

ALAN 2025

Artificial Light at Night Conference

28–31 October 2025

Westport Woods Hotel, Westport, County Mayo, Ireland

Hosts: Dark Sky Ireland; Friends of Mayo Dark Skies





Welcome to ALAN 2025 Fáilte go ALAN 2025

On behalf of Dark Sky Ireland and the Friends of Mayo Dark Skies, it is my great honour to welcome you to the 9th International Artificial Light at Night (ALAN) Conference that this year has brought us to the west of Ireland. This marks the first time that Ireland has had the pleasure of hosting this global gathering, and we are thrilled to welcome you to the beautiful town of Westport, which will be our base from the next few days.

This conference is a testament to the growing global understanding of the impacts of light pollution on our environment. Over the next few days, we will come together as researchers, advocates, and experts to share knowledge, explore cutting-edge science, and strengthen our shared commitment to protecting our night skies. From the effects of artificial lighting on biodiversity and human health to the latest in lighting design, the program is filled with insights from our diverse and dedicated community of scientists and professionals working on the various aspects of artificial light.

It is very fitting that we are hosting you in County Mayo, home to the internationally recognised Mayo Dark Sky Park.

While you are here, we hope you will take the opportunity to experience some of the darkest skies in Europe that make this region so special and understand first-hand why this work is so vital.

Beyond the conference, I encourage you to enjoy the legendary hospitality of Westport, Mayo and Ireland, and to connect with the many international colleagues who have joined us this year. The discussions and collaborations that begin here will undoubtedly help us all move toward a brighter—and darker—future.

Thank you for joining us, and here's to making this the most successful ALAN conference yet.

Beir bua agus le dea-ghuí!

Best wishes,

Professor Brian Espey

Chair, Dark Sky Ireland

Local Organising Committee, ALAN 2025



Welcome from the Science organisers

Welcome to the 9th Scientific Conference on Artificial Light at Night, ALAN2025 in Westport, Ireland. It's going to be a full and diverse conference!

With 144 submissions and almost 200 attendees, we have a new ALAN record. As the interest in ALAN increases, the emphasis of the ALAN conference is slowly changing. This conference is a valuable place for researchers to discuss their projects with peers from their own and from other disciplines. It is a place where researchers from nature science and technology meet colleagues from social sciences and humanities. It's a scientific conference.

But it's always great for researchers to have their results recognised and used for science-based practice. This year, we have a small but highly welcome group of lighting designers who show how the need to reduce ALAN influences their projects. We also will hear how science communicators increase awareness for the value of darkness. And we will hear about the growing number of regulations and legislation on light emissions.

We are also lowering borders. For a long time, it seemed that there are two factions within the ALAN community: the "industry" who wants light for its beauty and for safety, and the "dark sky defenders" who want to keep the skies dark

to see the stars and protect nature. Reality gives us another picture. As our nights get brighter, we value subtle lighting designs. We understand the real consequences of ALAN and question the long-preached benefits of artificial light. Does more light really makes us safer? Do we lose the beauty of our cities if we don't illuminate them brightly?

In the coming days we will hear arguments for a more careful use of ALAN. We will have time for exchanges between researchers, communicators, practitioners, and activists. We will have lots of scientific talks about the newest ALAN results, but we will also have workshops.... and there will hopefully still be enough time to just talk over a cup of tea or coffee (or a good pint). Together, with our different ways of thinking and acting, we will bring chance to the world around us.

My thanks go to the local organising team from Dark Sky Ireland and Mayo Dark Skies who worked hard over the last two years to make this conference happen. And thank you all for being part of ALAN2025!

Best wishes

Annette Krop-Benesch

Co-chair steering committee

ALAN is a conference series dedicated to exploring all aspects of artificial light.

The Artificial Light at Night (ALAN) conference is an international meeting for scientific researchers and professionals working on various aspects of artificial light. Since its inception in 2013 in Berlin, it has grown to become the largest conference of its kind globally. The event brings together a wide range of experts, including researchers, policymakers, and lighting designers, to exchange knowledge and discuss how to mitigate the negative effects of artificial light.

The conference's broad scope covers all aspects of artificial light at night and its consequences. The main areas of focus include how light is produced (e.g. technologies, industry, and lighting

design), where it is present (e.g. remote sensing); what effects it has on the environment and humans (e.g. ecology, epidemiology); how it is perceived by the public (e.g. perceptions of safety and security), and how the benefits and detriments of lighting may be balanced by regulation.

One of the conference's strength lies in its interdisciplinary approach, drawing participants from diverse fields to encourage collaboration and networking. It serves as a platform for knowledge sharing, presenting new scientific findings, exchanging ideas, and discussing better lighting concepts. It has grown in size and international participation since its first event.





Dr. Elena Maggi

Professor at the Marine Biology and Ecology Unit - Department of Biology University of Pisa, Italy

Elena Maggi is a field ecologist and professor at the University of Pisa (Italy). Her research focuses on the evaluation of the effects of natural and anthropogenic factors in structuring or modifying coastal marine habitats. Since 2016, she has investigated the effects of nighttime light pollution on coastal communities, and in particular on trophic networks that include primary producers such as seaweeds, seagrasses and microalgae.

She is the coordinator of the AquaPLAN project (<https://aquaplan-project.eu/>), funded under the Horizon Europe programme, which deals with the interactive effect between light and noise pollution in marine and freshwater habitats. Within the project, she is the leader of activities aimed at monitoring and evaluate the effect of artificial light and noise on two priority subtidal habitats: seagrass meadows and macroalgal forests in the northwestern Mediterranean Sea (Italy).

She is member of GOALANN (<https://goalann.org/>), an international network of the world's leading experts in marine light pollution, whose mission is to conserve the oceans by improving knowledge and awareness of marine light pollution, its ecological and societal impacts, and management options. “



Yana Yakushina

Research Fellow, University of Ghent, Belgium

Yana Yakushina is a lawyer, researcher, and dark sky protection educator. She is actively involved in initiatives related to dark sky protection and space law.

Currently pursuing a PhD at the University of Ghent (Belgium) as part of the Horizon EU project – PLAN-B, Yana is actively shaping the legal framework for recognising light pollution as a critical environmental concern. Yana also serves as one of the scientific coordinators of the PLAN-B project. On the space law front, she serves as the Deputy Executive Director at the Space Court Foundation Inc., overseeing projects that regulate space activities globally, including the “Big Book of Space Law.”

Yana has successfully participated in international legal research projects in dark sky protection and space law, collaborating with organizations such as the EU Commission, DarkSky International, Starlight Foundation, International Astronomical Union, and UNOOSA, among others. Leading a research group within the IAU CPS Policy Hub, Yana analyzes national approaches to protecting dark and quiet skies.

Additionally, Yana is a member and advisor of various NGOs, including Dark-Sky International, Starlight Foundation, and the International Institute of Space Law (IISL). In 2023, she became a board member and co-founder of the Belgian dark sky protection organization – Living Night (IDA Chapter).



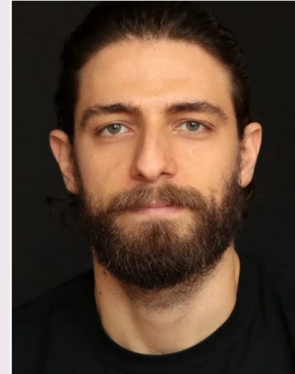
Ulrike Brandi

Transnational Lighting Detectives

Ulrike Brandi is a lighting designer in Hamburg. She founded her office Ulrike Brandi Licht in 1986 and the Brandi Institute for Light and Design in 2013.

For over 35 years, she and her office have planned the artificial and/or daylight for more than 1,300 projects worldwide (interiors and exteriors) and collaborated with the most important architects of our time. She has designed the lighting for the Elbphilharmonie Hamburg, Terminal 2 and satellites at Munich Airport, Terminal 2 at Pudong International Airport, Shanghai, Rotterdam Central Station, the Royal Academy of Music in London, the Hafencity lighting master plan in Hamburg and the lighting master plan for the city of Rotterdam. Ulrike Brandi has curated exhibitions such as “The Secret of Shadows” at the German Architecture Museum and “Day Light Night” at the Istanbul Modern Museum. She is a founding member of the Transnational Lighting Detectives, Tokyo (1995) and has been a member of the Hamburg Lighting Advisory Board since 2005. She is an IALD Fellow.

In her lighting design work and lectures, she is committed to using good lighting to create beautiful, pleasant, communication-friendly and inviting spaces indoors and in public.



Kerem Asfuroglu

Founder of Dark Source

Kerem Asfuroglu is the founder of Dark Source, an award-winning lighting design studio driven by environmental values based in the UK & Ireland.

Following his graduation from Wismar University – Architectural Lighting Design MA in 2010, Kerem worked in the lighting industry for almost a decade before setting up Dark Source in 2019.

He has been awarded the title of Dark Sky Defender by the IDA for advocating the importance of darkness through design. Some of his environmental lighting projects include the Plas Y Brenin Outdoor Centre, Presteigne Dark Sky Community, Newport Dark Sky Masterplan, Cloughjordan Ecovillage and Cumbria TAN Dark Sky Planning Policy.



Dr. Hector Linares-Arroyo

Postdoctoral Researcher

Dr. Hector Linares-Arroyo is a young light pollution researcher with experience in remote sensing, radiative transfer models, data processing, and sky brightness instrumentation. Combining a background in Engineering (BEng Aeronautics) and Astronomy (MSc), he focused his PhD on light pollution measurement and modeling under the supervision of Eduard Masana and Salvador Ribas.

Afterwards, he has been continuously working on various light pollution projects in different topics and institutions. For instance, he worked as a postdoc with Martin Aubé, where he contributed to improving the Illumina model. He coordinated ESA's Night-Watch project, an international effort to design a nighttime satellite mission. He also collaborated as a remote sensing expert on the Earth Explorer 12, European Urban Light Explorer proposal, and he has worked on different occasions as an administrative consultant.

His research is currently focused on two different areas. First, he is creating user-friendly light pollution assessment tools to close the gap between modeling and inexperienced stakeholders. Second, he is developing methodologies for creating sky brightness maps of vast areas representing the actual and hypothesized situations.



Dr Robert Lucas

Professor Division of Neuroscience and Centre for Biological Timing, Faculty of Biology Medicine and Health University of Manchester, UK

Professor Division of Neuroscience and Centre for Biological Timing, Faculty of Biology Medicine and Health University of Manchester, UK.

Rob Lucas is the GSK Professor of Neuroscience at the University of Manchester. He runs the Lucas Group Research Lab studying mechanisms of light detection in animals and the multiple ways in which light influences their behaviour and physiology. Rob has a long-standing interest in updating methods of light measurement to improve their relevance for biological responses beyond human vision.



Nick Dunn

Professor of Urban Design and Director of Imagination, Lancaster University

Nick Dunn is Professor of Urban Design and Director of Imagination, the design-led research centre at Lancaster University, UK.

He is also a Director of DarkSky UK, developing more sustainable relationships between the built environment and the night, as well as exploring ways to promote wider and inclusive participation with dark skies.

Nick is the author of *Dark Matters* (2016) and *Dark Futures* (2025) and co-editor of *Rethinking Darkness* (2020) and *Dark Skies* (2023).

Tuesday

DAY 1 ● TUESDAY 28th October

08:00 - 14:00

Registration Open: Mulberry Suite, Westport Woods Hotel, Westport, Co. Mayo

09:00 - 10:00

Morning Plenary Session: Mulberry Suite **Co-Chairs:** Annette Krop-Benesch & Brian Espey **Official Opening Remarks:** Minister Dara Calleary **Guest Speaker:** Hector Linares

10:10 - 11:25

Ground based measurement networks M**Chair:** John Barentine**Venue:** Mulberry Suite (Lower Ground) **Date:** Tues 28th**Dario Barghini:** All-Sky Measurements of the Night Sky Brightness by the Italian PRISMA Fireball Network.**Reynier Peletier:** Monitoring the Night Sky using Fish-eye Lenses - The KID-Darker Sky Monitoring Network.**Matthieu Renaud:** Deploying dense ALAN monitoring networks for territorial actions: the cases of Réunion Island and La Brière region, France.

DISCUSSION

11:25 - 11:55

Tea & Coffee, Exhibitors, Posters

11:55 - 13:10

"Novel" Measurement Devices M**Chair:** Ray Butler**Venue:** Mulberry Suite (Lower Ground) **Date:** Tues 28th**Iván Kopaitic:** Light Pollution Source Detection - Validation of Airborne Methods for Quantification and Identification of Light Pollution Sources.**Constantinos Bouroussis:** Measuring ALAN in the 3D space using the Dronegoniophotometer.

DISCUSSION

13:10 - 14:10

Lunch Break - Riverview Room

Light Preferences L**Chair:** David Kretzer**Venue:** Annex Room **Date:** Tues 28th**Andreas Hänel:** Comparison of lighting habits in some larger cities.**Ellen Cierad:** Understanding public preferences for light and darkness in Aotearoa New Zealand.**Océane Marccone:** Understanding urban beaches users' preferences for light mitigation measures in Chile.

DISCUSSION

Safety H**Chair:** Nona-Schulte-Römer**Venue:** Annex Room **Date:** Tues 28th**Paul Marchant:** Does more light make us safer?**Emma Bousquet Borrut:** Assessing the impact of public lighting extinction on road safety using satellite observation.**Minu Agarwal:** Impact of non-uniform lighting on gaze behavior and pupil size: A gender specific study of pedestrians at night-time.

DISCUSSION

Tuesday

DAY 1 ● TUESDAY 28th October

14:10 - 15:25

Modelling 1 M**Chair:** Alex Mavrovic**Venue:** Mulberry Suite (Lower Ground) **Date:** Tues 28th**Martin Aube:** Illumina v3: Modeling sky brightness up to the third order of scattering.**Rolf Buhler:** Modelling light pollution reduction in France with Otus 3.0**Aurélien Mure:** Optimization of public lighting using multi-sensor satellite observation and ground data.

DISCUSSION

Technology T**Chair:** Jacqueline Degen**Venue:** Annex Room **Date:** Tues 28th**Andreas Jechow:** Technical design of an insect friendly road light – from theory to practice.**Sandra Regina Lang:** Flexible, low-cost laboratory setup with digital LEDs for assessing effects of multiple light regimes.**James Whitfield:** Mitigating Satellite Light Pollution with Vantablack Coatings: A Collaborative Approach to Protecting Astronomy.

DISCUSSION

15:25 - 15:55

Tea & Coffee, Exhibitors, Posters

15:55 - 17:10

Ecology B**Chair:** Ellen Cieraad**Venue:** Mulberry Suite (Lower Ground) **Date:** Tues 28th**Magdalena Czarnecka:** Impact of light spectrum on biota: a meta-analysis.**Ruben Evens:** Guided by skyglow: The Subtle Appeal of Artificial Skies.**Anat Barnea:** Life-long ALAN exposure affects avian brain plasticity in sex- and region-dependent patterns.

DISCUSSION

Awareness & Outreach S**Chair:** Sara Pritchard**Venue:** Annex Room **Date:** Tues 28th**Lauren Wisbrock:** Following Their Curiosity: Empowering Teens to Lead Light Pollution Research.**Waleska Valle:** CIELO: Chicago's Initiative for Environmental Justice and Light Pollution Outreach.**Nona Schulte-Römer:** Sensory governance: Regaining awareness for invisible lighting infrastructure.

DISCUSSION

18:00

WELCOME RECEPTION - Westport Woods Hotel Bar Area

Wednesday

DAY 2 ● WEDNESDAY 29th October

08:00 - 14:00

Registration Open: Mulberry Suite, Westport Woods Hotel, Westport, Co. Mayo

09:00 - 10:00

Morning Plenary Session: Mulberry Suite **Chair:** Chris Kyba **Guest Speaker:** Ulrike Brandi **Guest Speaker:** Elena Maggi

10:10 - 11:30

Night-Sky Brightness M**Chair:** Grainne Scanlon**Venue:** Mulberry Suite (Lower Ground) **Date:** Wed 29th**Giacomo Terreran:** Best view in the city: Exploration of an all-sky imaging dataset of the Chicago night sky.**Zoltán Kolláth:** Representing and interpreting digital camera-based sky quality measurements.**John Barentine:** Natural influences on night sky brightness and implications for site quality characterization.

DISCUSSION

Maritime Matters B**Chair:** Kellie Pendoley**Venue:** Annex Room **Date:** Wed 29th**Cesar San Miguel:** Navigating the dark: New international guidance to mitigate light pollution for migratory species.**Tim Smyth:** Introducing the Global Ocean Artificial Light at Night Network.**Olivia Rendon:** Perceptions and knowledge of coastal Artificial Light at Night.

DISCUSSION

11:30 - 12:00

Tea & Coffee, Exhibitors, Posters

12:00 - 13:20

Ecology - Freshwater B**Chair:** Kamiel Spoelstra**Venue:** Mulberry Suite (Lower Ground) **Date:** Wed 29th**Franz Hölker:** From Science to Action: Towards sustainable lighting near freshwater ecosystems.**Tessa Code:** Evaluating the effect of artificial light at night (ALAN) on predation risk in an urban lake.**Ashton Dickerson:** Lights, camera, action: Unravelling zooplankton diel vertical migration under light at night.

DISCUSSION

Lighting Design T**Chair:** Caroline Villbrandt**Venue:** Annex Room **Date:** Wed 29th**Julieta Cignacco:** Perceiving cultural heritage in the dark.**Chiara Carucci:** Lighting for Coexistence: A Collaborative Approach to Protecting Wildlife.**Annette Krop-Benesch:** Envirolight - Self-Responsible sustainability in Lighting Design.

DISCUSSION

13:20 - 14:20

Lunch Break - Riverview Room

Wednesday

DAY 2 ● WEDNESDAY 29th October

14:20 - 15:20

Poster Presentation Session

15:25 - 15:55

Tea & Coffee, Exhibitors, Posters

15:55 - 17:10

Ecology B

Chair: Ashton Dickerson

Venue: Mulberry Suite (Lower Ground) **Date:** Wed 29th

Alessandro Manfrin: Artificial light at night and invasive crayfish drive cross-ecosystem effects on riparian spiders.

Tim Smyth: Seeking Tranquility: Assessing Ecological Risk from Artificial Light and Noise Pollution.

Laura Payton: One-year in situ study of ALAN's impacts on a worldwide coastal areas species, the oyster *Crassostrea gigas*, and the European native oyster *Ostrea edulis*.

DISCUSSION

Local & Community Engagement S

Chair: Waleska Valle

Venue: Annex Room **Date:** Wed 29th

Laura Dixon: The development of Mayo's Light Pollution Policy

Elizabeth Ryder: The value of preserving the darkness through Agri-Climate Rural Environmental Scheme - Rural Restorative Lighting.

Mike Hawtin: North York Moors National Park International Dark Sky Reserve - Delivering dark skies friendly lighting projects at scale through community engagement.

DISCUSSION

17:30 - 23:00

FIELD TRIP TO MAYO DARK SKY PARK / NEWPORT (Places limited - Book @ Registration | Alternative options available)

Thursday

DAY 3 ● THURSDAY 30th October

08:00 - 14:00

Registration Open: Mulberry Suite, Westport Woods Hotel, Westport, Co. Mayo

09:00 - 10:30

Morning Plenary Session: Mulberry Suite **Co-Chairs:** Sebastian Fingerhuth with Annette Krop-Benesch
Guest Speaker: Robert Lucas **Guest Speaker:** Nick Dunn **Guest Speaker:** Yana Yakushina

10:30 - 11:00

Tea & Coffee, Networking, Posters

11:00 - 12:40

Ecology B**Chair:** Ruben Evans**Venue:** Mulberry Suite (Lower Ground) **Date:** Thur 30th**David Smith:** The Impacts of light pollution on invertebrates; a comprehensive review informing advocacy and social change.**Mona Storms:** Female moths call in vain: Streetlights diminish the promise of mating.**Gabriel Charvalakis:** Spatiotemporal dynamics of insect phototaxis under artificial light at night.**Carmen Ludreschl:** BALIN – Insect conservation at railway stations through more insect-friendly lighting.

DISCUSSION

Regulation G**Chair:** Benedikt Huggins**Venue:** Annex Room Thursday 30th **Date:** Thur 30th**Daniela González Espinoza:** Challenges in Implementing a National Light Pollution Regulation in Chile.**Gabriela López Contreras:** Is Chile turning off its stars? The national challenges of artificial light for astronomy.**Stijn Vanderheiden:** Focus on Local Governments and Their Needs for Better Lighting Policies.**Fleur de Nil:** The Astronomical Darkness Necessity Map – a Tool for Lighting Projects.

DISCUSSION

12:40 - 13:40

Lunch Break - Lakeview Room & Bar

13:40 - 15:00

Ecology B**Chair:** Manuel Dietenberger**Venue:** Mulberry Suite (Lower Ground) **Date:** Thur 30th**Sander Buddendorf:** Dimming streetlights reduces insects' attraction but leaves bats in the dark.**Hannah Broeckx:** Light Pollution Alters Arthropod Behaviours.**Vincent Grognez:** Artificial Light at Night (ALAN) advances reproductive phenology and disrupt circadian rhythm of wild flowers.

DISCUSSION

Legislation G**Chair:** Yana Yakushina**Venue:** Annex Room **Date:** Thur 30th**Swati Mawandiya:** Regulation of Light Pollution in Indian Environmental Law: A Comparative Study.**David Kretzer:** The updated lighting standard EN 12464-2: Adaptations concerning light pollution.**Benedikt Huggins:** Shifting the Focus: Effective Legislative Strategies for Reducing Light Pollution.

DISCUSSION

15:00 - 15:30

Tea & Coffee, Exhibitors, Posters

The organisers reserve the right to change the programme.

Thursday

DAY 3 ● THURSDAY 30th October

15:30 - 17:10

Satellite Measurements M**Chair:** Andreas Jechow**Venue:** Mulberry Suite (Lower Ground) **Date:** Thur 30th**Brian Espey:** Fine Scale Satellite Measurements of Time-Variable ALAN**Christopher Kyba:** Towards a European nighttime light observing satellite.**Alejandro Sánchez de Miguel:** European Union Atlas of the Real Artificial Light at Night (RALAN) with SDGSAT-1 Spectral classification and cloud detection.**Ken Walczak:** In a Personal Light: Investigating the Distribution of Residential Lighting Using Demographic and Environmental Variables.

DISCUSSION

Health H**Chair:** Robert Lucas**Venue:** Annex Room **Date:** Thur 30th**Michael Zeman:** ALAN increases the cardio-metabolic risk in spontaneously hypertensive rats and after high fructose intake.**Monika Okuliarova:** Light at night interferes with energy balance during acute inflammatory response.**Antonello Durante:** Current understanding of blue light impact on human health and biodiversity.**Anna Crowley:** Evaluating the efficacy of wearable light loggers for monitoring the effects of blue light exposure on human health in Ireland.DISCUSSION : followed by “**Simple Light Measurement Methods**”- A workshop with Andreas Hänel.

19:30

CONFERENCE BANQUET, Mulberry Suite**Guest Speakers:** Kerem Asfuroglu & Mayo County Council Chief Executive Kevin Kelly**THEMES**

- B **Biology & Ecology**
- G **Governance & Regulations**
- H **Health & Wellbeing**
- M **Measurements & Modeling**
- S **Social Sciences & Humanities**
- T **Technology & Design**
- L **Light and Dark in Society**

Special Events

Art Installation

28-30th October - Arts Installation – Dusking experience (evenings)

Workshops

29th October - Points of Alignment workshop

30th October - Dark Sky Measurement workshop

31st October - Networking Event ‘Activating Europe’s Dark Skies: From Advocacy to Action’.

Field Trips

29th October - Points of Alignment workshop field trip to Newport (Local Authority / Institution of Lighting Professionals (ILP))

29th October - Trip to Mayo Dark Sky Park and Newport Town Lighting Site visit (delegates)

31st October - Field trip to Connemara GeoPark

Social Events

28th October - Welcome Reception

30th October - Conference Dinner

Further information



Further information on all Abstracts (both Talks and Poster Presenters) taking part in ALAN2025 can be found here;

https://artificiallightatnight.org/wp-content/uploads/2025/10/ALAN2025_Abstract-Booklet.pdf



For Live Programming information and Delegate updates, please go to the conference web app;

<https://mayo-dark-skies.lineupr.com/alan-2025>

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