards at that time and drawings were often made with pencils, a high level of lighting was required. There were large skylights in the room that covered approx. 50% of the roof area. In the energy saving spirit of the 1980s - the roof was completely rebuilt. The large skylights were replaced with much smaller ones, which resulted in a dramatic reduction of daylight. The last modernization was done in one of the studios in 2015. It was based on the results of the "Daylighting" research project carried out at the faculty of architecture, NTNU, and financed by the Norwegian Research Council. The skylights were replaced with new ones having 3-layers energy glass, mirrored sidewalls and the translucent ceiling was specially designed for the location at high latitudes.

Objectives

During the workshop, participants will have the opportunity to

- visit two studios, one with a newest design and one with the solution from 80-ties, and learn how this unique newest design was developed
- experience, evaluate and discuss visual conditions and the view access in these two studios depending on the place in the room, sitting or standing position and the view direction.

This parallel session will take place at NTNU and a bus shuttle will be organised.

Parallel session E

The Artic Sun

Thursday, 30 May 2024

from 15:00 to 17:00

Lead

Dr Sophie Battell, University of Zurich, Switzerland

Prof. Charles Alexander Duncan Booker, NTNU, Trondheim, Norway

Ass. Prof. Katharina Wulff, Umeå University, Sweden

Description

Cycles of light and dark structure human experience. But what happens when the hours of daylight expand or contract? During the Polar Day, the Sun never sets below the horizon within the Arctic Circle. What is modern life like under the Midnight Sun? How does constant light exposure affect body and mind?

This workshop invites critical reflection on daylight in the polar regions, including Norway and elsewhere.

Discussion topics might include but are not limited to the following.

- Spectacular technicolour light effects accompanying the Midnight Sun/ Polar Day and their counterparts the Northern Lights/ Polar Night, as well as other distinctive Nordic colours including the mysterious polar blue.
- The impact of the Midnight Sun on human health and well-being, e.g., disruption to circadian rhythms, sleep, changes to serotonin and melatonin levels, seasonal affective disorders, cognition.
- Challenges and opportunities for architecture and design, e.g., building at high latitudes, energy efficiency at the Arctic Circle. Design solutions such as full-spectrum lamps and other artificial sources of daylight, light ergonomics, innovative uses of solar energy.
- Cultural traditions to brighten the midwinter darkness and celebrate the return of the light. Nordic literature on the solstices. Global historical perspectives. Indigenous myths, cultural artefacts, and storytelling from the Arctic.

We welcome contributions from architecture, light technology, colour, chronobiology, circadian science, sleep, health, environment, culture and the arts, amongst other fields.

Objectives

- Generate cross-disciplinary discussions centred on polar daylight
- Make connections to the conference theme of sustainability
- Explore future avenues for collaboration

Parallel session F

Daylight as a boundary mechanism in intercultural transdisciplinary design: The Green Health project

Friday, 31 May 2024

from 10:00 to 11:30

Lead

Dr Mónica Berger, Universidad del Valle de Guatemala, Guatemala

Dr Hubert Klumpner, ETH Zurich, Switzerland

Description

A DLA meeting last year provided a platform for architects, anthropologists and biologists to initiate plans for a collaboration towards the Green Health project (GH), based in Guatemala and supported by several European Universities. The GH project is proposed as an intercultural transdisciplinary process that will work in developing solutions at the interface of SDG 3 (health) and SDG 11 (sustainable cities and communities) through dialogues between several disciplinary experts and indigenous communities, ultimately transforming ideas into actions that will culminate in the setting up of the Mesoamerican Institute of Indigenous Ethnomedicine (MIEE).

The MIEE aims to include structural designs based on modern and Maya science that can incorporate daylight for human and medicinal plant species to thrive together in shared indoor and outdoor spaces, creating novel approaches to develop botanical gardens, seed banks, solar driers, living medicinal walls, etc. We propose to use daylight as a 'boundary object' to facilitate dialogues across cultures. This should lead to knowledge co-production between the designing of symbiotic environments as understood by the traditional knowledge of the Maya - where sunlight and plants play a key role - with those of modern science and architectural design.

In this workshop, we invite you to help us critically analyze the focus and methods we propose for carry out this transdisciplinary process. We invite you to bring in your expertise and assist in co-defining the guiding questions using sunlight as a boundary mechanism for mutual learning. There is also the option of potentially becoming involved with our project in the long-term.

Objectives

- Present the general design of the Green Health project as applied transdisciplinary research in order to receive feedback for improving interdisciplinary collaborations and intercultural exchange
- Co-design guiding questions relevant to architecture, biology, medicine, anthropology, ecology and psychology using daylight as a boundary mechanism
- Critically analyze pathways for contributions to SDG 3 and SDG 11 in larger societal contexts.

Parallel session G

Identification of societal topics for DLA: Kick off working group

Friday, 31 May 2024

from 10:00 to 11:30

Lead

Ass. Prof. Rana Zadeh, Cornell University, New York, USA

Dr Lukas von Orelli, Velux Stiftung, Zurich, Switzerland

Description

The Daylight Academy is excited to introduce a new initiative aimed at enhancing the societal impact of our work. We are launching a working group dedicated to pinpointing 2 to 3 critical societal issues where daylight research can significantly contribute to addressing the challenges. With the focus on the Sustainable Development Goals, our upcoming conference provides the ideal platform for this endeavour. These selected topics will shape our strategic focus for the upcoming period (2026-2030). The kick off workshop marks the beginning of a participative journey towards exploration and strategic planning. We encourage you to join us and actively participate in shaping the future direction of the Daylight Academy.

Objectives

- Clarify the criteria for selecting societal topics aligned with the mission of the Daylight Academy and its overarching goals.
- Develop a comprehensive roadmap detailing the future endeavours of the working group, specifying key milestones and timelines.
- Review and build upon the outcomes of the speed networking session from the previous day, assessing the viability of identified topics and their alignment with predetermined requirements.

Parallel session H

Latitude, Health and Sustainable Goals

Friday, 31 May 2024

from 10:00 to 11:30

Lead

Dr Richard Hobday, independent researcher and author, UK

Prof. Brian Norton, Tyndall National Institute, University College Cork and Technological University Dublin, Ireland

Description

One of the targets set in the 2030 Agenda for Sustainable Development is the reduction of premature deaths from non-communicable diseases by one-third by 2030. This initiative from 2013 came in response to a growing burden of chronic disease. Many low- and middle-income countries were undergoing rapid transitions in economic growth and in the built environment. Their populations were adopting the living and working habits of more affluent societies located at higher latitudes. Once this began obesity, cancer, diabetes and other health problems that were common away from the Equator soon became more problematic closer to it. Research over many years has shown such conditions to be complex. This workshop will to bring together DLA members who are interested in participating in a review of the subject.

Objectives

- The aim will be to develop a better understanding of global health problems by investigating how daylight, or lack of it, at different latitudes influences their onset and progression.

Parallel session I

Messaging the Value of Daylight

Friday, 31 May 2024

from 10:00 to 11:30

Lead

Dr Oliver Stefani, Lucerne University of Applied Sciences (HSLU), Switzerland

Mr Jan Denneman, Good Light Group, Eindhoven, The Netherlands

Description

There is growing evidence that regular daylight exposure is central to public health and a lack of daylight exposure can lead to disrupted biological rhythms, sleep and mood disorders, inadequate vitamin D levels and myopia. Nevertheless, while many people may count their daily steps and their calorie intake, they are often not aware of the many benefits of daylight exposure. On the contrary, they are only aware of the dangers of too much sunlight and therefore tend to avoid it.

The Daylight Ambassadors have been organized as a subgroup of the Daylight Academy to help DLA members spread the word about the benefits of daylight. How can we do that? One approach is to develop a set of short but evidence-based statements, one-liners, about the benefits of daylight and how people can best take advantage of these benefits.

In this workshop, we propose to identify a handful of key phrases that will resonate with various demographic groups (for example decision makers, public at large). First, we would like to identify critical questions about daylight access that are likely to arise. The goal will be to identify common public concerns and link those with consistent messaging about the benefits of daylight that can be easily backed up with scientific evidence. For example, "Windows create distractions in classrooms." Response: "Studies show that children actually learn better in classrooms with a view of the outdoors."

The participants in this hands-on workshop are asked to come prepared with one (or more) common concerns about daylight applications from their professional experience, and suggest succinct messages in response.

Objectives

- Organise and consolidate the concerns and messages
- Select and refine messages to have the greatest impact
- Discuss how these messages might best be deployed
- Identify next steps (for example creating short video messages, articles, guides)

Parallel session J

ROMLAB - laboratory of space

Friday, 31 May 2024

from 10:00 to 11:30

Lead

Prof. Barbara Szybinska Matusiak, NTNU, Trondheim, Norway

Ms Marzieh Nazari, NTNU, Trondheim, Norway

Description

Spatial full-scale experiments started at the NTNU university campus in 1957 by internationally recognized Professor Arne Korsmo in a small room on the roof floor of the Main building. First in 1962 a separate room of about 47 m² has been intended only for this purpose and called ROMLAB. For over 40 years it functioned as a space laboratory where students of architecture experimented with room, light and colour under guidance of assistant professor Liv Arvesen. In 2006 the ROMLAB has been moved to a new and much larger room (125 m²), designed by Barbara Szybinska Matusiak, and especially constructed for the purpose.

The ROMLAB is nowadays a unique facility in the international scale. It gives the possibility for qualitative and quantitative research; and enables testing of different design ideas including room shape, daylighting, electric lighting, and surface colour.

Objectives

During the workshop in the ROMLAB participants will have the opportunity to

- propose few design alternatives of a window wall in a room being an abstract version of a small cubic room (2,5 x 2,5 x 2,5m), and build/test the alternatives it in full-scale, two cubic rooms will be prepared for the occasion,
- visit one black and one white room (constructed in advance) having exactly equal dimensions and equal but movable daylight opening. The visit may give raise to interesting discussion about the perception of space and the modelling by daylight in architectural spaces.

This parallel session will take place at NTNU and a bus shuttle will be organised.