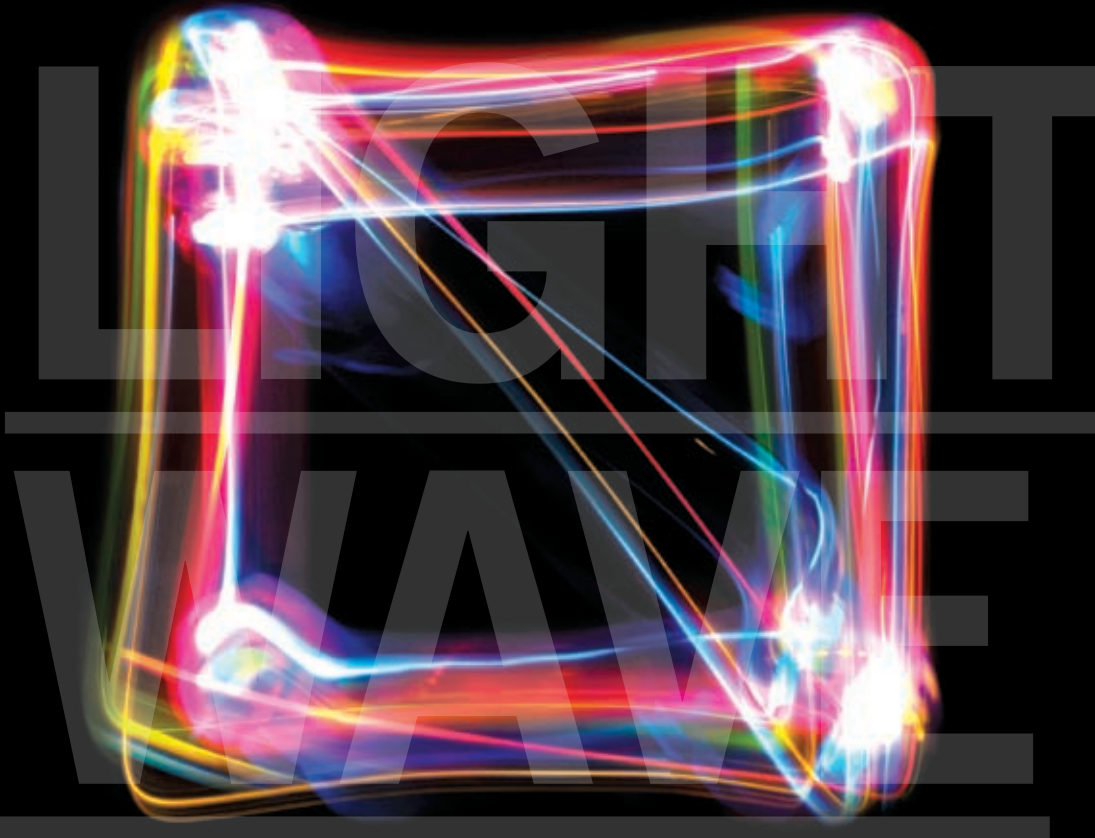


SCIENCE GALLERY



23:01:09–20:02:09 **DEFY THE DARKNESS**

● ■ SCIENCE GALLERY

ABOUT Since its opening on February 1 2008, Science Gallery has been an unprecedented success. Over 120,000 people have visited and got involved with the Science Gallery.

WHY? Science impacts all of our daily lives yet can still appear mysterious and remote. Why should we be kept in the dark about today's burning scientific issues?

WHAT? The Science Gallery is a world first. A new type of venue where opinions on white-hot scientific issues will collide and you can have your say. **A place where ideas meet.**

HOW? Through exhibitions, public experiments, challenges, festivals, debates and workshops. Science Gallery is about opening up science and technology to passionate argument.

BECOME PART OF THE SCIENCE GALLERY COMMUNITY

Membership of the Science Gallery is free and comes with great benefits including:

- **Reduced ticket prices**
- **Free Wi-Fi in the Science Gallery**
- **Invitations to special member-only events**
- **Your own profile on the Science Gallery website**
- **Advance news about upcoming Science Gallery events & exhibitions**
- **10% discount in the Science Gallery café and shop**

To sign-up for free membership now visit www.sciencegallery.com

DEFY THE DARKNESS...

Who says we are living in dark times? LIGHTWAVE offers you an opportunity to defy the darkness at the Science Gallery in a festival to dazzle your eyes and electrify your mind.

Now in its second year LIGHTWAVE gives you a unique chance to experiment with illumination in the company of a bright and buzzing community of scientists, engineers, philosophers and techno-artists who are passionate about the visible spectrum.

In keeping with the philosophy of Science Gallery, LIGHTWAVE is generated through an open call for ideas. From ten thousand peacock feathers in foaming acid to electric fish and a new kind of fuel cell to provide off-grid light in Africa, we have a full range of delights in store for you at the LIGHTWAVE festival, exhibition, talks and workshops.

With your help we hope to grow LIGHTWAVE as an annual citywide festival for Dublin celebrating innovation and illumination, and I would like to give special thanks to the sponsors and partners who are helping us in our quest for urban enlightenment, especially Discover Science and Engineering, Ulster Bank, the Wellcome Trust and the Irish Times as well as Trinity College Dublin. I would also like to thank the members of our Science Circle: Dell, Google, Wyeth, ICON and PACCAR, and the Department of Arts, Sports and Tourism and DART/Irish Rail. Thank you also to Science Gallery café and the Odessa Club.

I would also like to thank my inspiring co-curators, Richard Kirk, Denis Weaire and Marie Redmond, who have helped select this year's participants, our energetic producer Karen Walshe who has done a fantastic job pulling it all together and the amazing Science Gallery team who have worked tirelessly to bring LIGHTWAVE to life, with a special word of thanks to Beth Gormley. Keep an eye on our website, www.sciencegallery.com for updates, help us defy the darkness and enjoy the show!

Michael John Gorman
Director
Science Gallery

■ ■ LIGHTWAVE FESTIVAL SCHEDULE 23:01:09–31:01:09

	FRI 23:01	SAT 24:01	SUN 25:01	MON 26:01	TUE 27:01	WED 28:01	THU 29:01	FRI 30:01	SAT 31:01					
16.00-21.00	LIGHTWAVE EXHIBITION													
15.00-16.00				LIGHTLAB: FOR YOUNG MAKERS <i>[see p.10]</i>	LIGHTLAB: FOR YOUNG MAKERS <i>[see p.10]</i>	LIGHTLAB: FOR YOUNG MAKERS <i>[see p.10]</i>	LIGHTLAB: FOR YOUNG MAKERS <i>[see p.10]</i>	LIGHTLAB: FOR YOUNG MAKERS <i>[see p.10]</i>						
16.00-16.30		LIGHTLAB: DRAWING WITH LASERS <i>[see p.10]</i>							LIGHTLAB: <i>[see p.10]</i> LIGHT CREATURES SHEDDING LIGHT ON ARDUINOS					
16.30-17.00	LIGHTCHAT <i>[see p.4]</i>	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT LIGHTTALK: EINSTEIN'S LIGHT CLOCK <i>[p.7]</i>					
17.00-17.30	LIGHTCHAT	LIGHTCHAT SPOTLIGHT: AVIO! <i>[p.9]</i>	LIGHTCHAT SPOTLIGHT: AVIO! <i>[p.9]</i>	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT					
17.30-18.00	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT					
18.00-18.30	LIGHTCHAT	LIGHTCHAT	LIGHTTALK: LIGHT HARVESTING <i>[p.6]</i>	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTCHAT	LIGHTTALK: GROWING LIGHT & OTHER CONVERSATIONS <i>[p.7]</i>	LIGHTCHAT					
18.30-19.00														
19.00-20.00	SPOTLIGHT: 10,000 PEACOCK FEATHERS IN FOAMING ACID <i>[p.8]</i>	LIGHTTALK: CREATIVITY WITH LASER <i>[p.6]</i>	LIGHTTALK: DANGER! HIGH VOLTAGE <i>[p.6]</i>	LIGHTTALK: ALL THINGS BRIGHT AND BEAUTIFUL <i>[p.6]</i>		LIGHTTALK: BETTER THAN REAL <i>[p.6]</i>	LIGHTTALK: LET THERE BE LIGHT <i>[p.7]</i>	LIGHTLAB: GALILEO'S TELESCOPE <i>[p.10]</i>	LIGHTTALK: LIGHTING AFRICA <i>[p.7]</i>	LIGHTTALK: TURN IT OFF – MEET THE MAKERS <i>[p.7]</i>				
20.00-21.00	LIGHTCLUB: DATA <i>[p.4]</i>	LIGHTCLUB: SOLDERING PARTY <i>[p.4]</i>	LIGHTTALK: LIGHT, SOUND, ACTION <i>[p.6]</i>	LIGHTFILMS: <i>[p.9]</i> All Films start at 20.00 SHOTS IN THE DARK <i>[p.5]</i> See Website	LIGHTCLUB: SHOW & SELL <i>[p.5]</i>	LIGHTFILMS: SHOTS IN THE DARK <i>[p.5]</i> See Website	LIGHTCLUB: ALCHEMIST CAFÉ <i>[p.5]</i>	LIGHTFILMS: SHOTS IN THE DARK <i>[p.5]</i> See Website	LIGHTCLUB: PRISM BOOK CLUB <i>[p.5]</i>	LIGHTFILMS: SHOTS IN THE DARK <i>[p.5]</i> See Website	LIGHTCLUB: SEED DATING <i>[p.5]</i>	LIGHTFILMS: SHOTS IN THE DARK <i>[p.5]</i> See Website	LIGHTCLUB: BRIGHT IDEAS LOUNGE <i>[p.5]</i>	SPOTLIGHT: WORLD PREMIERE TURN IT OFF <i>[p.9]</i>
21.00-22.00														
22.00-23.00	LIGHTLOUNGE DJ SET HOSTED BY DATA	LIGHTLOUNGE DJ	DJ	LIGHTLOUNGE	LIGHTLOUNGE	LIGHTLOUNGE	LIGHTLOUNGE	LIGHTLOUNGE DJ	LIGHTLOUNGE DJ					



LIGHTCHAT

All Artists

DATE: 23:01–31:01:09
TIME: 16.30–18.30
LOCATION: All galleries
COST: Free (*no booking required*)

Here's your chance to chat with the artists and scientists behind the LIGHTWAVE installations and find out what powers their work and their imagination.

LIGHTLOUNGE

DATE: 23:01–31:01:09 (except 25:01:09)
TIME: 21.00–23.00
LOCATION: Science Gallery Café
COST: Free (*no booking required*)

Glow mad and join us in the late night *LightLounge*. Grab a cocktail and hear Dublin's finest spin their favorites or chill out to some ambient beats.

LIGHTCLUB

Here's your invitation to get past the velvet rope and hang out, discuss, discover and play in LIGHTWAVE'S version of bohemian paradise.

DATA

Dublin Art and Technology Association

DATE: 23:01:09
TIME: 20.00
LOCATION: Science Gallery Café
COST: Free

Dublin Art and Technology Association (DATA) is an informal forum for artists, technologists, musicians and academics to promote, explore, discuss and exhibit art and technology. Think of it as an after hours club for your dangerous ideas. Stick around for the opening of *LightLounge* LIGHTWAVE'S late club, as DATA's finest spin their favorites. www.data.ie

SOLDERING PARTY

Hosted by Todd Polenberg & Jason Cipriani

DATE: 24:01:09
TIME: 20.00
LOCATION: Science Gallery Café
COST: Material costs €15 (*pre-booking essential*)

We'll make anything a party at the Gallery! Join New York's finest in a range of workshop sessions. Learn how to solder and build your own 28-channel LED sequencer with open-source code (no previous experience necessary) or join the master class to discuss strategies for building large-scale LED installations.

SHOW AND SELL

DATE: 26:01:09
TIME: 20.00
LOCATION: Science Gallery Café
COST: Free (*no booking required*)

Get your gear out! Our favourite techno-artists, playful scientists, renegade engineers and inventors converge at the Gallery to show off the best in light gadgetry.

NEW WAYS TO CATCH SOME RAYS

Hosted by Alchemist Café

DATE: 27:01:09
TIME: 20.00
LOCATION: Science Gallery Café
COST: Free

Dr Dominic Zerulla, Project Principal Investigator in the SFI Strategic Research Cluster on Solar Energy Conversion and Senior Lecturer in UCD School of Physics, asks the question; "Can advances in solar energy conversion materials and devices really provide a low cost energy source?"

PRISM BOOK CLUB

Hosted by Aoife McLysaght

DATE: 28:01:09
TIME: 20.00
LOCATION: Science Gallery Café
COST: €5 (*pre-booking essential*)

If you thought book clubs were nerdy, we've done one better and created a science book club. Join us for the launch of our new bookclub as lecturer in genetics at TCD, Aoife McLysaght, leads the discussion on *The Frog Who Croaked Blue* by Jamie Ward, which delves into synaesthesia and the mixing of senses. Joining her is Dr. Kevin Mitchell, Senior Lecturer in Developmental Neurobiology at TCD who is searching for the synaesthetic gene. Geek will always be chic at the Science Gallery.

SEED DATING

Hosted by Aoibhinn ni Shuilleabhain

DATE: 29:01:09
TIME: 20.00
LOCATION: Science Gallery Café
COST: €5 (*by application only*)

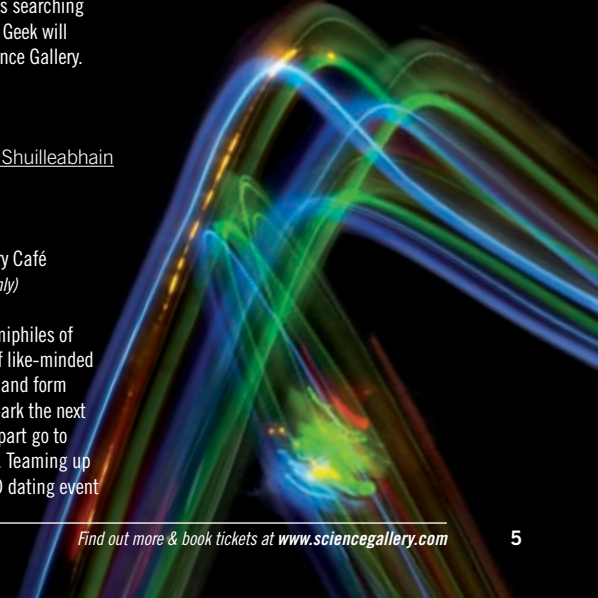
Science Gallery invites lumiphiles of all disciplines in search of like-minded energies to meet, discuss and form creative connections to spark the next big idea. To apply to take part go to www.sciencegallery.com. Teaming up with TrinityHaus, the SEED dating event

will involve a range of people from art, science, design and engineering with bright ideas.

BRIGHT IDEAS LOUNGE

DATE: 30:01:09
TIME: 20.00
LOCATION: Science Gallery Café
COST: Free

Following *Lighting Africa With Off-Grid Energy* (see page 7) the discussion continues about the future of sustainable energy in our *Bright Ideas Lounge*. Be sure to attend the world launch at 19:00 on 30:01:09.





LIGHTWAVE FESTIVAL: LIGHTTALKS

Listen to leading designers, artists and scientists discuss hot topics in lighting innovation and technology.

LIGHT HARVESTING

Dmitry Gelfand & Evelina Domnitch

DATE: 24:01:09

TIME: 18.00

LOCATION: Science Gallery Café

COST: Free

Dmitry Gelfand and Evelina Domnitch discuss their work on creating sensory immersion environments that merge physics, chemistry and computer science with uncanny philosophical practices.

CREATIVITY WITH LASERS: LIGHT AMPLIFICATION BY STIMULATION EMISSION OF RADIATION

Bálint Bolygó

DATE: 24:01:09

TIME: 19.00

LOCATION: Studio 2

COST: Free

Join an open discussion with LIGHTWAVE LASER enthusiast Bálint Bolygó and others to find out what you always wanted to know about lasers but were too afraid to ask.

LIGHTS, SOUND, ACTION

Ursula Lavrencic, Auke Touwslager, Dominic Harris & Chris O'Shea

DATE: 24:01:09

TIME: 20.00

LOCATION: Studio 2

COST: Free

Lightwave artists Ursula Lavrencic and Auke Touwslager (*Cell Phone Disco*), Dominic Harris and Chris O'Shea (*Beacon*) and others discuss their interactive works combining pop culture and the latest technologies in light manipulation.

DANGER! HIGH VOLTAGE

Kerry Tunstall & Wade Enright

DATE: 25:01:09

TIME: 19.00

LOCATION: Studio 2

COST: Free

Listen to LIGHTWAVE artists Kerry Tunstall and Wade Enright as they discuss the variations of use and control of high voltage in their projects.

ALL THINGS BRIGHT AND BEAUTIFUL: THE SCIENCE OF BIOLOGICAL COLOUR

Pete Vukusic

DATE: 26:01:09

TIME: 19.00

LOCATION: PACCAR Theatre

COST: €5 (*pre-booking essential*)

Vukusic is an Associate Professor at the University of Exeter and leads research into natural photonics, exploring phenomena such as the iridescence of butterflies and moths. Join Pete to delve into the physics of colour and light. In association with the Institute of Physics, Ireland.

BETTER THAN REAL

Beau Lotto

DATE: 28:01:09

TIME: 19.00

LOCATION: PACCAR Theatre

COST: €5 (*pre-booking essential*)

Stemming from his research into sensory-substitution and sensory-augmentation, hear Beau Lotto (Lottolab Studios) discuss his research that focuses on tools for the blind to 'see' and 'feel' with their ears, and the basic principles by which the perceptual mind creates sensory narratives. Lottolab Studio is using its synaesthetic software

(coded by Ilias Bergstrom of Lottolab Studio) to enable users to create and control an orchestra with colour.

GROWING LIGHT AND OTHER CONVERSATIONS

Grafting Parlour

DATE: 29:01:09

TIME: 18.00

LOCATION: Science Gallery Café

COST: Free

Connecting three distant locations to run experiments featuring photo-responsive microorganisms, this discussion and demonstration hosted by the Grafting Parlour gang from MIT, Northern Finland and Ireland, allows you exclusive access to remote laboratories.

LET THERE BE LIGHT

Alex Montwill & Ann Breslin

DATE: 29:01:09

TIME: 19.00

LOCATION: PACCAR Theatre

COST: €5

Let There Be Light explores the key role played by light and electromagnetic radiation in the universe. Join UCD Professor Emeritus Alex Montwill and Senior Astrophysics Lecturer Ann Breslin as they introduce us to philosophical

hypotheses, then guide us through the practical consequences such as the rules of geometrical optics and even Einstein's well-known but mysterious relationship, $E = mc^2$.

LIGHTING AFRICA WITH OFF-GRID ENERGY

In partnership with Harvard University/Lébonê Solutions, Professor David Edwards, Hugo Van Vuuren, Alexander Fabry, Aviva Presser, Ralph Borland & Richard Kirk

DATE: 30:01:09

TIME: 19.00

LOCATION: PACCAR Theatre

COST: €5 (*pre-booking essential*)

Join the world launch event of the remarkable technology of microbial fuel cells aimed at providing off-grid lighting in the developing world. At this LIGHTWAVE exclusive meet the people behind this inspiring project. *See more on page 12.*

EINSTEIN'S LIGHT CLOCK

Professor J.R. Gott

DATE: 31:01:09

TIME: 16.30

LOCATION: PACCAR Theatre

COST: €5 (*pre-booking essential*)

In 1993 renowned astrophysicist and Princeton University Professor J. Richard Gott discovered an exact solution to Einstein's equations of general relativity for two moving cosmic strings that allowed time travel to the past. Professor Gott discusses his book *Time Travel in Einstein's Universe*, which further explores the genius of Einstein and how his thought experiment involving a light clock changed our conception of time and showed us that time travel to the future is possible.

'TURN IT OFF': MEET THE MAKERS

John Callaghan & Jonny McCauley

DATE: 31:01:09

TIME: 19.00

LOCATION: PACCAR Theatre

COST: Free (*pre-booking essential*)

The creators of the *Turn It Off* short film give us all the dirt on the creation process, including their name and shame campaign to make energy wasting Dubliners flick the switch.





LIGHTWAVE FESTIVAL: SPOTLIGHT

Events and performances that will make you glow.

10,000 PEACOCK FEATHERS IN FOAMING ACID

Evelina Domnitch & Dmitry Gelfand

DATE: 23:01:09

TIME: 19:00

LOCATION: PACCAR Theatre

COST: Free (*pre-booking essential*)

Back by popular demand Evelina Domnitch and Dmitry Gelfand return to LIGHTWAVE with a brand new and exciting performance. Renowned for creating immersive environments, Evelina and Dmitry create a primordial experience described as a vacuum or semi-vacuum encased within a gravity and temperature sensitive elastic skin – the scenario of an early universe, a soap bubble, and later, that of a biological membrane. Intrigued? You should be!

SPARKS

Tim Redfern, Eoghan Kidney
& guest artists

DATE: 23:01:09 – 31:01:09

TIME: DAILY 16:00 – 21:00

COST: Free

Using a lightpen with realtime video effects *Sparks* will transform the Science Gallery building into a dynamic sketch pad.

EYELIGHT MUSIC

SMARTlab, Futurelab, SpecialEffect,
CRC & Trinity College Dublin

DATE: 07:02:09

TIME: 19:00

LOCATION: PACCAR Theatre

COST: Free (*pre-booking essential*)

Relighting the spirit of the LIGHTWAVE festival EYELIGHT is a groundbreaking musical performance.

Musicians Colm O'Snodaigh and Martin Brunsden of Kila, Juliet Turner, Robbie Perry and Dee Martin (+ 1 more artist tbc) will perform live with James Brosnan and Katy Gilligan (creative collaborators with severely limited physical movement due to Cerebral Palsy), who will take an equal part in this big music and dance jam by using their eyes to operate a musical system using four infrared red light sources to enable the computer to interpret eye movement as an interface to musical engagement.

Lizbeth Goodman (SMARTlab/ Futurelab Director) and Bobby Byrne (Counterbalance Dance) will perform with James and Katy to show the possibilities for movement vocabularies controlled by eyes. The 30 minute show will include two original songs written with and for James and Katy, both of which will feature on the forthcoming album, *Soshin*, recorded by members of Kila (to be released in the Spring of 2009). The show will begin with a brief lecture/introduction by Professor Goodman and Dr Mick Donegan, co-Principal Investigators of the InterFACES project which aims to put a human face on technology for sustainable creative futures.

AVIO!

Andrew Bucksburg

DATE: 24:01:09 & 25:01:09

TIME: 17:00

LOCATION: Gallery 3

COST: Free

Immerse yourself in Andrew Bucksburg's performance with his AVIO spheres that not only communicate with the audience, but with each other. Then it's your chance to create your own light and sonic symphony with the help of the spheres.

WORLD PREMIERE: 'TURN IT OFF' SHORT FILM

John Callaghan & Jonny McCauley

DATE: 31:01:09

TIME: 20:00

LOCATION: PACCAR Theatre

COST: €5 (*pre-booking essential*)

Be the first to see this short film that follows the adventures of a number of mischievous light creatures called "Brites", who only come out when the streets are empty and the lights are off. Unhappy with the amount of energy wasted in the city, they set out to make themselves seen and heard over the course of one evening in Dublin. Leaving light graffiti behind them, they highlight the amount of energy being wasted in the city and urge change.

LIGHTFILM: SHOTS IN THE DARK

DATE: 25:01:09 – 29:01:09

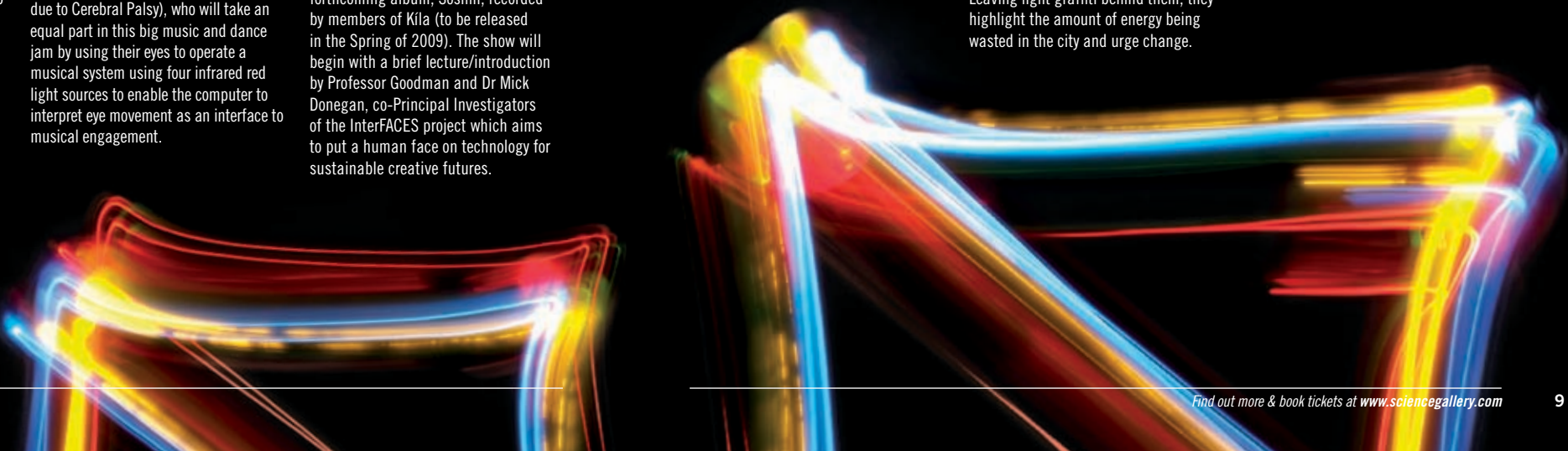
TIME: 20:00

LOCATION: PACCAR Theatre

COST: Varies, Membership of Science Gallery Film Club required

LIGHTWAVE'S film club will bring you intriguing and engaging movies on the theme of light and darkness.

Details of membership of Science Gallery Film Club and full schedule available on www.sciencegallery.com/film



LIGHTWAVE FESTIVAL: LIGHTLABS

Experiment with light and release your inner maker in our LIGHTLABS to get some hands on experience.

MAKE & TAKE

Science Gallery Ambassadors

DATE: 23:01:09–31:01:09

TIME: 16.00–20.00

LOCATION: Gallery 3, Science Gallery

COST: €3.00

Join our Ambassadors and take 20 minutes to make your very own 'light' project. There will be a whole series of projects using all manner of electronic equipment from pager motors to LED and LDR to choose from on our Make & Take menu.

DRAWING WITH LASERS

Bálint Bolygó

DATE: 24:01:09

TIME: 16.00

LOCATION: Studio 2, Science Gallery

COST: €5.00 (pre-booking essential)

What kind of a drawing does a simple laser, a small mirror and a vibrating motor produce? Come along to this workshop and make your own laser drawing machine.

LIGHT LABS FOR YOUNG MAKERS

Science Gallery Ambassadors

DATE: 26:01:09–30:01:09

TIME: 15.00

LOCATION: Studio 2, Science Gallery

COST: Free (booking is required)

Everyday Science Gallery Ambassadors will be running a series of workshops exploring light for young makers from secondary schools. Book your class in to take part by contacting lynn.scarff@sciencegallery.com

GALILEO'S TELESCOPE

Science Gallery Ambassadors

DATE: 29:01:09

TIME: 19.00

LOCATION: Studio 2, Science Gallery

COST: €5.00 (pre-booking essential)

See how the moon looked to Galileo and build your own working replica of Galileo's telescope at this workshop.

SHEDDING LIGHT ON ARDUINOS

Tom Scarff

DATE: 31:01:09

TIME: 16.00

LOCATION: Studio 2, Science Gallery

COST: €5.00 (pre-booking essential)

In this workshop you'll get to make a range of projects on light and sound using the Arduino microcontroller. Suitable for beginners and advanced this workshop will have something for everyone.

LIGHT CREATURES

John Callaghan & Jonny McCauley

DATE: 31:01:09

TIME: 16.00

LOCATION: Science Gallery Café

COST: €5.00 (pre-booking essential)

Join the 'Turn it off' group and build your own light creature out of EL wire which will feature in a short video which will be shot at the end of the workshop using stop motion and light writing techniques.

LIGHTWAVE FESTIVAL: STREETLIGHTS

GUERRILLA LIGHTWAVE 2009

DATE: 22:01:09

LOCATION: Ulster Bank Head Office (*Georges Quay*), Front Arch of Trinity College Dublin (*College Green*), & St Mark's Church (*opposite Science Gallery*)

Architectural design practice BDP brings Guerrilla Lighting to LIGHTWAVE, using science and art to challenge perceptions of how light mediates our experience of the urban environment.

A large group of people create temporary light installations within the urban architecture in highly recognisable, prominent locations using LED luminaires, high-powered torches, coloured filters and shaped cut-outs (gobos).

Firstly, guerrillas will light the Ulster Bank Head Office (17.30), raising awareness of environmentally and

economically sustainable lighting design. The group will move on to the Front Arch of Trinity College Dublin (18.15) to demonstrate a sensitive, contextual approach to architectural lighting design. Finally, St Mark's Church (20.00) will provide the backdrop for an exploration of how light defines the relationship between subject and object.

GUERRILLA LIGHTWAVE REDUX

DATE: 28:01:09

LOCATION: Dublin City Centre

Guerrilla LIGHTWAVE Redux is a more intimate, low-key, spontaneous version of Guerrilla Lighting, with a small group of guerrillas taking to the streets of Dublin to light some of the city's forgotten corners.

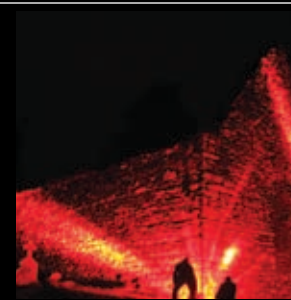
FLASH MOB LIGHTING

DATE: 23:01:09

LOCATION: Temple Bar Square, Grand Canal Square, Docklands, Smithfield Plaza & St Patrick's Cathedral.

TIME: Details to be announced on the day – participants need to register at www.guerrillalighting.net and Guerrilla update.

Flash Lighting is a spontaneous, playful engagement with light as an expressive medium. Notified of a time and a place by email and text-message, flash lighters will create spontaneous temporary light installations using just their imagination, their bodies and their own torches at four sites across the city. People are advised to bring their lighting instruments (flash light torches, glow sticks, led lights, mobile phones...) in to work with them that day and check with website for the gathering point and time.





LÉBONÉ PROJECT: LIGHTING AFRICA WITH OFF-GRID ENERGY

In partnership with Harvard University/Léboné Solutions, Professor David Edwards, Hugo Van Vuuren, Alexander Fabry, Aviva Presse, Ralph Borland & Richard Kirk

DATE: 30:01:09

TIME: 19.00

LOCATION: PACCAR Theatre

COST: €5.00 (pre-booking essential)

Followed by discussion in the **Bright Ideas Lounge** (see page 5)

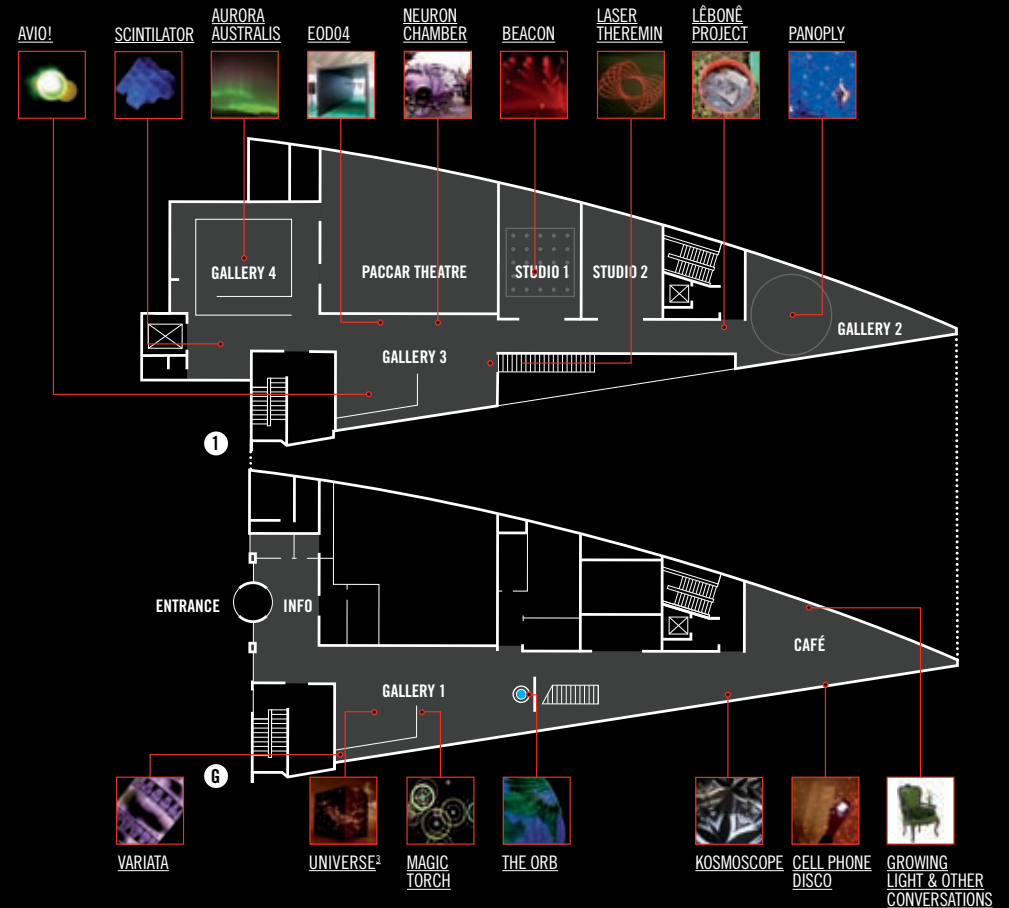
How can new lighting solutions allow off-grid domestic lighting in the developing world?

Could a light source be powered by devices owned, produced and understood locally, enabling “light farmers” to “grow” their own energy from soil?

A team of Harvard researchers led by Hugo Van Vuuren worked for three weeks in northern Tanzania to conduct research on a cutting edge microbial fuel cell technology that can produce electricity from soil or rotting fruit. They hope that this technology will bring safe and environmentally friendly lighting to a continent where half a billion people live without access to electricity.

Join the discussion around lighting and energy in the developing world as Hugo Van Vuuren, Alexander Fabry, Aviva Presse and the Léboné Solutions group from Harvard discuss and demonstrate this remarkable technology. Other speakers include Professor David Edwards, founder of *Le Laboratoire* and entrepreneur Richard Kirk. This project was developed by Harvard’s Idea Translation Lab, with funding from the World Bank.

The LIGHTWAVE exhibition continues until 20:02:09 with a wide range of interactive light installations from all over the world. Open Tuesday-Sunday 16:00–21:00 the LIGHTWAVE exhibition is free of charge.

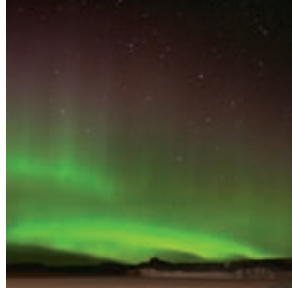




AVIO!
Andrew Bucksbarg, USA

Will you join the light jam?

AVIO! (Audio Visual Interact Object!) Pick up one of the mobispheres and watch and listen as the light and sound change in your hands. Join the jam session and improvise and create a new light and sound show in this interactive piece.



LIGHTBOX AURORA AUSTRALIS
Karen Curley & Antony Nevin, New Zealand

Ready to take a trip to the other side of the world?

Step into a camera obscura and gaze at the Aurora Australis, transmitted via the Internet from Scott Base in Antarctica. Through this interface you can connect in real time to changing Aurora conditions in the Antarctic.



UNIVERSE³
Oisín Byrne and J Richard Gott, Ireland & USA

What does the universe cubed look like?

Universe³ explores the boundless and expanding universe where light streams through a pierced map of the visible sky allowing the viewer to explore the infinite in a finite shape.



GROWING LIGHT AND OTHER CONVERSATIONS
The Grafting Parlour: Kelly Andres, Nurit Bar-Shai, Lucy Hg. of *The League of Imaginary Scientists,* Saoirse Higgins, Antti Tenetz, Ireland, Finland & USA

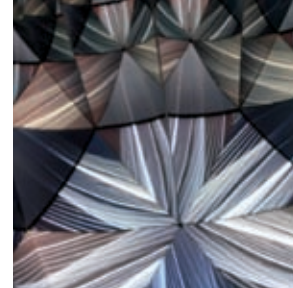
What lights up your cells?

Growing Light and Other Conversations allows you to peer into the lives of photo-responsive microorganisms based in remote laboratories in MIT, USA and the Arctic Research Centre, Finland. This web-portal into the laboratory is a microscope into living science.

Collaborating Researchers: Dr. Natalie Kuldell and the synthetic biology laboratory at MIT, with students Benjamin Moncivaiz and Katie Loh; Finnish biologist Dr. Panu Oulasvirta, Ireland, Finland & USA.

Project partnered with *Avermedia*

AVERMedia

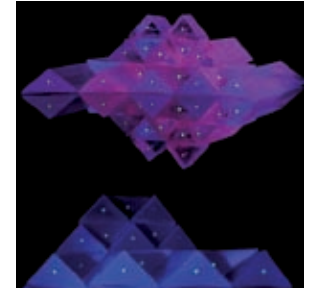


KOSMOSCOPE
Tim Redfern, Ireland

Want to see the earth move?

Kosmoscope acts as a seismic observatory, creating a spectacular audiovisual translation of the sound of the earth's movements.

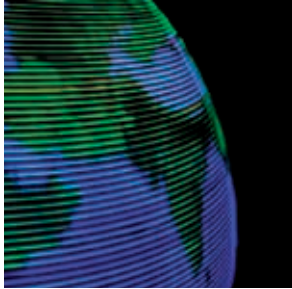
Kosmoscope takes the form of a 'box kaleidoscope', large enough to allow small groups of people to enter the installation and be immersed in the infinite illusory space it creates. Once inside, viewers can watch live tectonic recordings, relayed by the Global Seismographic Network, a coordinated network of seismographic instruments used to monitor earthquakes.



SCINTILLATOR
Lori Napoleon, USA

What makes physics scintillating?

Scintillator is an interactive sculpture made from fluorescent scintillator bars and wavelength shifting optical fibres. Your interaction will make the sculpture shift colour. The sculpture's composition is inspired by tetrahedral forms, the Platonic solids and Kepler's diagrams of planetary systems, investigating the underlying structures of nature. *Scintillator* brings you materials that are frequently used in many modern physics experiments to detect elusive subatomic particles and high-energy electromagnetic radiation at a very high precision.

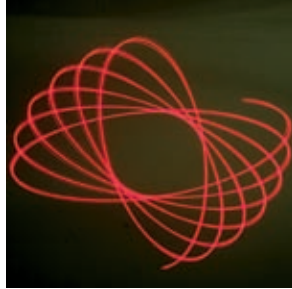


THE ORB

James Nick Sears, USA

Where in the world are you?

The Orb raises an awareness of our world and our place within it—physically and conceptually. *The Orb* provides an experience of images of spherical objects in true 3D, allowing viewers to experience information and phenomena such as population density or the breakup of Pangea with unprecedented perspective.

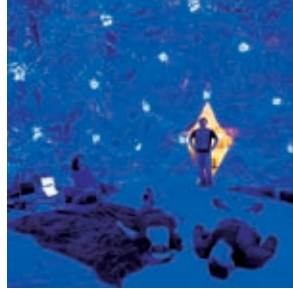


LASER THEREMIN

Bálint Bolygó, UK

Can you create a light and soundscape?

This project will transform your perception of light and sound, with the clash of technology from a simple laser scanner and what happens when it responds to the movements of the viewer. This interactive laser projector creates a magical light and soundscape, like the musical theremin.

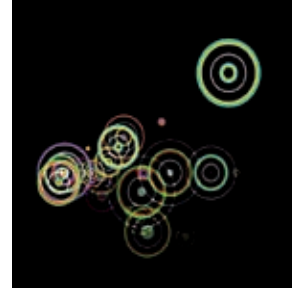


THE PANOPLY

Todd Polenberg & Jason Cipriani, USA

What is revealed under the panoply?

Immerse yourself in the mirrored and light filled Panoply – a 20' 3-frequency geodesic dome with 616 individually controlled full-color LED pixels arranged in circles at its vertices. *The Panoply* is an interactive installation where its patterns are controlled by a hacked Wii remote, allowing participants to control the patterns of light shimmering throughout.



THE MAGIC TORCH

Alberto Garcia Saenz & Julio Obelleiro, Spain

What will the magic torch reveal?

When you point the magic torch at the screen, you'll see hundreds of small stars, planets, asteroids and unusual shapes follow its beam of light. The viewers are able to see how, as they control the flashlight, these elements are driven by the movements of their hands, enjoying it as a peculiar remote control. The pleasure of playing with this light that hides something magical brings a fantasy world alive.

Permanent collection of the CosmoCaixa Science Museum, Madrid.

With thanks to:



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THE NEURON CHAMBER

Alan Rorie, Ben Carpenter, Jo Slota & David Shulman, USA

What do your thoughts look like?

Peer through the glass window of *The Neuron Chamber* where you'll see sculptures communicating the form and function of brain cells called neurons. As you walk around the chamber, studying the neuron's curves and textures, you watch the bright electrical arcs twist and flow horizontally down the neuron's length alluding to the way neurons create our mental world through electrical impulses.

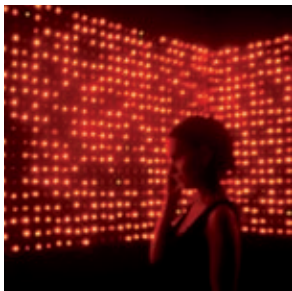


**EOD04:
PROBING THE INTANGIBLE
INAUDIBLE INVISIBLE**

Frederik De Wilde, Belgium

What will the electric fish tell you?

EOD04 is as an artwork inspired by biology, physics and technology. The communication of living electric fish is turned into sound and light through a matrix of LEDs that track the electric waves of the fish. As the fish are nocturnal the impact of light will make the fish move. The installation stimulates the audience to be slow and observant.



CELL PHONE DISCO

Ursula Lavrencic & Auke Touwslager, Netherlands

What does your conversation look like?

Cell Phone Disco is a surface that visualises the electromagnetic field of a mobile phone. When you make a call near its surface several thousand lights spark up, making the invisible visible by translating a part of the electromagnetic spectrum into visible light.

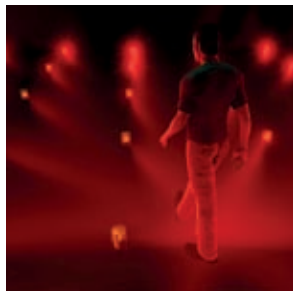


VARIATA

Kerry Tunstall & Wade Enright, New Zealand

What makes sparks fly?

Variata from variable data is a live presentation of high voltage plasma and corona discharge, using a lightning arc drawing concept in a collaboration between art and science. Wade Enright, an electrical engineer, and Kerry Tunstall will work alongside a film created with the lightning arc drawing process.



BEACON

Chris O'Shea & Cinimod Studio, UK

Are the machines watching you?

This installation creates a kinetic light space that has a mind of its own, interacting with the surroundings and its visitors. Normally in constant rotation, these emergency beacon lights have been modified to create an immersive and powerful experience. Electronics by White Wing Logic.

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LIGHTWAVE TEAM:

LIGHTWAVE PRODUCER: Karen Walshe

EXHIBITION DESIGN: Gerrard O'Carroll & Jake Moulson

EXHIBITION VINYL DESIGN: Makeitwork.ie

CURATORIAL TEAM:

Denis Weaire

Richard Kirk

Michael John Gorman

Marie Redmond

SCIENCE GALLERY:

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OPERATIONS MANAGER: Lea O'Flannagain

MARKETING & COMMUNICATIONS MANAGER: Anja Ekelof

FRONT OF HOUSE: Anne Lewis & Emma Jane Skelton

GRAPHIC DESIGN: Detail. Design Studio

HOW WAS IT FOR YOU?

WE WANT TO KNOW YOUR THOUGHTS ON LIGHTWAVE. WHAT EVENT OR EXHIBIT TURNED YOUR LIGHTS ON AND WHAT LEFT YOU IN THE DARK?

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Our most important resource for the future – our students – must be encouraged and supported in their study of science, technology and engineering subjects and convinced that a career in this area is stimulating and rewarding.

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The Science Foundation Ireland Scholarship - Young Women in Engineering aims to attract and encourage more high-achieving young women into third-level education in engineering disciplines where they have traditionally been under represented. Dell is involved with this programme and has without doubt raised its profile.



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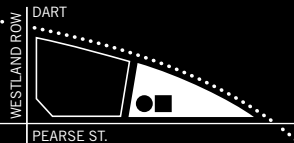
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'Jelly Baby 3' by Mauro Perucchetti, 2004.

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16:00–21:00 [OPEN MON 26.01.09]

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