

Step into the

FUTURECADE

**An exhibition of virtual
reality and more**

GALLERY GUIDE

17th—25th September

Millennium Gallery, Arundel Gate, Sheffield, S1 2PP

OPEN: 10am — 5pm each day, LATE OPENING: Wednesday 21st until 9pm

All events are free and open to everyone



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Welcome to the FUTURECADE

Futurecade is inspired by the many and varied visions of technological utopia that were a feature of 20th century World's Fairs or Expos, in particular those held from 1939 to 1964. From Futurama, Norman Bel Geddes forecast of the future in New York in 1939/40 to Atomium at the 1958 Brussels Expo – all combined the concept of technology as utopian progress and imagined the world of tomorrow. Taking its name from the 1939 exhibit Futurama – our Futurecade combines two of the themes of the Festival of the Mind; virtual and utopia and reimagines the synergy between art and technology.

From moving wallpaper and the structure of colour, shamanic fungus to immersion in virtual reality, the concept of how future technology will change, inspire, and ultimately be part of our everyday life, including the art on our walls, is presented here during the Festival. Placing these concepts in a futuristic arcade in the stunning glass and steel architecture of the Millennium Gallery we were inspired by Walter Benjamin's concept of the flaneur or street walker.

As you journey through the future, we hope our prototype visions will shed light on the modern industrial and artistic world to come as we welcome you into the Futurecade.

Professor Vanessa Toulmin
Director, Festival of the Mind

FUTURECADE: Art of the Future

Discussion: Spiegeltent,
Sunday 18 September, 13.00–14.30
Panelists: Professor Vanessa Toulmin
(Festival of the Mind Director);
Mark Atkin (Futurecade curator);
Karen Palmer (Futurecade artist);
Laura Sillars (Site Gallery);
Kirstie Hamilton (Museums Sheffield).

What will art look like in 2025? What is the future for galleries? Will technology change everything? We've invited a panel of artists and curators to answer your questions, and to talk about some of the ground-breaking work that's already being done.

Acknowledgements

We would like to thank the staff of Museums Sheffield (especially Rosie and Laura), Daniel Cutmore, Ian Knowles, Polly Wilson, Sara Unwin and our amazing academics and artists for their truly wonderful collaborations. Thanks to Human Studio for realising the design identity for Futurecade in collaboration with the Festival of the Mind Director, Professor Vanessa Toulmin. And special thanks to our amazing curators Mark Atkin and Tom Millen.



The Millennium Gallery is fully wheelchair accessible from the Winter Garden or Cadman Lane entrances, and from the Arundel Gate entrance, using the elevator to reach the upper floor.

ARTIST COMMISSIONS

As part of the Futurecade exhibition, we have been able to commission four artists to design work that uses technology to explore what the art of the future will look like, thanks to Arts Council England.

RIOT

RIOT takes you on a personalised journey through a protest march, which escalates into a dangerous riot. It is an immersive, live-action adventure, which uses facial recognition technology to allow you to navigate through a branching narrative based on your emotional responses. You will feel fully immersed in a volatile world of looting, gangs of activists and intimidating police officers. Your ability to make it through safely depends on your emotional reactions to the characters and situations. Your emotions are the remote control and the experience will reflect the moral consequences of your reactions. Do you know yourself well enough to survive a RIOT?

Director Karen Palmer is the founder of Interactive Films Ltd. Her 'neurogames' combine storytelling with neuroscience and wearable technology to create immersive experiences. Produced by Crossover. Made with the assistance of Prof Hongying Meng, Department of Electronic and Computer Engineering, Brunel University, London, and National Theatre.

You can find out more about Karen Palmer's work at the Meet the Maker session at 1.30pm on Thursday 15 September in the Spiegel tent.

The Regret-o-Tron

Could you be addicted to regret? The people at the National Facility For The Regulation of Regret have developed hundreds of diagnostic tests to recognise, measure, and quantify regret. Normally they charge hundreds of pounds to administer this test, but they're kindly loaning it to the Futurecade exhibition – the first time this test has been administered to the public outside of the Facility. Answer as many questions about your behavioural tendencies as you can, and take away your results. You may be eligible for the NFRR weekend treatment package!

Director Rachel Genn is a neuroscientist and a novelist with a fascination for regret. Her short film The National Facility for the Regulation of Regret has been officially selected for Aesthetica Short Film Festival 2016.

Rocket is a Sheffield-based, BAFTA-winning digital agency that makes awesome things happen using smart thinking, design and technology.

Moving Wallpaper

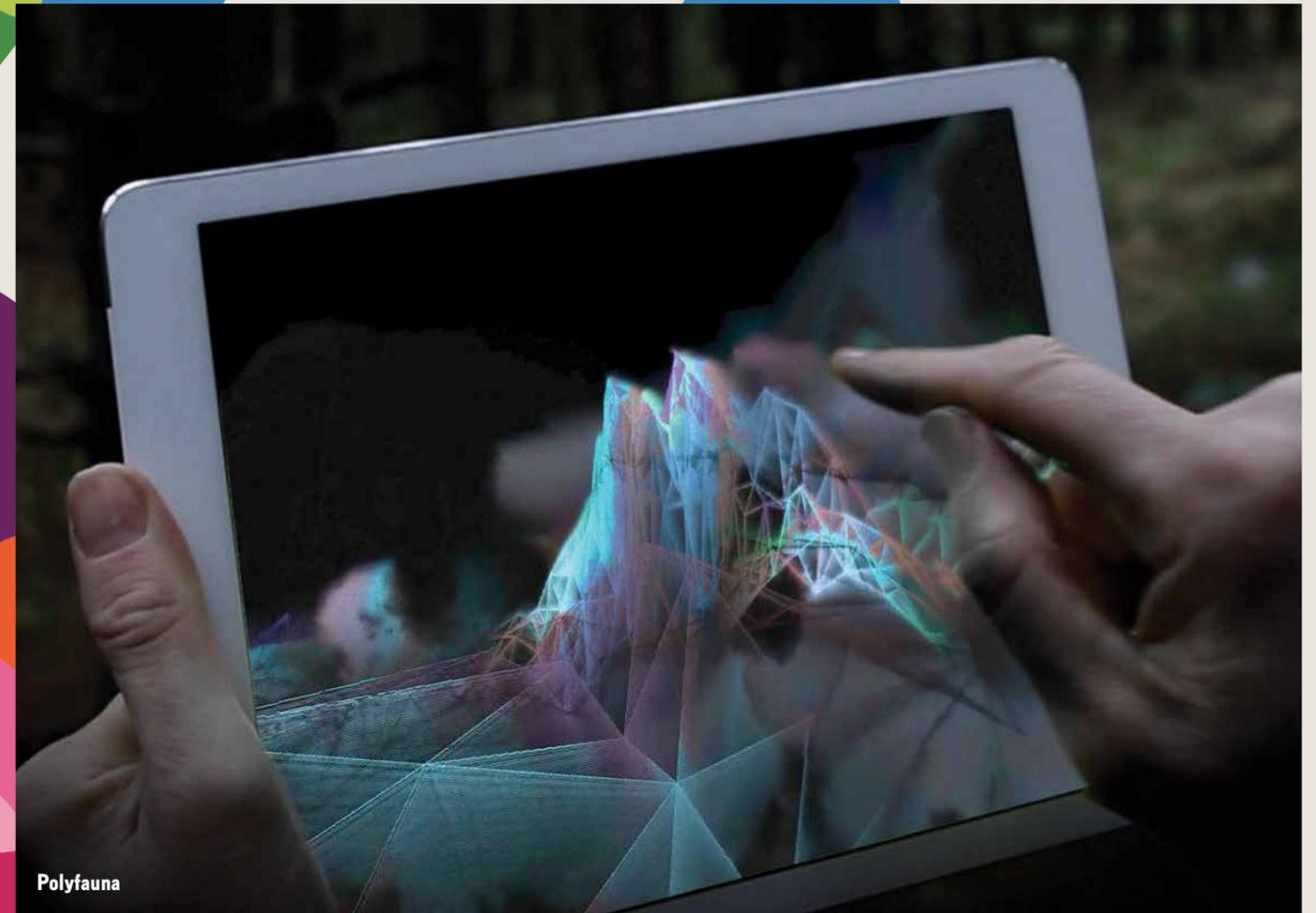
Here is another first for our City of Makers: a bold idea that's set to transform interior design, reinventing wallpaper for the 21st century. Think William Morris with a futuristic twist.

Sheffield artist and designer Sarah Jane Palmer has combined lenticular printing technology with more traditional methods to create three beautiful patterns, each with an animated element that gives the illusion of subtle movement within the design. Sarah Jane Palmer created the design brand Muriel in 2015. Her work brings contemporary art to the luxury interiors market, and attracts an international audience. She is a true maker, as passionate about mastering techniques, such as hand flocking and screen-printing, as she is about new technologies.

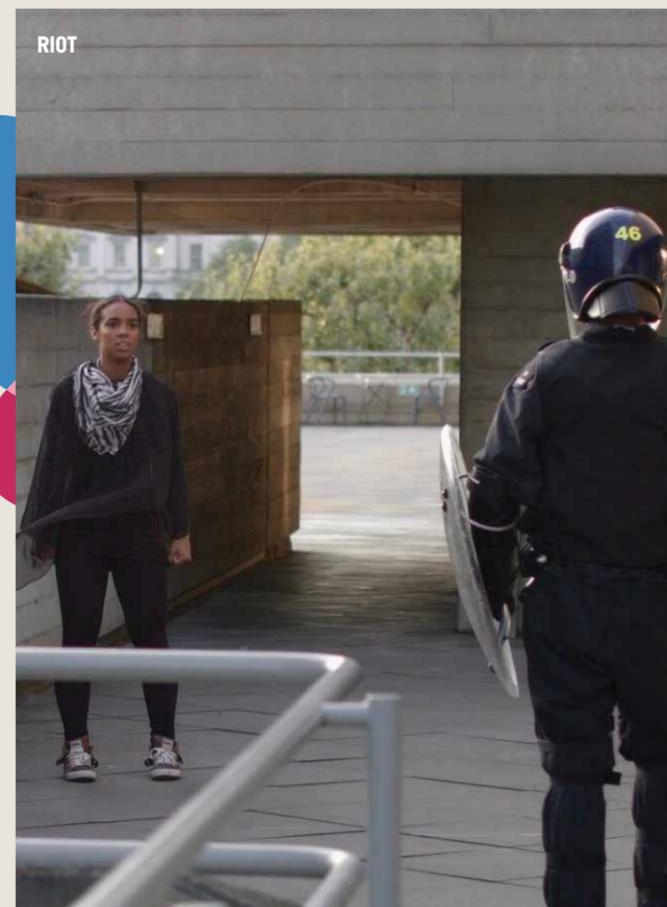
Polyfauna

Polyfauna is an exploratory audiovisual app, born out of Radiohead's The King of Limbs sessions and the sketchbooks of Stanley Donwood. The mysterious, immersive app is brought to life through touch and offers a unique and different set of experiences and encounters each time it's used. A pioneering new collision between digital art and the world of apps, the collaboration sees the creation of abstracted, expanded and exploded versions of audio and visual work by the Radiohead.

Universal Everything is a digital art and design collective, inventing new forms of moving image for the screens of the future.



Polyfauna



RIOT



Moving Wallpaper



Regret-o-Tron



#happysheffield



#happysheffield

You'd be forgiven for thinking that happiness can't be measured. But what if there were a digital display in the city centre, like a clock, that told you how happy Sheffield was at any given time? That's right, we've made one.

Artists

Charlie Barnes is project coordinator for Ignite Imaginations, an organisation that helps people develop their creativity. Human is a Sheffield-based creative agency specialising in CGI animation and virtual reality. Founder Nick Bax is a visiting lecturer in design and visual communication and a fellow of the Royal Society of Arts.

Researchers

Dr Chris Blackmore is a teacher and researcher in the University's School of Health and Related Research. He's interested in mental health, particularly the role of emotions in online learning, and how the internet affects our wellbeing. Dr Mark Stevenson is a senior lecturer in computer science. He builds systems that help people access information from large collections of documents. Mark's research has been funded by the EU, the Defence Science and Technology Lab, and Google.

Don't miss the talk in the Spiegeltent on Thursday 22 September from 5:30-6pm, where Dr Chris Blackmore and Dr Mark Stephenson present data on happiness levels in Sheffield measured during the festival.

An Artistic Journey into the Physics of Light

This installation shows how art and scientific research are complementary approaches to interpret the same reality and how art is both a way to expose the inner beauty of scientific discoveries and a bridge to approach physics and astronomy, often perceived as distant and inaccessible, from a different and more suggestive perspective.

Artists

Samantha Bryan, Gareth Jones and Sharon Mossbeck worked with the academics from the University's Department of Physics and Astronomy to identify the exhibition's four themes: Generating Light, Harnessing Light, Computing with Light and Beyond Light. Samantha creates illustrative sculpture that tells stories. Gareth is a digital artist and 2D/3D motion designer. Sharon is a conceptual artist whose work focuses on themes related to death and religion.

Researchers

Dr Saida Caballero, Dr Emiliano Cancellieri, Dr Jenny Clark, Dr Rhoda Hawkins and Dr Matthew Malek.

Dancing with Robots

The researchers at Sheffield Robotics study the way humans work in order to make better robots. This breath-taking performance, featuring robots alongside human dancers, offers an entertaining glimpse of the future. It's interactive too. Using our special magic button, the audience decides what happens in the story of four-year old Jorge and his robot friend Nao.

Artists

Award-winning Instant Dissidence is a Bradford-based dance company directed by Rita Marcalo. Their work has been shown in Austria, Belgium, Finland, France, Georgia, Germany, Italy, Lithuania, Poland, Russia, Spain, Turkey and the USA.

Researchers

Sheffield Robotics researcher Michael Szollosy has a special interest in the cultural aspects of robotics. He is currently researching cyberselves in immersive technologies.

From Vinaigrette to Plastic Electronics

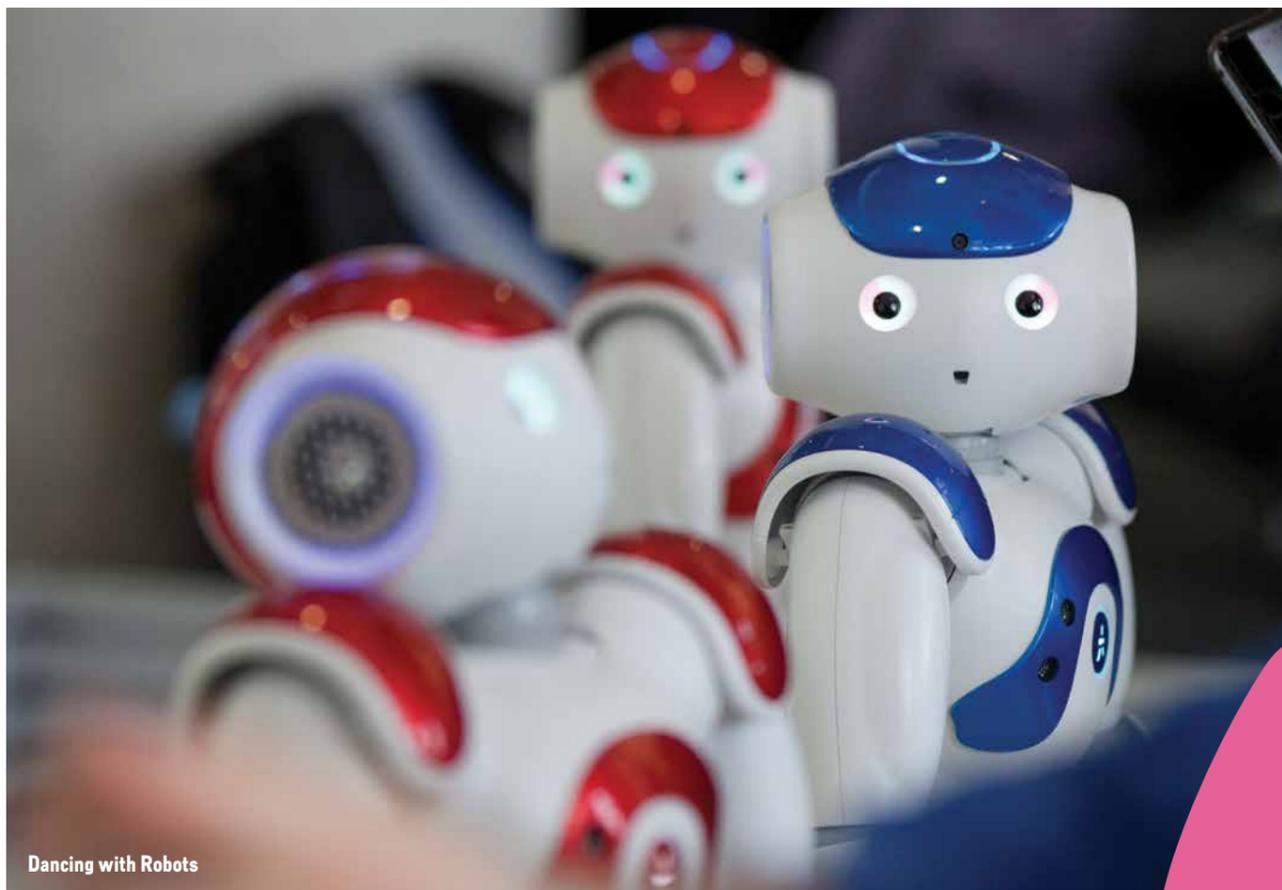
This interactive installation takes you inside the microscale world of plastic electronics to demonstrate the science that makes bendy plastic electronics, such as flexible solar cells and other technologies, possible. The process is called 'phase separation'. This allows for special plastics to form the intricate and beautiful structure necessary to conduct electricity and it's also same thing that happens when oil and vinegar separate – as in a salad dressing. The exhibition includes an interactive spinning painting machine which replicates, on a larger scale, the process of spin-coating which is used in our research labs to make plastic electronic devices. Come and create your own phase separation painting from 12pm to 5pm weekends and 2pm to 5pm weekdays.

Artist

These materials and processes are developed by Rotherham-based artist Mark Fell into a series of limited edition fine art prints.

Researchers

Dr Daniel Toolan is a Research Associate in the Department of Chemical and Biological Engineering. He has received a number early career researcher awards from the RSC, IoP & the Parliamentary and Scientific Committee for his work on phase separation. Dr. Jonathan Howse is an Associated Professor of Soft Matter in the Department of Chemical and Biological Engineering.



Dancing with Robots



Gaiamycota

Could fungus save the human race? Professor Duncan Cameron believes it could. Duncan's address to the World Climate Change Conference in Paris (2015) carried a stark warning: our planet is becoming infertile. But his message is optimistic. Gaiamycota uses sculpture, photography, film, sound and performance to explain how fungus could be used to re-engineer the planet's soil and save humanity.

Artist

Anthony Bennett is renowned for his creative partnerships, notably his work with The National Fairground Archive and artist Yinka Shonibare. Currently, he is working with digital artist Augustinas Naslenas, Gaiamycota collaborator, on a series of artworks combining sculpture and photography.

Researcher

Professor Duncan Cameron was appointed Royal Society University Research Fellow and Professor of Plant and Soil Biology at Sheffield, following Post-Doctoral research at the University of Würzburg, Germany. As director of Plant Production and Protection (P3), a centre for translational agricultural technologies, his research looks at the relationships between symbiotic organisms and how they influence our lives.

Don't miss a special performance that will be a key component of this work in the Spiegeltent on Friday 23 September from 3.40-4pm.

Memories in the Digital Age: Project, Protect and Preserve

Our DVDs and hard drives won't last forever. Or even for as long as a reel of celluloid film. As we live through a period of rapid technological change, how can we make sure our memories are preserved for future generations? This thought-provoking installation showcases rare pieces from the University's special collections archive, alongside work by some of Sheffield's first film pioneers. The idea is to start an important conversation about the preservation of digital records.

Artist

Paul Carruthers is an award-winning artist and designer with over 20 years experience in lighting, furniture design and manufacturing.

Researchers

The University Library Special Collections and Archives Division is home to the Special Collections Department and the National Fairground Archive, a unique, internationally-renowned resource for research in popular culture.

No Greater Fear Than the Unseen: The Virtual Reality Experience

Escherichia coli bacteria is deadly. It can induce a sense of fear. It can cause illness and death. It may also be medicine's brightest hope. Our immersive virtual reality experience brings you face-to-face with this amazing, terrifying bug.

Artists

Human is a Sheffield-based creative agency with global credentials. Specialising in CGI animation and virtual reality, the team works with everyone from renowned academics and star DJs to fashion icons and US tech-innovators. They've exhibited their work in Europe, Japan, Brazil and the United States. Founder Nick Bax is a visiting lecturer in design and visual communication and a Fellow of the Royal Society of Arts.

Researchers

Dr Nate Adams is a bit of a magician. He has made clouds form at low altitudes. He has coded robots live on stage. These days, Nate's experiments examine the way micro-organisms interact to create the pigments of life. Nate works closely with Professor Simon Foster, Professor of Microbiology and Head of the University's Krebs Institute. Simon's lab is dedicated to understanding super-bacteria - bugs that resist antibiotics.

Twin Karmakharm is a research developer at Sheffield University's Advanced Computing Research Centre specialising in the large scale simulation of pedestrian movements. He's also an academic lead for the Virtual & Augmented Reality Lab in the University's new Diamond building helping to promote the technology for use in teaching, research and public engagement.

Stars in the Brain

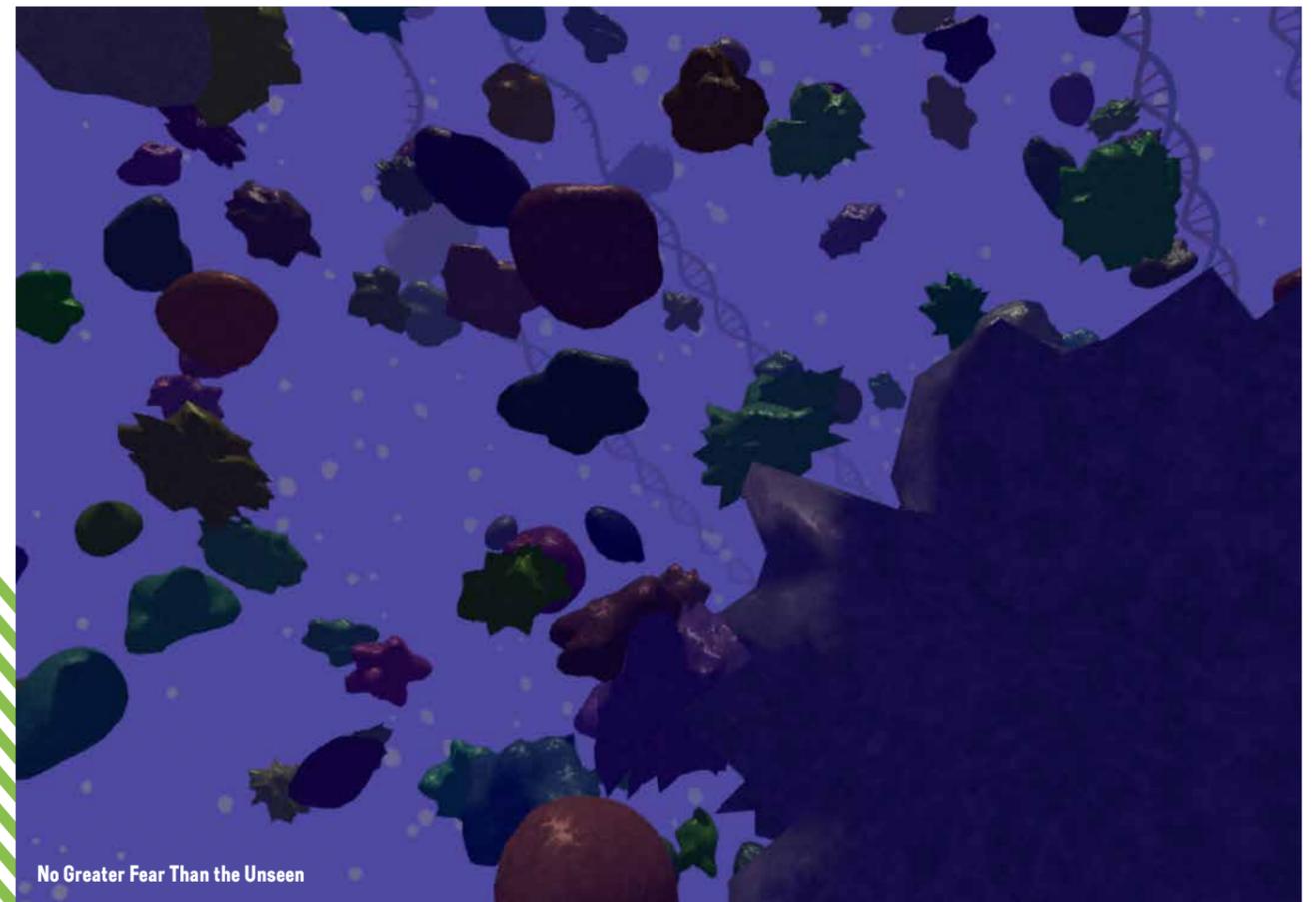
This immersive digital installation takes you inside the human brain to follow the day-to-day workings of astrocytes, the star-like cells that we literally can't live without. Astrocytes do the brain's tidying up, clearing a space around the neurons so they can do their work: helping us to move, think and feel.

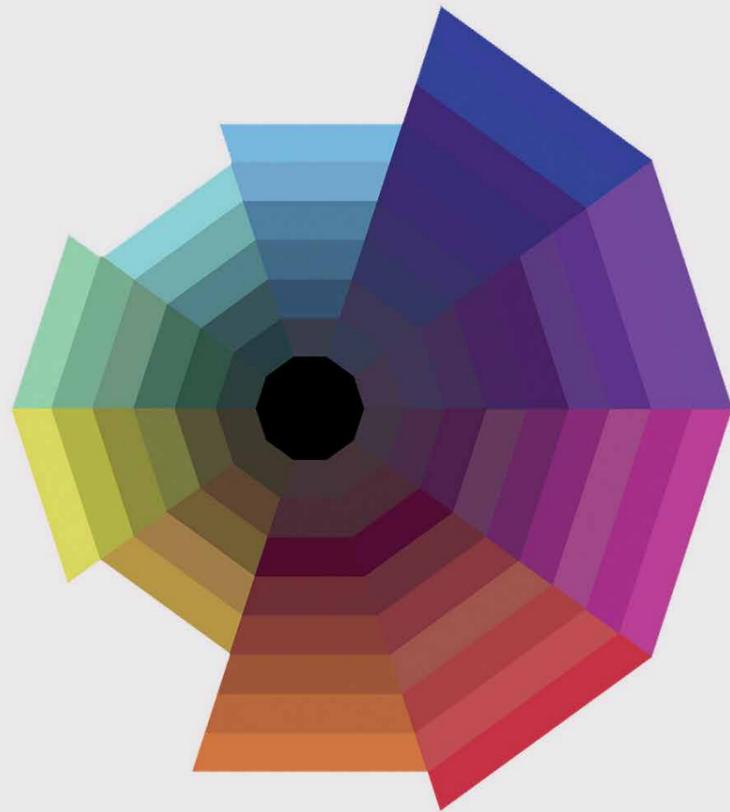
Artists

Animator and digital artist Mike Futcher makes short films, music videos and installations. Cassie Limb works in lots of different media to create work inspired by her microscopic study of cell structures.

Researchers

Monika Myszczyńska is a research technician in the Department of Neuroscience. Dr Laura Ferraiuolo is lecturer in translational neurobiology.





Structural Colour

Structural Colour

Iridescence is a real-world installation made from 3D, super-enlarged versions of the iridescent structures from butterfly wings, while *Homage to the Sphere* is an abstract, virtual reality colour environment, developed with design studio Human.

Artists

Sheffield-based artist Paul Evans is currently artist in residence in The University of Sheffield Department of Physics and Astronomy. Paul's work has been shown throughout the UK, in Japan, and in New York. His achievements include the Eyestorm Gallery award for painting (2007), the Leverhulme Trust Residency, Cardiff University (2011) and the National Coordinating Centre for Public Engagement 'Engage' Prize (2014).

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Researchers

Professor Richard Jones has been facilitating liaison and collaboration between Paul and the Structural Colour Research Group in the Department of Physics and Astronomy throughout his residency.

Paul Evans and Professor Richard Jones will give a talk about the art and science of colour in the Spiegel tent at 5pm on Tuesday 20 September. As part of this you'll also get an artist's presentation of *Homage to the Sphere*.

The Virtual Hole in the Road

It has become a legend. Even people who used to shop there every Saturday find themselves asking: Did the Hole in the Road really exist? Yes. The Hole in the Road was a marvel of 60s urban planning: an underground shopping centre in the heart of the city. But it was filled in 22 years ago. And now we've recreated it. Just put on the virtual reality headset and you're there. As you travel through it, each path leads to a unique set of stories, episodes from real lives, all linked to one extraordinary place.

Artists

Human is a Sheffield-based creative agency with global credentials. Specialising in CGI animation and virtual reality, the team works with everyone from renowned academics and star DJs to fashion icons and US tech-innovators. They've exhibited their work in Europe, Japan, Brazil and the United States. Founder Nick Bax is a visiting lecturer in design and visual communication and a Fellow of the Royal Society of Arts.

Researchers

Brendan Stone, School of English, is Professor of Social Engagement and director of the Storying Sheffield project. Poet and photographer Adrian Scott, a Storying Sheffield contributor, has published two collections of poetry. Steve Maddock is senior lecturer in the Department of Computer Science and head of the VRGraphics research group. Professor Guy Brown's research helps create machines that mimic our ability to process complex mixtures of sounds. Architect and educator Satwinder Samra began his career with Urban Splash and is currently Director of Future Practice and a Senior University Teacher at SSoA. Chris Smith is a Hole in the Road expert and has collected a definitive image library of the iconic destination.

The Hidden Life of Light

Entertaining animations, revealing how scientists could use light to help build quantum computers – machines so fast and so efficient they will make today's technology seem crude – and showing the use of ultrathin, single-atom-thick materials in quantum science.

Artist

Gareth Jones is a digital artist and 2D/3D motion designer.

Researchers

Scientists from the LDS Semiconductor Research group, coordinated by Dr Maksym Sich.



Theatres of the Mind: Dissecting Brain Function

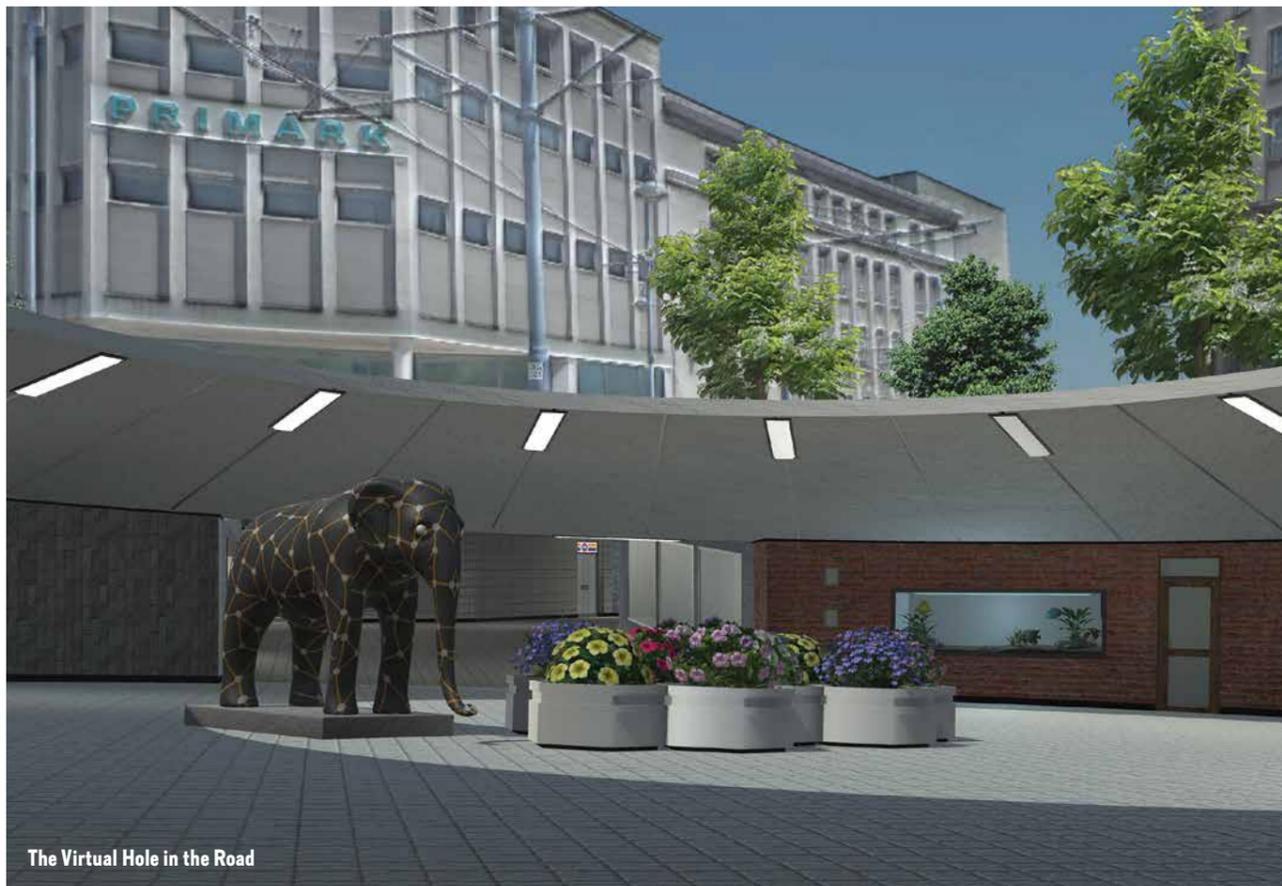
Our Victorian-style horror theatre looks at how brains were studied in the past. There are gruesome trepanning and gory dissections. You can even volunteer to have your own brain 'dissected' – in front of a live audience! Over in the modern-day surgical theatre, you can see how things are done now, and find out how 21st-century science can read your mind. There are science lectures, demos, games and dancing.

Artists

Stuart Faulkner creates live visual arts to teach you about the sublime, surreal beauty of your brain. Nathan Geering, artistic director of the Rationale hip hop theatre company has dedicated the last two years to researching the unlikely link between breakdance and visual impairment. He brings Theatres of the Mind to life with vibrant dance.

Researchers

Dr Aneurin Kennerley is a physicist and part-time mentalist with a PhD in brain imaging. Yes, he really can read your mind – ask him! Aneurin's partner in theatrical enterprise is Dr Kendra Arkley, a research fellow in the Department of Psychology. Kendra specialises in behavioural neuroscience.



The Virtual Hole in the Road



Capture more Futurecade experiences elsewhere

Projections

Festival of the Mind is delighted to present some night-time projections on iconic buildings across the city centre. This will give the public the added opportunity to see Arts Council England-funded FutureCade projects and other films produced for Festival of the Mind in a different way.

It's Raining Words

Every time it rains, it rains... words! Or at least it will this autumn in Sheffield. We are delighted to be working with Off the Shelf and street artist Peregrine Church from America on a project called It's Raining Words. Peregrine has created water-activated art in Seattle with poems that are only visible when it rains. He uses superhydrophobic nanotechnology to create the work which has been a huge hit in his own city.

In what will be a UK premiere, you can get to experience It's Raining Words here in Sheffield, starting during Festival of the Mind and culminating in Off the Shelf on 29 October. For Off the Shelf, sites in the city and some out of town will reveal Yorkshire sayings and Sheffield song lyrics, as if by magic, but only when it rains! And there will be one very special piece of text to look out for, which was written for the festival by playwright and writer Alan Bennett.

Don't miss the talk with artists, scientists and the festival director Professor Vanessa Toulmin to discuss the science behind this incredible art, 3-4pm on Tuesday 20 September in the Speigel tent. There is a chance to meet Peregrine during Off the Shelf on 29 October at 6pm in the Winter Gardens.

In collaboration with Off the Shelf and Yellow Bus Events.

Voices Along the Road: Messages From Our Future Selves

At Bank Street Arts. Open Thursday 15 September to Sunday 25 September, 11am to 4pm. Late night Wednesday 21st til 9pm.

If your future self could travel back in time to talk to you, what would she/he say? Would this insight help you make better choices? Poets Rob Hindle and Linda Lee Welch and composer Michael Harding explore the concept of future selves in an immersive poetry and sound installation.

Artists

Originally from the USA, Linda Lee Welch is a musician, artist, writer and senior lecture in Creative Writing at Sheffield Hallam University. Rob Hindle was born in Rotherham. His collections include Some Histories of the Sheffield Flood 1864 and Neurosurgery in Iraq. Michael Harding is a composer and producer specialising in collaborations with artists. His recent work includes a poetry performance at the Toulouse Lautrec museum in Albi, France.

Researcher

Dr Fuschia Sirois is a reader in social and health psychology and a former Canada Research Chair in Health and Wellbeing.

Portland Works Inside Out

Friday 23-Saturday 24 September
Why not visit another Arts Council England funded project at Portland Works?

For more information visit:
festivalofthemind.group.shef.ac.uk/portland-works



FUTURECADE is curated by Crossover Labs
Mark Atkin and Tom Millen

Crossover Labs is a curator, producer and training provider. Mark and Tom have programmed the interactive exhibitions that form the Alternate Realities strand of the Sheffield Doc/Fest, as well as exhibitions of virtual reality at the Bergen Film Festival and the Global Health Film Festival in London. As producers, their VR documentary Easter Rising: Voice of a Rebel, co-produced with VRTOV for the BBC, is currently being exhibited at the National Theatre. They have made a series of music and archive films, including From the Sea to the Land Beyond, The Big Melt, From Scotland with Love, Love Is All, The Show of Shows (with Sheffield's own Professor Vanessa Toulmin as co-producer) and Atomic, that have been theatrically released, shown on the BBC, exhibited at the Barbican, The Museum of Modern Art in New York, and The Royal Academy of Arts, and performed at music and film festivals around the world. They run courses in Digital Storytelling, Virtual Reality production, 360 video production and photogrammetry and run development labs for digital projects.