

# Five-Year Report 2017-2021



DAYLIGHT  
ACADEMY

The **Daylight Academy** promotes international and interdisciplinary cooperation among scientists, architects, engineers, and other professionals working on daylight with the objective of facilitating innovative ideas in daylight research and its applications. Representing seventeen different countries and a wide variety of fields, the members instil life into the Academy and give it its unique profile. Annual meetings and other activities such as workshops and summer schools offer a platform for exchange beyond disciplinary boundaries.



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# Foreword

## A new star is born

Five billion years ago in our galaxy was born a star of average size, that we called 'The Sun'. Thanks to the fusion of the hydrogen and helium atoms that compose it, this star has generated continuously, from time immemorial, radiant energy essential to the life on our planet. The sun's rays make a journey of more than 150 million kilometres before entering the Earth's atmosphere and reaching its surface. During this long journey, they undergo a certain number of vicissitudes, which lead them to modify their physical properties somewhat. Some of this radiation is used by plants to grow and prosper, and thus allow the whole chain of living beings, from unicellular to mankind, to exist and multiply on Earth. This same radiation is essential for human beings: it allows us to enlighten buildings thanks to natural light and to supply districts and cities with renewable solar energy in various forms. It also has the property of stimulating the human brain through the eyes by regulating the circadian rhythms that mark out our existence throughout the daytime and at night. All these extraordinary properties of the sun rays make them an essential element of life on Earth.

Five years ago, the Daylight Academy was founded to promote interdisciplinary cooperation on an international level between scientists, engineers, architects, and other professionals in the field of daylighting. Thanks to the initiative of the Velux Stiftung, the unwavering commitment of its director Lukas von Orelli and the financial support of its board, the Daylight Academy came to life. Like a living being, the association has

grown from the cradle to gradually reach adulthood under the leadership of its steering committee, made up of founding members whose knowledge and wisdom are matched only by their experience and humane qualities. Through the scientific and cultural events organised each year in various places in Switzerland and Europe, the Daylight Academy has seen its reputation grow in the academic world. The various initiatives and projects aimed at a large public will contribute to making it better known throughout the world and among different generations. Participating in this adventure from its inception has been a real gift both through the people I have met and the knowledge I have gained about sun rays and daylight in all its different forms.

A new star is born... no doubt that it will be promised to a brilliant future!



Prof. Jean-Louis Scartezzini  
Speaker of the  
Daylight Academy  
Steering Committee  
from 2017 to 2021



Participants of the DLA Annual Conference 2018 in Dublin, Photo credit: Maxwell Photography, Dublin

## Portrait

The **Daylight Academy** (DLA) is an international membership organisation initiated by the Swiss foundation Velux Stiftung which brings together scientists from all horizons, architects, engineers, and other professionals involved in daylight research, or who have a strong interest in daylight related topics.

By organising networking events, supporting collaborative activities, and providing a platform for connection and exchange among the different disciplines and fields of expertise related to daylight, the DLA wants to initiate cooperation, innovation, and new knowledge. Such interdisciplinary exchange has the potential to be a catalyst for creativity, novelty, and development. The aim is to strengthen daylight research and its applications for the benefit of humanity and nature.

The DLA was started as a bottom-up initiative and officially inaugurated in November 2016. From the beginning, it was clear that the Academy should be independent and allow its members to define its shape as well as its topics, dedicated to daylight. So, the DLA has become an entirely independent initiative of scientists, facilitated by the Velux Stiftung. Anyone involved in daylight research or interested in the activities of the Academy is welcome to get in touch.

"brings together scientists  
from all horizons, architects,  
engineers, and other professionals  
involved in daylight research"

# “New developments start at the interface of disciplines”

## An Interview with Professor Burkhard König, DLA steering committee member from 2017 to 2021

by Lydia Moreno, Program Manager of the Daylight Academy

**Lydia Moreno: Prof. König, you are one of the founding members of the Daylight Academy (DLA). What was your motivation to be part of this initiative and support it as a steering committee member during 5 years?**

Burkhard König: New developments start at the interface of disciplines. One mission of the DLA is providing a forum for interdisciplinary exchange of experts on the topic of daylight and I found this from the very beginning a very important goal. Natural sciences and engineering have become rather specialised and when I as a chemist attend conferences, I meet only other chemists. Personal interactions across disciplines have become rare, yet they can be a great source of inspiration and they are a lot of fun.

**When you look back at the first five years (2017-2021) of the DLA, what were the highlights for you?**

Clearly the in-person annual conferences of the DLA and the discussions with colleagues and friends from very different backgrounds.

I enjoyed learning about new approaches in architecture, plant biochemistry and the joint brainstorming towards new techniques or projects was always enlightening.

**... and what have you learned as a member of the steering committee?**

How important the active support of any project by the staff of the foundation is. There can be good ideas, but converting them into real events, real publications or other output is a lot of work and requires persistent motivation. I was thankful to work closely together with the DLA office staff and other colleagues from the Velux Stiftung. Another thing was that, no matter how diverse views and opinions are, there is always a quick consensus with the right people.





Burkhard König, German chemist, is Professor at the University of Regensburg. His research interests revolve around the use of light in chemistry. As one of the pioneers of chemical photocatalysis he develops methods for light-driven organic synthesis. Molecules responding to light and functional dyes are other research activities. He has published three textbooks and reported his research results in more than 400 publications. Burkhard König has been member of the Daylight Academy steering committee from 2017 to 2021.

### What do you wish your successors in the steering committee?

Inspirations to keep or even increase the momentum of the DLA. Be open to new topics related to daylight and experiment with new formats of exchange and interactions. Personal interactions should always be a key component of the DLA activities.

### Where would you like to see the DLA in five years?

A vibrant place to meet with scientists, architects, engineers, and artists sharing common interest in daylight. The number of active members will hopefully have grown; the scope of topics covered in projects and meetings has changed and reflects the daylight-related hot areas of different disciplines. The annual conferences have gained the reputation being an excellent event for interdisciplinary exchange at a high level.

## Flash Daylight Questionnaire

**Owl or lark?:** Owl

**Fondest memory related to daylight:** While hiking in the mountains

**Fun fact about daylight:** It makes impossible chemical reactions possible.

**Favourite superpower of sunlight:** Photosynthesis

**Greatest potential of daylight research for the future:** Daylight powered autonomously acting, adapting, or responding materials

## Activities

# Annual conferences: interweaving perspectives

### **2017 | EPFL, Lausanne, Switzerland (17 November)**

The first DLA Annual Conference & General Assembly took place on 17 November 2017 at the Starling Hotel at EPFL in Lausanne. The vibrant atmosphere in the community created the perfect basis to discuss the future activities of the Academy. Five discussion workshops provided opportunities to collect new ideas and hone previously set aims. In plenum, these project ideas were refined and, following the conference, the project leaders wrote an application to the steering committee members who decided on the support of the projects in their next meeting.

**Participants: 54**

**Members present: 32**

### **2018 | Daylight: What Makes the Difference?**

#### **Dublin Institute of Technology, Ireland (25-26 October)**

The Annual Conference 2018 took place on 25-26 October at an extraordinary venue: The Cathedral of the Dublin Institute of Technology. For two days, participants with very different backgrounds met in Dublin for their annual dose of interdisciplinary exchange with other daylight experts. The four keynotes on the first day reflected very different perspectives on daylight and were much appreciated by the attendees. On the second day, the participants had the opportunity to exchange and develop ideas in four interdisciplinary workshops.

**Participants: 71**

**Members present: 27**



## Annual conferences

### **2019 | Expanding Horizons: Can Art enlighten Science?**

#### **WSL, Birmensdorf (near Zurich), Switzerland (14-15 November)**

Daylight impacts all aspects of life and the variety of its effects cannot be addressed by a single discipline. The Daylight Academy takes on this challenge by promoting exchange and collaboration among different disciplines and perspectives. With the DLA Annual Conference 2019, the goal was to pursue this collaborative effort and even go beyond the limits of science by actively embracing artistic viewpoints. In addition to proposing different and innovative scientific approaches to daylight research, the 2019 program also placed particular emphasis on the added value of collaborations between scientists and artists. Together with experienced speakers, participants were invited to look for new horizons and reflect on creative processes.

**Participants: 92**

**Members present: 33**

### **2020 | What's Next for your Academy?**

#### **Online (19-20 November)**

The Daylight Academy was about to enter a second phase and, despite the social distancing measures that marked 2020, it was important to get the members to meet and exchange on future themes for the organisation. Though virtual, the DLA Annual Conference 2020 caught on with the participants thanks to a lively program and enough time for socializing in small groups. The purpose of this meeting was to jointly define a topic for a future large-scale project embracing all perspectives and disciplines available in the organisation which would be of interest to all of our members. It resulted in several promising project ideas including the DLA House.

**Participants: 65**

**Members present: 37**



Photographer Hans Danuser at the DLA Annual Conference 2019

## Annual conferences

### 2021 | Daylight research under one roof:

#### The power of collaboration, Online (2 December)

The Annual Conference 2021 was dedicated to the DLA House project and its development. This ambitious project aims to develop a virtual platform showing on one hand different aspects of daylight research, and the interconnections between topics and disciplines, and facilitating on the other hand collaboration between experts. The conference was initially planned as a two-day hybrid event. Sadly, due to a sudden tightening of Covid-related measures in Switzerland, the face-to-face meeting had to be cancelled and the online programme readjusted at short notice. The workshops planned for the second day had to be postponed, but the focus on the DLA House project and the content remained the same. After proposing three very diverse and inspiring keynote speeches ([see videos on the DLA YouTube channel](#)), the conference ended with group discussions and an open forum about the DLA House. A short [conference report](#) is also available.

**Participants: 80**

**Members present: 41**

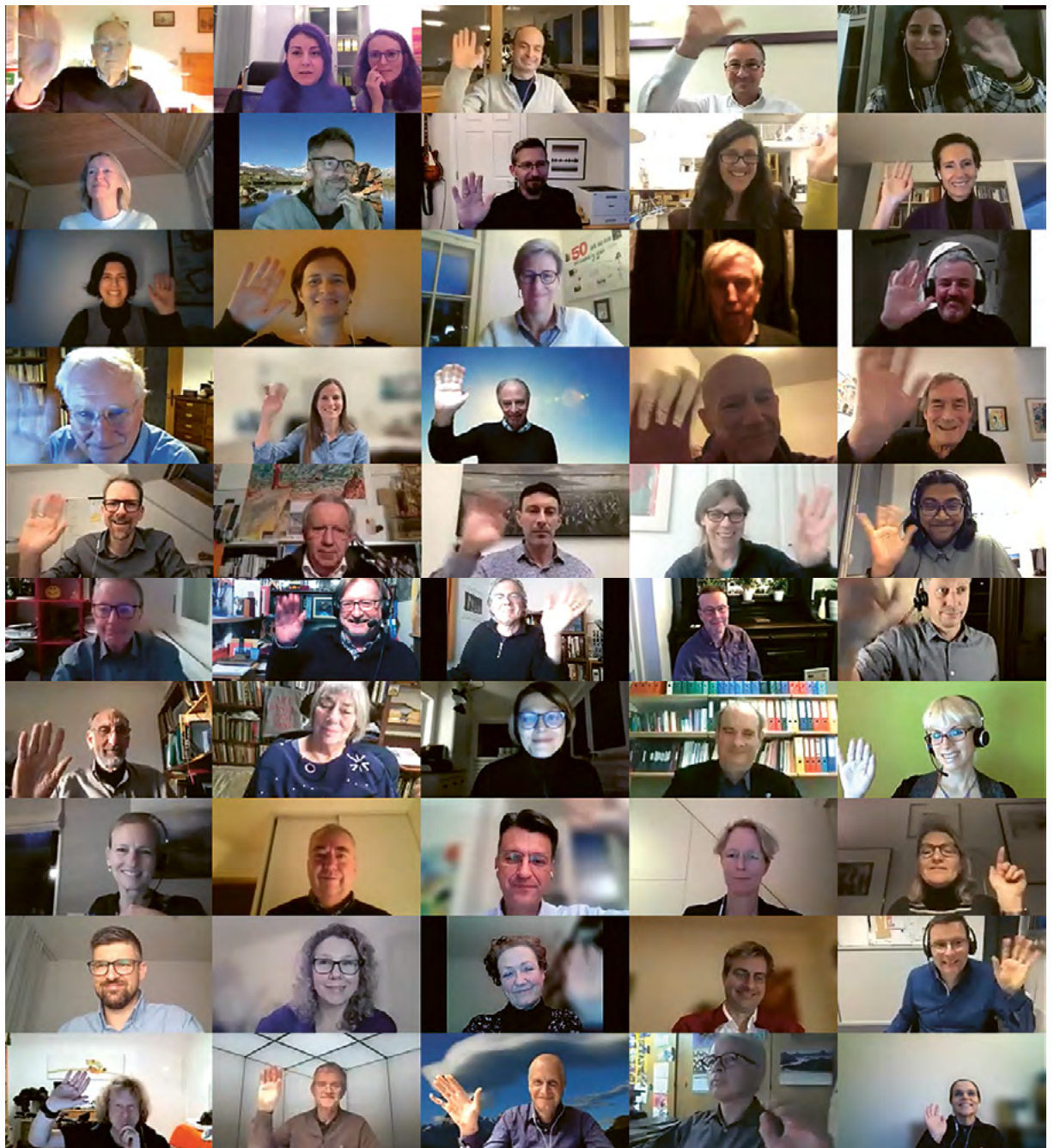
### What's next?

The next editions of the DLA annual conference are planned for:

**13-14 October 2022** at Empa, Dübendorf (near Zurich), Switzerland  
Implementing Daylight Research in Society: Chances and Challenges

**1-2 June 2023** at EPFL, Lausanne, Switzerland  
This edition will be held together with the SLTBR annual meeting (30 May - 1 June 2023) and coincide with a science and art exhibition about (day)light at the EPFL.

If natural light plays an important role in your work and you are interested in exchanging views and developing ideas through interdisciplinary collaboration, you are welcome to contact the DLA office ([office@daylight.academy](mailto:office@daylight.academy)) to get an invitation for the annual conference.



# Projects: co-creating and innovating



## Changing perspectives on daylight (Lightbook)

Following the inauguration of the Daylight Academy in November 2016, more than 40 members joined their forces to write an interdisciplinary overview on the current state of knowledge in the various fields working on daylight. The [Lightbook](#) was published in 2017 as a feature booklet with Science AAAS Publishing. This was the first DLA publication. In 2019, [two articles based on the Lightbook](#) were published in [TEC21](#) (in German).

## Daylight: What makes the difference?

This project aimed to provide a fuller and better understanding of the distinctive defining characteristics and benefits of daylight when compared to those of artificial light. It was completed in 2019 with a [publication in \*Lighting Research & Technology\*](#). A reprint of the paper "Daylight: what makes the difference" was then made available as the [first issue of a newly created DLA Reprints series](#).

### Lead:

[Dr Martine Knoop](#), Daylight and Indoor Lighting, Technische Universität Berlin, Germany, [Prof. Brian Norton](#), Tyndall National Institute, University College Cork and TU Dublin, Ireland



Photo credit: Amy Chandra from Pexels



Photo credit: © ETH Sustainability

## Winter School "Perspectives on daylight"

Organised together with the ETH Zurich, the Winter School took place from 13 to 18 January 2019 on mount Rigi, close to Lucerne. For one week, 30 international students from a variety of disciplines had the opportunity to learn from and exchange with 13 experts of daylight in the fields of environment, health, architecture and technology. [Impressions of the participants \(video\)](#)

### Lead:

[Prof. Bernhard Wehrli](#), Surface Waters Research & Management Eawag Dübendorf, Switzerland



**The role of daylight for humans**

What are the consequences for health and wellbeing of living in industrial and urban areas with less and less daylight (and more artificial light)? After exploring what is known and what still needs to be known about this issue in the position paper [“The Role of Daylight for Humans: Gaps in Current Knowledge”](#) (2020), the working group is now developing a database platform for human light exposure. In 2021, they started a collaboration with developers from [Go Free Range](#) and conducted a survey among scientists, stakeholders, and experts in the field (including all DLA members) to help them guide further the design of the database prototype. In addition, a second article, [“The relevance of daylight for humans”](#), was published in September 2021 in the journal *Biochemical Pharmacology*.

**Lead:**

[Dr Mirjam Münch](#), University of Basel, Switzerland, [Prof. Manuel Spitschan](#), Max Planck Institute for Biological Cybernetics & Technical University of Munich, Germany



Photo credit: Pixabay from Pexels



**Daylight and green cities**

Daylight is a source of energy and information as well as the basis for the aesthetic experience of both architectural and landscape design in a city. This project builds on the unique interdisciplinary nature of the DLA to establish a framework that enables the design of urban areas to maximise the benefits of daylight, as well as the design of green solutions for buildings based on daylight. The group has finalised a paper entitled "Daylight sets ultimate limits to urban densification: A dual perspective on daylight and urban greening" and is looking for a suitable journal to publish it.

**Lead:**

[Dr Bruno Bueno](#), Fraunhofer Institute for Solar Energy Systems, Freiburg, Germany, [Prof. Christoph Kueffer](#), HSR Rapperswil and ETH Zurich, Switzerland, [Dr Carlo Volf](#), University of Copenhagen, Rigshospitalet, Copenhagen, Denmark

**Educational package on daylight**

The project aims to produce a free, widely available online course conveying basic and applied science of daylight, light from artificial sources and related effects upon health. The course is intended as continuing education for the general public, as well as architects and engineers. It will be offered in three modules:

- Daylight and Your Biological Clock
- Daylight and Health
- Daylight and the Built Environment

Filming has been delayed due to the pandemic and the course should be available in 2022/2023.

**Lead:**

[Prof. Steven Brown](#), Chronobiology and Sleep Research, University of Zurich, Switzerland

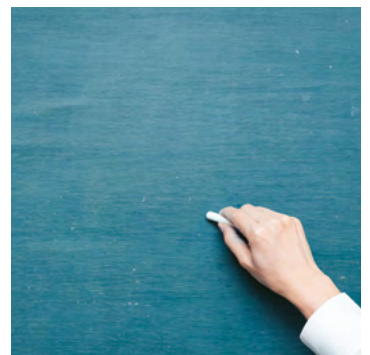
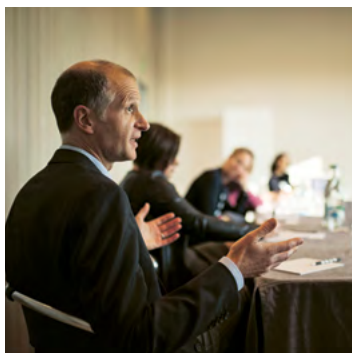


Photo credit: NEOSIAM 2021 from Pexels

## Projects



### Daylight Ambassadors

The DLA's Daylight Ambassadors seek to raise awareness of the need for more research on daylight. Making scientists, professionals, decision-makers and the public more aware of the proven benefits of daylight is key to advancing research and applications related to them. Our Ambassadors do this through participation in conferences and meetings, and the production of informative material. Their booklet "[Why do we need Daylight](#)" has been available since the end of 2020. In 2021, most of the events and meetings were exclusively online. Despite this obstacle, members of this group promoted daylight topics and the DLA in several conferences and initiatives.

#### Lead:

**Dr Oliver Stefani**, Centre for Chronobiology, UPK Basel, Switzerland

### Materials responding to daylight

Molecules and materials that change their structure and properties upon irradiation with light of a specific wavelength have been known about for some time. However, practical applications are still mainly limited to photochromic sunglasses and glass roofs. The aim of this project is to bring together experts from different academic areas and industries to define the state of the art in this field and identify future opportunities for new applications. In 2019, the group proposed a [webinar](#) on the topic as well as an [online art exhibition](#) in collaboration with the University of Regensburg, Germany.

#### Lead:

**Prof. Arthur Gessler**, Forest Dynamics, Ecosystem Ecology, Swiss Federal Institute for Forest, Snow and Landscape Research WSL, Switzerland, **Prof. Burkhard König**, Institute of Organic Chemistry, University of Regensburg, Germany



### Methods for interdisciplinary research

This project aims to promote interdisciplinarity and co-production of knowledge, improve collaborative work within the Daylight Academy and provide the members with support and resources in relation to interdisciplinary research methods. A workshop on such methods took place during the DLA Annual Conference 2018 in Dublin with the support of the [Network for Transdisciplinary Research \(td-net\)](#).

#### Lead:

DLA office

**Documentary film**

Two Swiss filmmakers are meeting DLA members in different countries to produce four short documentary films based on the [Lightbook](#). The topics “Daylight & Humans”, “Daylight & Nature”, “Daylight & Technology”, and “Daylight & Arts” will be explored through the knowledge and experience of several researchers and experts of daylight. Planning started in 2020 but filming was delayed due to the pandemic. At the end of 2021, a call for participation was sent to all DLA members based in Switzerland. This resulted in a very diverse and high-quality group of ten potential subjects for the film. Shooting started in the first half of 2022.

**Lead:**

**Prof. Jean-Louis Scartezzini**, Solar Energy and Building Physics Laboratory, EPFL Lausanne, Switzerland



Photo credit: Avel Chuklanov on Unsplash



Photo credit: Michał Ludwiczak from Pexels

**Summer School “Measuring light and illumination”**

Using Horace Bénédict de Saussure’s cyanometer (1789) for measuring the colour of the sky as a starting point, students will develop an interdisciplinary understanding of measurement and characterisation of light in the natural environment. Originally planned for 2020, this residential Summer School had to be postponed to 2022. To make the wait shorter, the working group launched the “[Daylight Insights](#)” in 2020. “[So you want to measure daylight?](#)” was the third edition of this series of webinars and took place on 29 April 2021.

**Lead:**

**Prof. Manuel Spitschan**, Max Planck Institute for Biological Cybernetics & Technical University of Munich, Germany

**Can daylight protect children from myopia?**

Myopia in school children is becoming increasingly common and is a serious public health issue, as it can lead to sight-threatening conditions. There is growing evidence that daylight exposure can both prevent the onset of myopia and slow its progression. The aim of this project is to develop an understanding of the mechanisms involved related to daylight and find ways to reduce the risk of children becoming short-sighted. The group is currently finalising a position paper.

**Lead:**

**Dr Mariëlle Aarts**, Eindhoven University of Technology, Netherlands, **Dr Richard Hobday**, engineer and independent researcher, UK



Photo credit: Wendy Aros-Routman on Unsplash

## Projects



Photo credit: Gabriel Tenan on Unsplash

### A room with a view

Daylight entering a room often goes hand in hand with a view out. However, the importance of a view and its quality need to be better understood. This project will address this question and examine the relation between the quality of a view and a room's daylighting. The group is planning a paper summing up their findings as well as a scientific project proposal addressing research gaps they have identified. They planned a workshop in Trondheim in August 2021 which was postponed to June 2022. In the meantime, the group met virtually.

#### Lead:

**Prof. Barbara Szybinska Matusiak**, Architect and Designer, Faculty of Architecture at NTNU, Norway

### Local differences in response to daylight

This working group was proposed to provide a better understanding of the influence the local context (latitude, culture and urbanisation) can have on our relationship to daylight and identify research gaps in this area. They planned a position paper promoting architecture and daylight design adapted to local physical and affective context. But due to the large number of ongoing projects, this initiative has been put on hold for the moment.

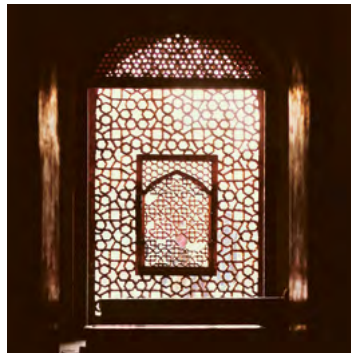
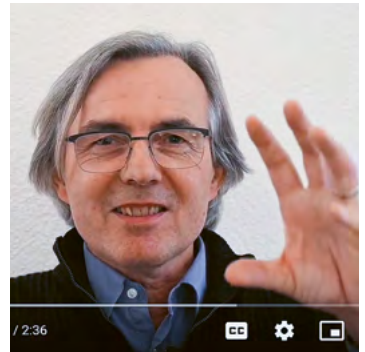


Photo credit: Shakeb Tawheed from Pexels



### ABOUT LIGHT

On the occasion of the DLA Annual Conference 2019 in Zurich, artist Siegrun Appelt conducted short video interviews with some of the conference participants. The idea behind this was to have various specialists talk about their professional and emotional approach to the subject of light. The inspiring videos are available on the [DLA website](#).

#### Lead:

**Siegrun Appelt**, Artist, Langsames Licht / Slow Light, Austria

### **Art installation "Lebensraum"**

This artwork created by Siegrun Appelt consisted of an installation made of children's voice recordings dealing with central questions of climate change and daylight. The children whispered texts prepared with DLA members from various backgrounds. It was exhibited from 28 May to 3 October 2021 at the Austrian Museum of Applied Arts (MAK) as part of the Vienna Biennale for Change 2021.

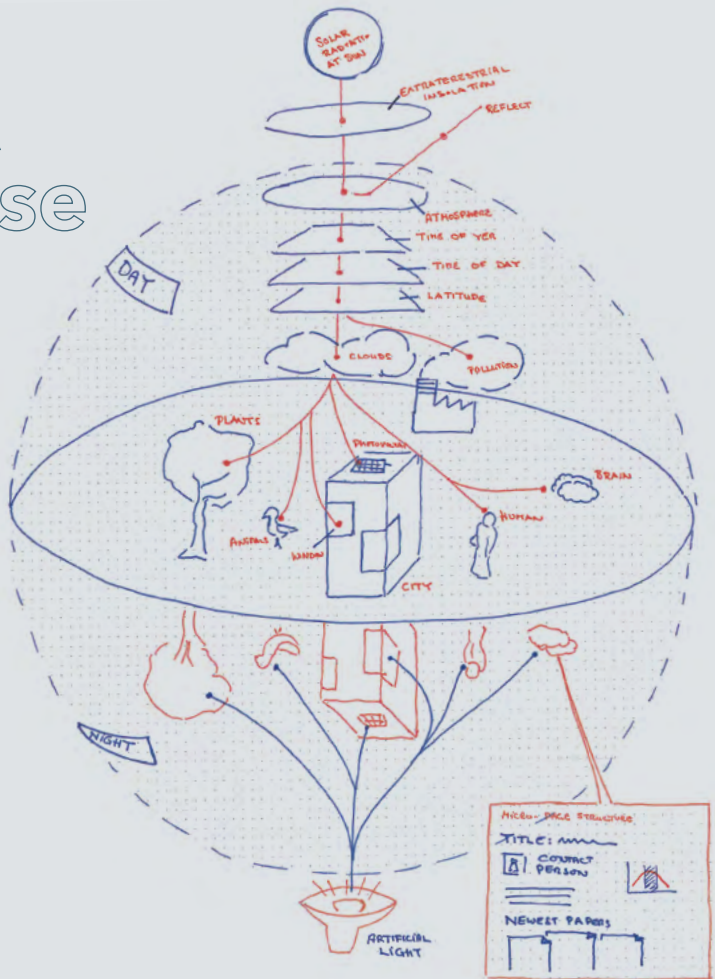
#### **Lead:**

**Siegrun Appelt**, Artist,  
Langsames Licht / Slow Light,  
Austria, **Constanze Müller**,  
Folkwang Universität der  
Künste, Germany



Photo credit: © Atelier Siegrun Appelt, 2021

# DLA House

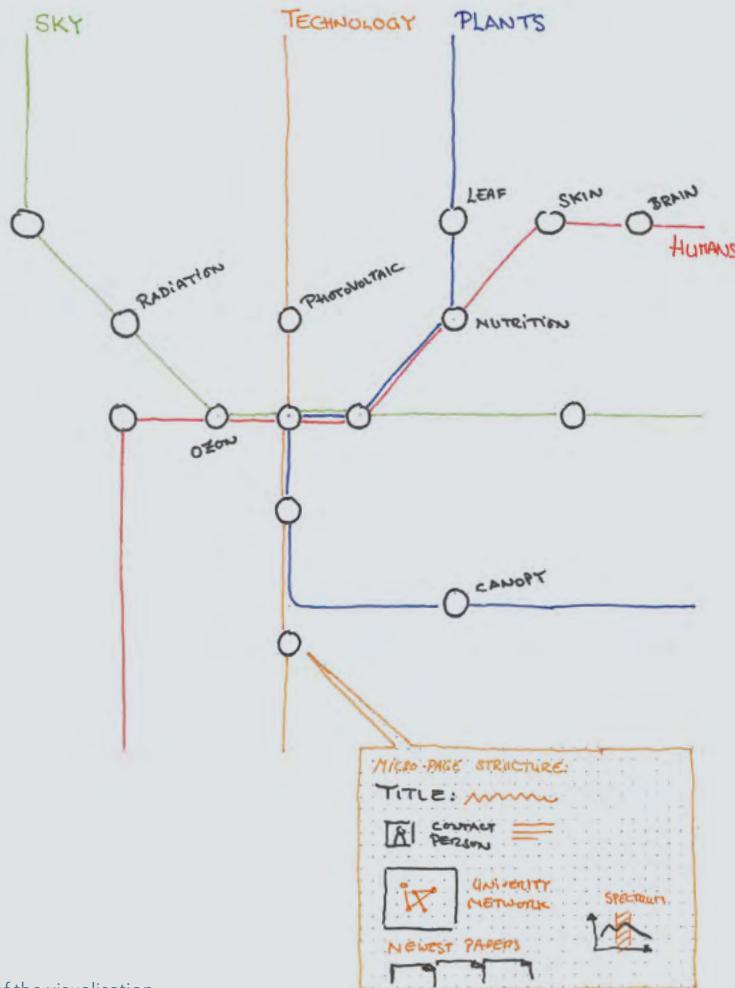


First sketch of the visualisation "Journey of Light", Darjan Hil, Superdot, 2021

The DLA House project aims to develop a virtual platform showing on one hand the different aspects of daylight research, and the interconnections between topics and disciplines, and facilitating on the other hand collaboration between experts. Three sub-projects are currently in development in collaboration with data design experts from the graphic design studio Superdot:

**\* The microsite “Journey of Light”:**

This aims to show the interactions between daylight and the diversity of elements on earth in an attractive and intuitive way - from the Sun to microbes. Many different interdisciplinary topics and projects of the Daylight Academy will be displayed and communicated through this interactive platform, with the goal of making daylight topics and the interplay between light and our world understandable, fun, and accessible to a lay audience.



First sketch of the visualisation "Metro Map of disciplines", Darjan Hil, Superdot, 2021

**\* The microsite "Metro Map of disciplines":**

The goal of this more formal representation is to visualise the complexity of daylight research by showing the intersections between topics and disciplines (like a metro map). Here, the process is as important as the product. By trying to define these interconnections, contributors to the project might identify gaps and needs for new collaborations.

**\* The "DLA Competence Network":**

This will be a section of the virtual platform where each DLA member will have a profile presenting them and connecting them with other members. Together, the different profiles will form a competence network and facilitate matchmaking and new collaborations within the Daylight Academy (DLA) and outside.

At the DLA Annual Conference 2022, participants will have the opportunity to collaborate on this project and further develop the "Journey of Light" and "Metro Map" visualisations.

# All project outputs at a glance

### Publications

- Changing perspectives on daylight: Science, technology, and culture. *Science/AAAS*, Washington, DC, 2017. (Lightbook)
- 5777 Kelvin. *TEC21*, Nr. 19, 10. Mai 2019: two articles (in German) based on the Lightbook.
- Knoop, M., et al. (2019). Daylight: What makes the difference?. *Lighting Research & Technology*.
- Knoop, M., et al. (2019). Daylight what makes the difference?. *DLA Publications*, Reprint.
- Münch, M., et al. (2020). The Role of Daylight for Humans: Gaps in Current Knowledge. *Clocks & Sleep*, 2, 61-85.
- Wirz-Justice, A., Skene, D., Münch, M. The relevance of daylight for humans, *Biochemical Pharmacology*, 2021.
- Informational booklet "Why do we need Daylight?"

### Educational event

- Winter School "Perspectives on Daylight", 13-18 January 2019, Mount Rigi, Switzerland (30 students and 13 experts)

### Public event

- "Bauliche Verdichtung – Leiden Lebensqualität und Gesundheit?", 12 March 2019, Architekturforum Zürich (around 80 participants)

### Webinars

- Materials responding to daylight, 17 September 2019 (around 30 participants)
- Twilight Talks, 10 and 24 August 2020 (Day 1: 153 participants / Day 2: 135 participants)
- Daylight Insights – So you want to measure daylight?, 29 April 2021 (201 participants)

### Artistic outputs

- Online art exhibition: DAY-LIGHT, 2019, an art-science project from the University of Regensburg, Germany
- Video interviews ABOUT LIGHT, 2019-2021, by Siegrun Appelt
- Art installation "Lebensraum", exhibited from 28 May to 3 October 2021 at the Austrian Museum of Applied Arts (MAK), by Siegrun Appelt and Constanze Müller



## What's next?

The DLA House project will be one of the largest undertakings at the Daylight Academy over the coming year(s). Once the structure of this virtual platform is more concretely defined, all members and further interested experts will be invited to contribute, and add their knowledge as the platform's content develops.

The project aims to integrate all perspectives, highlight the intersections between disciplines when addressing daylight-related topics, and show the broad spectrum of daylight research in an accessible and attractive way, also for a lay audience.

This will only be possible through broad collaboration.

Of course, all other fascinating projects will be further developed, and new initiatives are always welcome!

# Public events:

## informing and raising awareness

In addition to connecting daylight experts and encouraging interdisciplinary collaboration and innovative thinking, the Daylight Academy also pursues the mission of disseminating the knowledge to specialists, stakeholders, and the public. Between 2017 and 2021, ten public events were organised:

### **Bauliche Verdichtung - Leiden Lebensqualität und Gesundheit?**

This event took place in Zurich on 12 March 2019 and was organised by the working group "Daylight and green cities" together with the HSR (Hochschule für Technik Rapperswil) and the Architects Mäder+Mächler. It consisted of a panel discussion on urban densification, life quality, and health; all of which are linked to daylight. The room at the Architekturforum Zürich was densely packed with around 80 participants. After two input talks by DLA members Katharina Wulff and Christoph Küffer, three local experts on urban development, sustainable urban planning and architecture joined the podium discussion moderated by Judit Solt.

### **Materials responding to daylight**

(Day)light can elicit many different responses. In three short presentations, the webinar focused on how light makes plants move, can induce physiological effects, and change the properties of materials in buildings. An interdisciplinary view on a common phenomenon may help inspire new approaches in drug design, smart material development and other applications. About 50 people registered for this webinar which was held on 17 September 2019. It was part of the project "Materials responding to daylight" and the video is available on the [project webpage](#) or on [YouTube](#).



## Public events

### **Daylight Insights (formerly “Twilight Talks”)**

Initiated by the group behind the summer school “[Measuring light and illumination](#)”, this series consists so far of three webinars proposing an exploration of the colours, luminosity, and shadows of the sky as well as the way we measure and perceive it:

- [Illuminating circadian circuits](#), with Neurobiologist [Tiffany Schmidt](#), 10 August 2020 (153 participants)
- [How the Sun paints the Sky](#), with Astronomer [Robert Fosbury](#), 24 August 2020 (135 participants)
- [So you want to measure daylight?](#), with a multidisciplinary panel of speakers, 29 April 2021 (201 participants)

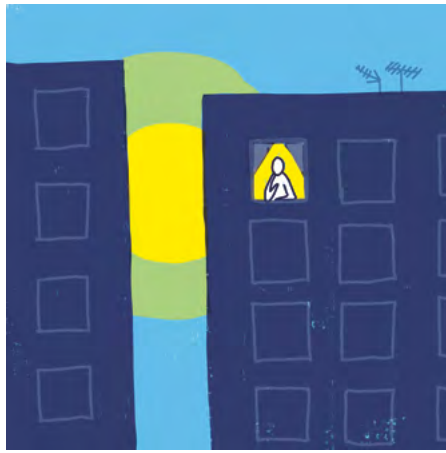


Photo credit: NO NAME from Pexels

# Daylight Awareness Week

## When daylight rhymes with health (2020)

As Covid-19 was imposing its own law, event plans had to be revisited, which resulted in the organisation of a virtual public event highlighting the health benefits of daylight. It consisted of three interactive webinars and was held from 22 to 24 September 2020. The concept met with considerable success achieving 330 registrations per day on average and reaching 35 countries in four continents. The three webinars addressed the following topics:



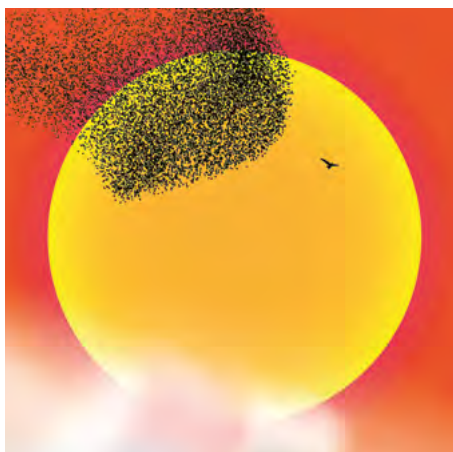
Illustrations: Marina Roa, SenseiRibe

1. The disinfection powers of daylight
2. In the shade of the lockdown - How does the lack of daylight affect us?
3. Daylight for healthy and sustainable living spaces

### Three reasons why we need daylight (2021)

To celebrate the International Day of Light (16 May), the Daylight Academy organised the second edition of its “Daylight Awareness Week” from 25 to 27 May 2021. Almost 400 people from 45 different countries registered for these public virtual talks dedicated to the three topics listed below.

All videos can be viewed on the [event website](#) or on the [DLA YouTube channel](#).



1. Daylight regulates our body functions
2. Lack of daylight can cause illness
3. Daylight guides plants, animals, and humans through seasons

Illustrations: hilda design matters Zurich

## Public events

### DeLIGHTed Talks

Webinars from this series aim to inform and raise awareness about the importance of “good light”, defined as natural light or artificial light mimicking natural light as much as possible. The DLA organises them in collaboration with the [Good Light Group](#), the [Society for Light Treatment and Biological Rhythms \(SLTBR\)](#), the [International Association of Lighting Designers \(IALD\)](#) and [Luger Research](#):

- Good Light, Good Life, 11 May 2021 (170 participants)
- Good Light, Good Life in wintertime, 3 November 2021 (93 participants)

Videos of these online talks are available on the [Good Light Group website](#).

### Launch event and expert talk

To celebrate the launch of the comic book “[Enlighten your clock: How your body tells time](#)” and its [22 translations](#), the editor Manuel Spitschan invited the illustrator Coline Weinzaepflen as well as the translators to share online their experience with the book. In addition, an excellent talk about sleep, light and mental health in teenagers was given by Psychiatrist [Daniel Smith](#). It was impressive to see how many different countries were involved and a wonderful acknowledgement of the great work these volunteers did. Hosted by the Daylight Academy, the event took place on 21 October 2021 and was attended by 60 people.



چونکہ آپ کے جسم کا اندرونی حیاتیاتی توازن چوبیس گھنٹے  
مکمل طور پر درست نہیں ہوتا، لہذا ہمیں ایک ایسے  
راستے کی ضرورت ہے جہاں ہماری تمام اندرونی  
گھڑیاں آپس میں ہم آہنگ ہو سکیں



اور روشنی ہماری  
مرکزی سرکیڈین  
گھڑی کو ہمارے ماحول  
کے ساتھ ہم آہنگ  
کرنے میں مدد کرتی ہے

Image from the comic  
book "Enlighten your clock:  
How your body tells time"  
illustrated by Coline Weinzaepflen

## Contributions to external conferences

- **SLTBR Annual Meeting 2017**  
23-25 June 2017, Berlin. *The DLA supported a symposium dedicated to daylight research.*
- **SRBR International Meeting 2018**  
12-16 May 2018, Florida. *An excellence Award on photoreception pathways in plants was given in the name of the DLA.*
- **SLTBR Annual Meeting 2018**  
21-24 June 2018, Groningen. *The DLA was presented at the networking session and through an official stand.*
- **SLTBR Annual Meeting 2019**  
20-22 June 2019, Chicago. *The DLA was presented at the networking session and through an official stand.*

# “Daylight – a free resource for all like air”

## An Interview with Lykke Ogstrup Lunde, chair of the Velux Stiftung board

by Lydia Moreno, Program Manager of the Daylight Academy

**Lydia Moreno: The Daylight Academy (DLA) started at the end of 2016 as a program of the Velux Stiftung, how did the idea of launching such a platform emerge?**

Lykke Ogstrup Lunde: Discussing the international Daylight Award\*, the idea came up to add a community to the award in order to enhance interdisciplinary coordination and exchange. It was then decided to separate this idea from the award and the community-part was parked, so to say.

In the years 2014-2015, the foundation held several “daylight workshops” and it was at one of these workshops the idea was revitalised. Once the idea was out there it was hard to ignore. Participants were excited about the idea and so was the board and management of the Velux Stiftung.

**What were the reasons for the foundation to support this initiative?**

We had a very strong belief that if we were able to create a space for knowledge sharing, a room where people with strong track records in their field could meet with like-minded people from other fields, new ideas, new ways of being curious around daylight would arise. The fact that there was a chance to give the academy total independence made it even more attractive – a fundamental belief for the Stiftung is that free environments will generate better ideas.

**Ms Ogstrup Lunde, you have been following the DLA activities during its first five years. Are there developments, projects, or events that have particularly caught your attention?**

It has especially been fascinating to see how new connections, new ideas and ways of problem solving and shedding light on different challenges has formed during the five years. So many competent and clever people connected through the DLA and it has been a pleasure to see the collaborations and the projects that have evolved from these encounters.



Photo credit: Velux Fonden / Pernille Greve

Lykke Ogstrup Lunde graduated from the University of Southern Denmark's with a BSc in Journalism in 2004. Her field of expertise lies in the financial sector, with a particular focus on asset management, sustainable investing and 'impact investing'. Lykke has been a board member of the Swiss foundation Velux Stiftung since 2009 and became chair of this board in 2017. Since 2021, she is also chair of the VELUX FONDEN's board, a foundation based in Denmark.

Also, I would like to enhance the energy and time that has been put into the Academy from all participants.

**What do you wish the DLA for its next five years?**

Strength, growth, and independence. And also making more people aware of the importance and potential of daylight - a free resource for all like air. Water is not free anymore for all, but daylight still is.

\* The Daylight Award is an international prize conferred biennially by the philanthropic foundations VILLUM FONDEN, VELUX FONDEN and VELUX STIFTUNG. It rewards remarkable achievement in two categories: daylight research and daylight in architecture.

**Flash Daylight Questionnaire**

**Owl or lark?:** I am an owl transformed into a lark ever since I had kids.

**Fondest memory related to daylight:** Every spring in Denmark when the light returns, and you can stay outside during the evenings in April/May

**Fun fact about daylight:** When I found out that most scientific work done on daylight is performed with artificial light, I was blown away. Obviously, I am not a scientist, but still I think it is somehow "wrong".

**Favourite superpower of sunlight:**

It wakes up my teenager when I roll up the curtain - now that's a superpower!

**Greatest potential of daylight research for the future:**

There is potential in all the research areas related to daylight, because there is so much we don't know. But in light of the current energy-crisis, climate-crisis, biodiversity-crisis, social inequality-crisis I see great potential in all research related to these areas. Also in the research related to darkness.

## Online communication

During its first five years, the DLA office has set up a range of communication tools allowing the sharing of information between the Academy, the members, the scientific community and the general public.

### DLA website

The website [www.daylight.academy](http://www.daylight.academy) was launched in early 2017. Initially, it was conceived as a one-page website containing only background information. As the Academy and its activities developed, a need for a larger and more interactive website arose and a second version went online in October 2019. From this point on, separate pages were dedicated to the DLA projects, news items, the annual conference and other events.

In April 2020, a "Corona-Blog" was added to the website to provide information on the health benefits of daylight particularly in the context of Covid-19. Several DLA members and guest authors contributed to the blog, later called [DLA Blog](#).

### Social media

The DLA has been present on social media since August 2019, when its Twitter account ([@DaylightAcad](#)) was created. A profile on [LinkedIn](#) followed one year later. Both platforms are widely used by the scientific community and many members of the DLA network are active on them. They are therefore efficient and important communication channels to spread news from the Academy.

### Newsletter

The newsletter "[DLA News](#)" is sent 3 to 4 times a year to the subscribers with updates about the running projects, interesting events, and other relevant news. The number of subscribers is modest and has increased very slowly over the years (see table below). The open rates are nevertheless very good (between 56% and 59%) and suggest it would be worth promoting the newsletter more actively.



DLA  
DAYLIGHT  
ACADEMY

The Daylight Academy promotes international and interdisciplinary cooperation among scientists, architects and other professionals involved in daylight research or with a strong interest in daylight related topics.



DLA member Anna Wirz-Justice received the Daylight Award 2022 for Daylight Research!



"The relevance of daylight for humans" released as a new issue in the DLA Reprints series!



Daylight Awareness Week 2022 - Videos now available!

## Key statistics

	2017	2018	2019	2020	2021
<b>Website:</b> average users per month	113	155	226	851	334
<b>Twitter:</b> total followers at each year-end	-	-	87	270	447
<b>LinkedIn:</b> total followers at each year-end	-	-	-	248	642
<b>Newsletter:</b> recipients / average open rate	-	135 / 58%	150 / 59%	149* / 56%	183 / 57%

\* Decline due to the new data protection regulations

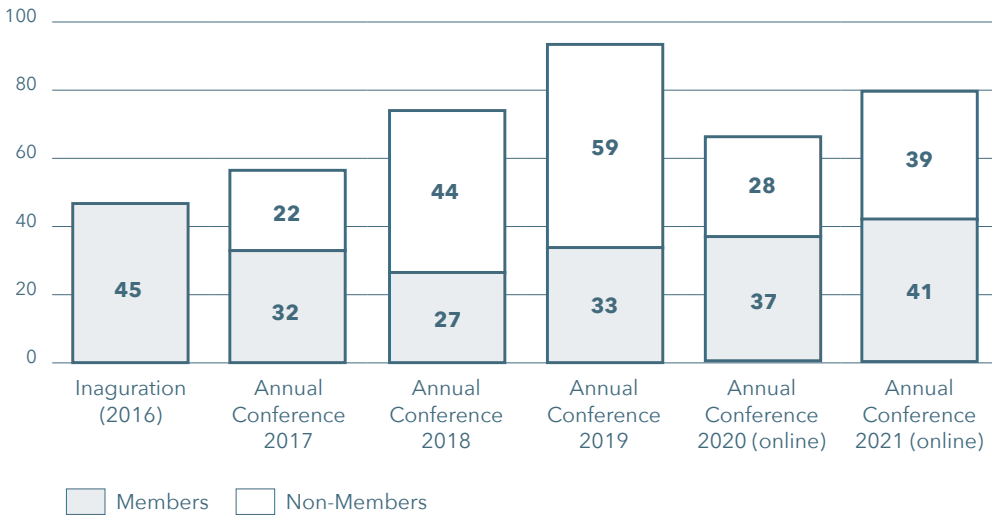
# Members & network

## Evolution & commitment

The DLA started in 2017 with 65 founding members. While the number of members has increased relatively slowly (77 members at the end of 2021), the actual network – people we are in contact with and who are invited to the events and meetings – has constantly grown, reaching nearly 300 scientists and other daylight experts at the end of 2021.

Participation in the annual conference increased between 2017 and 2019. Then, it was curbed in 2020 probably because of the pandemic and the shift to the online format (see fig. 1).

**Fig. 1: Participation in DLA annual conferences**



Regarding commitment of members, the figures are generally positive: around 50% of the members on average attend the main events and between 30% and 50% contribute to projects each year.

### Members elected between 2017 and 2021

#### 2018

- Dr Lenka Maierova, University Centre of Energy Efficient Buildings (UCEEB), Czech Technical University in Prague, Czech Republic
- Ass. Prof. Oliver Stefani, Centre for Chronobiology, University of Basel, Switzerland
- Dr Katharina Wulff, Radiation Sciences and Molecular Biology, Umeå University, Sweden

#### 2019

- Prof. em. Dr Heinrich Walt, Dept. of Oral- and Cranio-Maxillo-Facial Surgery, University Hospital Zürich, Switzerland

#### 2020

- Dr K. David Harrison, Vice Provost of Academic Affairs, Faculty of Arts & Sciences, VinUniversity, Hanoi, Vietnam
- Prof. Werner Osterhaus, Lighting Design Research, Aarhus University, Denmark

- Prof. Manuel Spitschan, Max Planck Institute for Biological Cybernetics & Technical University of Munich, Germany

#### 2021

- Prof. Urs Albrecht, Department of Biology, University of Fribourg, Switzerland
- Prof. Christian Fankhauser, Center for Integrative Genomics, University of Lausanne, Switzerland
- Dr Sabine Kling, Department of Information Technology and Electrical Engineering, ETH Zürich, Switzerland
- Prof. Greta Patzke, Department of Chemistry, University of Zurich, Switzerland
- Dr Natalia Sokol, Gdansk University of Technology, Poland
- Dr Jan Wienold, Laboratory of Integrated Performance in Design, EPFL, Lausanne, Switzerland
- Prof. Nouredine Zemmouri, Department of Architecture, University of Biskra, Algeria

### What's next?

An online competence network presenting and connecting all DLA members is under development. Each member will have an own profile on the DLA website with keywords allowing networking and matchmaking.

All members are expected to contribute to membership growth and do so by inviting new experts (specially from underrepresented disciplines) to conferences or to collaborate in projects.

Maybe you could be a future member of the Daylight Academy. Is interdisciplinary thinking one of your strengths and daylight an important topic in your research or work? Then contact us at [office@daylight.academy](mailto:office@daylight.academy).

## Members & network

### Members' diversity

The 77 members of the organisation at the end of 2021 represent seventeen different countries (see principal countries in fig. 2) and a wide variety of fields (see fig. 3).

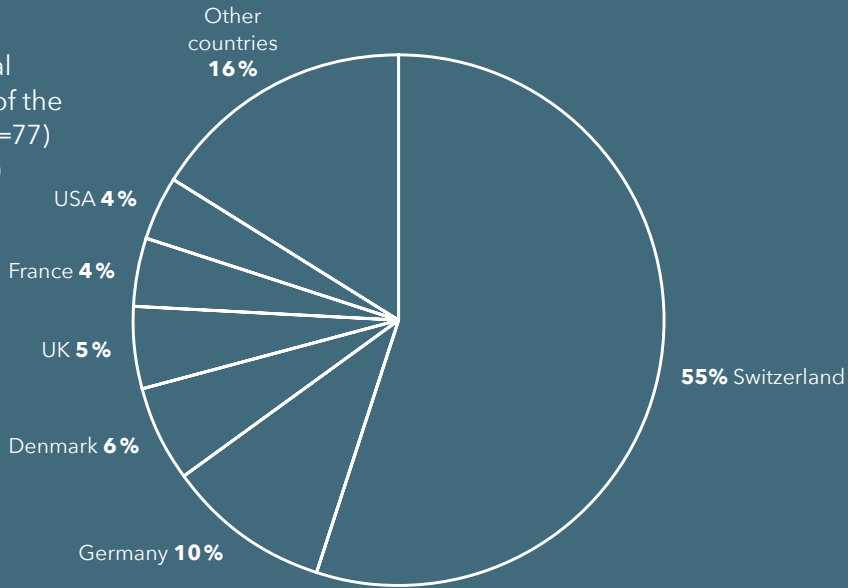
As illustrated in figure 2, the majority of the current members are based in Switzerland. Only a small proportion of the membership (nearly 8%) is from non-European countries. The large Swiss membership can of course be explained by the fact that the Academy has been initiated in Switzerland by a Swiss foundation and that most events have so far taken place in Switzerland. Nevertheless, many members based in Switzerland originate from different parts of the world and generally all DLA members provide the Academy with access to, and insight from many international networks.

The range of expertise among the members is already quite diverse and relatively balanced (see fig. 3). Over the next few years, the challenge will be to maintain this balance and extend the spectrum even more by including disciplines which are not represented yet, like sociology, psychology, and economics.

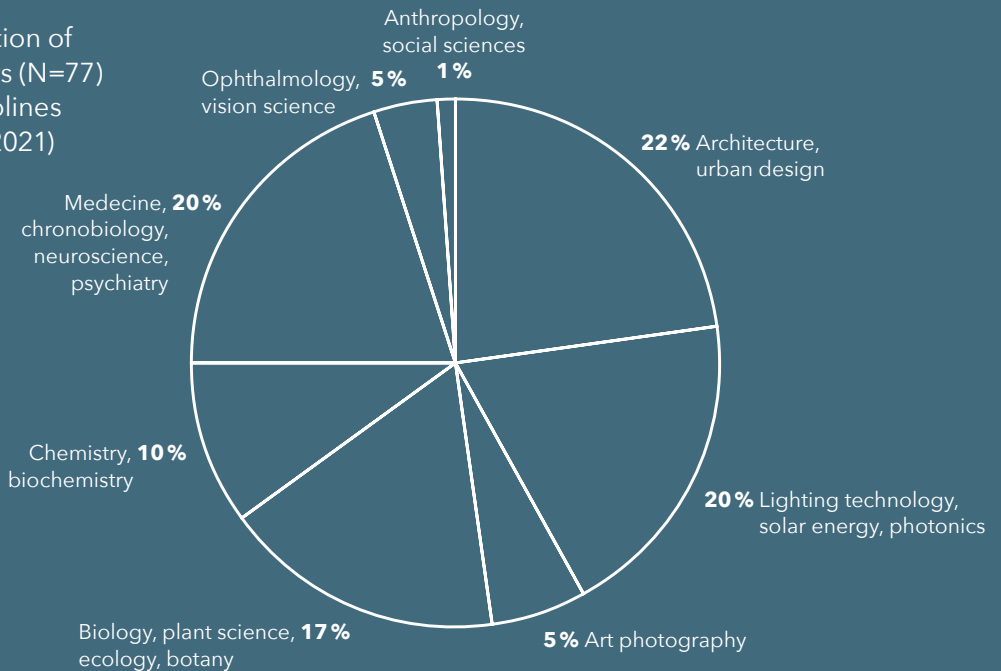
Regarding gender, the figures at the end of 2021 reveal an imbalance: among the 77 members, 57 are men, which represents almost three quarters of the total. This situation must be taken into account when acquiring new members. A more balanced distribution should be strived for in a progressive, but proactive, manner.



**Fig. 2:**  
Geographical  
distribution of the  
members (N=77)  
(end of 2021)



**Fig. 3:**  
Distribution of  
members (N=77)  
by disciplines  
(end of 2021)



# “Investments in daylight research are crucial”

## An Interview with Dr Natalia Sokol, DLA member since 2021

by Viola Lorenz, Junior Project Manager at the Daylight Academy

### **Viola Lorenz: Dr Sokol, you became a member of the Daylight Academy (DLA) last year (in 2021). What convinced you to join this scientific network?**

Natalia Sokol: It is a pleasure to be invited to the DLA annual conferences. The discussions with other researchers from various fields on how to implement daylight research into society and popularise daylight knowledge for the global benefit of all of us; the importance of this topic was what motivated me to decide to dedicate time to the DLA's work and apply for membership.

I firmly believe that investments in daylight research are crucial, especially in the face of energy and health crises and our constant struggle to have less impact on our environment. Daylight is taken for granted. Nevertheless, we do not fully understand its impact on circadian entrainment and we continue to see many unfortunate daylight design solutions in the built environment. I am convinced that the unveiling of daylight's impact on different areas of our lives is a great adventure for every scientist involved.

### **Has your involvement in DLA projects and activities already benefited you professionally?**

My involvement in the projects "Educational package on daylight", "A room

with a view" and "Daylight metrics, measurements, and data" have benefited me professionally. First, I had the pleasure of cooperating with distinguished scientists with diverse expertise. The DLA has given us a platform to meet and cooperate and create solutions or ideas across disciplines and cultures. Secondly, the exchange of ideas led to unconventional solutions, such as finding universal educational language to teach daylight nuances to a broad audience, or looking at the benefits of view from a window from totally new cross-disciplinary perspectives. The opportunity to discuss them during this project has resulted in out-of-the-box solutions.

### **New members like you bring new energy but also a fresh look at the organisation. Where do you see potential for improvement?**

There is definitely the potential to reach out to the broader international audience with more publications like "[Changing perspectives on daylight: Science, technology, and culture](#)" (Science/AAAS, Washington, DC, 2017) but also through summer schools for students, online lectures and e-learning platforms for students and young professionals.



Dr Natalia Sokol is an Assistant Professor at the Gdansk University of Technology with 18 years of international lighting design and teaching experience. Dr Sokol's research for the Faculty of Architecture focuses on daylight appraisal tools, users' perception of variously lit environments, architectural lighting design and daylight education. She is one of the founders of the NLITED e-platform dedicated to free and universal daylight education.

However, as members, we should do more to advertise events like [Daylight Awareness Week](#) or [DeLIGHTed Talks](#). I am really looking forward to the DLA House project acting as a hub for cross-discipline educational content.

**Where would you like to see the DLA in five years?**

First of all, I would like to thank you, the DLA staff, for all the initiatives over the last five years which I have been following closely. In five years, I would like to see the DLA as a global organisation with solid international outlets and

ambassadors/members at various European universities. The formula of the DLA for supporting cross-discipline research is very appealing. Maybe it could be target-advertised to national research institutes and universities' journals. One of the channels of such target-advertising could be universities' e-journals or paper editions. They are still quite popular knowledge/information conveyors for national research communities.

I would like every student at my university to know about the DLA's work. An article about the DLA's activities in a university's journal would be more than helpful in this. Maybe it would be worth preparing a draft for a template paper. I am willing to help.

**Flash Daylight Questionnaire**

**Owl or lark?:** Owl converted to lark

**Fondest memory related to daylight:** Sunlight's warmth on my cheek while resting on a mountain's peak

**Fun fact about daylight:** A comment during the classwork on simulations: "Why does daylight have to be dynamic? Static daylight is easier to simulate."

**Favourite superpower of sunlight:** "Zeitgeber", mood-changer, shadows' creator

**Greatest potential of daylight research for the future:** In addition to all research breakthroughs connected with daylight, daylight science can transform how we design the built environment, from a single building to a whole city.

# Organisation & governance

## DLA Steering Committee

The steering committee consists of five to seven members representing the different disciplines and geographical areas active in the Academy. It acts as the governing body, supervises the strategic choices of the Academy, and takes all important decisions.

From 2017 to 2021, the steering committee consisted of:

- **Prof. Jean-Louis Scartezzini**, Solar Energy and Building Physics Laboratory, EPFL Lausanne, Switzerland (Speaker until 2.12.2021)
- **Ass. Prof. Katharina Wulff**, Radiation Sciences and Molecular Biology, Umeå University, Sweden (from 19.11.2020) (Speaker from 2.12.2021)
- **Dr Mariëlle Aarts**, Department of the Built Environment, Eindhoven University of Technology, The Netherlands (from 19.11.2020)
- **Prof. Arthur Gessler**, Swiss Federal Institute for Forest, Snow and Landscape Research WSL, Birmensdorf, Switzerland
- **Prof. Albert Gjedde**, Center of Neuroscience, Faculty of Health and Medical Sciences, University of Copenhagen, Denmark
- **Dr Richard Hobday**, Engineer, researcher, and author, UK (from 2.12.2021)
- **Prof. Markus Kalberer**, Department of Environmental Sciences, University of Basel, Switzerland (from 2.12.2021)
- **Prof. Burkhard König**, Institute of Organic Chemistry, University of Regensburg, Germany (until 2.12.2021)
- **Prof. Brian Norton**, Tyndall National Institute, University College Cork and TU Dublin, Ireland (until 2.12.2021)
- **Prof. Bernhard Wehrli**, Surface Waters Research & Management Eawag Dübendorf, Switzerland (until 19.11.2020)
- **Prof. em. Anna Wirz-Justice**, Centre for Chronobiology, Psychiatric Clinics, University of Basel, Switzerland (until 19.11.2020)



First steering committee of the DLA at the Annual Conference 2019 in Zurich (from left to right: Jean-Louis Scartezzini, Anna Wirz-Justice, Bernhard Wehrli, Arthur Gessler, Burkhard König, Brian Norton, Albert Gjedde)





The first seven steering committee members and their journey at the Daylight Academy. Can you find them?

Illustrated by Marina Roa from SenseTribes

## Organisation & governance

### DLA office

The management of the DLA was first assigned to a project management office independent from the Velux Stiftung: point it ag. In September 2017, the DLA office was embedded in the foundation office and assigned to a program manager hired by the foundation. From 2017 to 2021, the DLA office was managed by:

- **Ms Katja Brun** (point it ag)  
(until September 2017)
- **Ms Lydia Moreno**, Program Manager  
(from September 2017)
- **Ms Viola Lorenz**, Intern and then Junior Project Manager  
(from June 2021)

with the precious support of the entire Velux Stiftung's team.

### Imprint

Editing: Lydia Moreno, Program Manager of the Daylight Academy, Zurich, Switzerland

Design: hilda design matters, Zurich, Switzerland

Print: FO-Fotorotar AG, Egg/ZH, Switzerland

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[www.daylight.academy](http://www.daylight.academy)







## **Why Daylight?**

Daylight is central to public health and the environment. Half of the world's population now lives in urban areas. For many, their access to daylight is limited by a poor built environment and air pollution. Clean, renewable sources of energy are a pressing need, as is a greater recognition of the hazards of living and working indoors. Disrupted biological rhythms, sleep and mood disorders, inadequate vitamin D levels and myopia are just some of the health risks that insufficient exposure to daylight brings with it.



# DAYLIGHT ACADEMY

Daylight Academy  
A VELUX STIFTUNG initiative  
Kirchgasse 42  
8001 Zürich  
Switzerland

[www.daylight.academy](http://www.daylight.academy)  
[office@daylight.academy](mailto:office@daylight.academy)  
[@DaylightAcad](https://twitter.com/DaylightAcad)