

**Large  
print  
labels**

Marshmallow Laser Feast is Ersin Han Ersin, Robin McNicholas and Barnaby Steel. The London-based art collective creates immersive experiences that expand perception and explore our connection with the world. In collaboration with artists, scientists, musicians, poets, programmers and many more makers, Marshmallow Laser Feast has been leaving a glittery slug trail of sensory experiences as they journey through the cosmos. Fusing architectural tools, contemporary imaging techniques and creative technologies, they sculpt spaces that lay dormant until animated by playful investigation.

**It begins with breath  
The syllables of starlight  
An ancient language of the cosmos  
Uttered by grasses and forests,  
mountains and bodies**

**From this chorus  
An atmosphere is sung into being  
Boundless, caressing;**

**These are the tides we live in  
Nourishing us inside and out  
In ripples and ricochets  
Immersing us in abundance  
As the world breathes out**

**Life begins to take shape  
A tangle of essences  
streaming beneath your skin  
Blurring the outline of where  
you end and begin**

**On this unending journey  
Time shades off  
Into moments of matter**

**Breath takes flight,  
merging and emerging,  
to an infinite rhythm  
And somewhere in this cascade  
Is you:  
Life nested within life**

**A cell in the body of the Earth  
Dissolving the boundary  
Of who  
is breathing who**

**Breathe | Mauri Ora**

# Breath Cycle

London, 2018

Single-channel video, two-channel audio

**Duration:** 2 minutes, looped

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Humanity's dependence on the natural world is absolute, from the food we eat and the water we drink to the air we breathe. The protection and regeneration of ecosystems is fundamental to our collective futures.

But statistics and facts do little to change behaviours, develop new perspectives or create new stories. Marshmallow Laser Feast confronts this issue through awe-inspiring experiences and artworks, revealing a global system that intimately ties all the natural world into a wondrous rhythm that underpins life on Earth.

There have been up to 10 mass extinction events in the Earth's history. Nearly all have been caused by an imbalance between oxygen and carbon dioxide: too much oxygen and things get cold, too much carbon dioxide and things get hot. In an age where excess carbon dioxide is fuelling the climate crisis, the simple act of breathing can engage us with this cycle of life in an intimate way, helping us reflect on our dependence and responsibility to the organisms we share the planet with.

# **Sanctuary of the Unseen Forest**



Where do you end, and the world begins?

We belong to the biosphere, a beautifully complex system that connects us to everything. Trees inhale our breath and use sunlight to exhale oxygen. We breathe in an eternal cycle of reciprocity.

Our collective future depends on seeing the invisible networks between us and nature, the world beyond our human senses.

Hidden in the layers of a tree, we uncover the vibrancy of life. Nutrients pulse through its arteries in sync with a heartbeat; rivers of carbon pour into the soil.

From its roots to its canopy, the tree is a living bridge between the earth and sky.

Do you know where this ancient kapok tree ends, and you begin?

# The Ceiba Pentandra and the Amazon Rainforest

The kapok tree (*Ceiba pentandra*) is one of the tallest in the world and can grow to over 150 feet (45 metres). These natural giants rise above the rainforest canopy and provide a home for plants that are dependent on sunlight, including epiphytes, which supply food and shelter for countless insects and animals.

Rainforests are part of the planet's life-support system; an invisible world of interconnected networks and cycles that we all depend on, providing fresh air, clean water, fertile soil, nutritious food, rich biodiversity, a stable climate and a natural recycling system. If these structures and cycles are threatened, so are we.

“These giant trees are portals through which you leave your self-importance behind and embody something much larger, much stranger, much more than human. What is it like to be one of the largest organisms that has ever existed? How does it feel to host a vast web of relationships that anchor an ecosystem?”

Marshmallow Laser Feast

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## Sanctuary of the Unseen Forest

London, 2022

Single-channel video installation,  
multichannel audio

**Duration:** 4 minutes, looped

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# **Evolver: Deep Listening Meditation**

# Evolver: Deep Listening Meditation

London, 2022

Multichannel audio installation

**Duration:** 10 minutes, looped

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The atmosphere is a co-creation of all breathing beings, you only exist in relation to everything else. The trees, mycelium, bacteria, pollinators, oceans are as much a part of you as your own body.

If you could explore yourself, you would discover that just below your skin you are a branching being made of currents and rivers, the world flows into you and you flow into the world.

**Get comfortable, put the  
headphones on and let  
Cate Blanchett guide  
you through the meditation.**



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# **Evolver: The Journey of Breath**

# Evolver: The Journey of Breath

London, 2023

Multichannel video installation,  
multichannel audio

**Duration:** 14 minutes, looped

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If we could learn to see differently

We might see that we are whirlpools:

Eddies and ripples in the vast flow of life.

Where do you draw a line around your body?

Is it possible to say where you end and begin?

When you think of the inside of your body,

What do you see? A darkness, an absence,  
a diagram?



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# **Evolver: The Breathing Cell**

# **Evolver: The Breathing Cell**

London, 2023

Single-channel video installation,  
multichannel audio

**Duration:** 5 minutes, looped

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**As we breathe, we are border-beings,**

**Oscillating between inside  
and outside:**

**Offering ourselves to the world  
as we exhale**

**And drawing the world into ourselves  
as we inhale**

Breath not only sparks life but also connects us to the natural world through the cycle of respiration.

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## Inhale

How does oxygen even get into our cells for respiration to happen?

The answer is that the oxygen flows down from a place where there is a lot of it to where there is very little. The air sacs in our lungs contain tiny tubes called capillaries through which blood flows to the heart. The air we breathe has a higher concentration of oxygen than the blood in the capillaries. That means that the oxygen flows through the capillary walls. There's just enough time for this to happen before the blood in the

lung capillaries is pumped around the body by the heart.

From here, oxygen travels through large tubes (the arteries) and small tubes (arterioles) to organs and tissues that have lower concentrations of oxygen than the blood. The energy factories of each cell (the mitochondria) use oxygen up so quickly that their concentration is less than that of the tissue fluid, so oxygen continues its journey into every cell. By this point, the blood has a far lower oxygen concentration and travels back through the veins to the heart and on to the capillaries in the lungs where the cycle starts again.

# Exhale

There is another part of the story. As the oxygen inside the cells helps to break down food molecules it becomes attached to carbon atoms, forming carbon dioxide. This flows out of the cells and dissolves in the blood. It's then swept off in the blood all the way back to the lungs. By the time the blood arrives, it's picked up a lot of carbon dioxide produced in the tissues, while the air in the lungs only has traces of it. This leads to a rapid unloading of carbon dioxide into the air sacs, which is then exhaled with each breath.

This cycle maintains the constant flow of oxygen into the body and of carbon dioxide out of it. It's this carbon dioxide that plants use so effectively, producing oxygen in return for us to breathe!

# **The Tides Within Us**

left to right

# **The Tides Within Us Print Series**

Torso

Head

Hand #2

Lung #2

Lung #1

Hand #1

London, 2019

Digital prints on Hahnemühle Photo Rag

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**Evolver: VR**



# Embodiment

Embodiment is the sense of experiencing ourselves and the world through our bodies, not just our brains. In neuroscience, cognitive science and psychology, researchers have found that accessing the emotions in our body – in essence, being actively attuned to our senses – has a discernible impact on our well-being, and strengthens our connection to other people and the world around us.

Immersive artworks support embodiment and a greater sense of presence, their audio and visual cues bringing us back to our body, our breath and ourselves. They build on the embodied design approach of somaesthetics – which highlights the bodily experience in the appreciation of art – as they break down traditional boundaries

between an artwork and its audience,  
grounding us, connecting us, calling on us,  
simply, to just be.

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# The Overview Effect

When astronauts first looked back at Earth from space, they were awestruck and humbled to see the world in its immensity and insignificance. This new perspective caused a cognitive shift in awareness known as the overview effect. It places humans as one tiny part of a vast, interlinked ecosystem – not the centre. We can get the same effect by looking at enormous canyons or stunning mountain ranges. It's not just natural phenomena that can provoke awe and wonder though, it can be epic virtual landscapes or a VR journey through our own branching bodies.

The overview effect evokes a unique pattern in our brains that disrupts the area responsible for the ego and the self. Experiences of awe can have a lasting effect, increasing people's kindness and connection to nature – a proven driver of pro-environmental behaviour. It's a powerful transcendent state with personal, social and environmental impact.

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## **Resonance Breathing**

From Buddhism, Taoism, Christianity and Kundalini Yoga to Indigenous American and African cultures, sacred prayers, chants and mantras attune practitioners to the sublime. Across all cultures, these sacred techniques involve controlled breathing and take approximately six

seconds to recite. They're ancient traditions that form the basis of mindfulness, which often features meditations of controlled inhaling and exhaling for five to six seconds each.

In science, this is called resonance breathing. Growing research shows that achieving this flow lowers the body into a state of coherence, maximising the efficiency of our heart, circulation and nervous system. It's also the rhythm that underpins the artworks in this exhibition.

By adopting this essential and powerful tool of the human body, we can relieve stress, build resilience and harmonise ourselves with the natural world.

# Evolver: VR

London, 2022

Real-time virtual reality,  
two-channel binaural audio

**Duration:** 24 minutes

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# Evolver: The Beating Heart

London, 2023

Single-channel video installation,  
multichannel audio

**Duration:** 2 minutes, looped

# **The Scale of Things**

Our concept of reality is entwined with how our bodies are structured to perceive the world. Scientific inquiry, probing the nature of nature, reveals a much broader spectrum of reality that lies beyond our perception.

Under a microscope, a cell appears to breathe halos of light. If we could lie beneath it and look up, we might see how similar a cell is to a star.

By changing our point of view, we begin to realise that we're as made of stars as we are of cells.

# Beyond Observation

In 1916, Albert Einstein published the equations of general relativity. Using those equations, Karl Schwarzschild found a distance from the centre of a star where space becomes infinite, and time stops – the Schwarzschild radius. Now we can use those same equations to explore the fluid nature of spacetime, in and around the most extreme place in the universe – the singularity of a black hole.

Here, beyond observation and human experience, only mathematics and imagination can comprehend what could or could not be. These artworks explore the science behind black holes and gravitational waves before you journey further and peer beyond the event horizon, revealing the cosmic connection between black holes, dying stars and you.



# Distortions in Spacetime: The Gravitational Field

London, 2020

Video

**Duration:** 2 minutes, looped

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# Distortions in Spacetime: Ripples in Spacetime

London, 2020

Video

**Duration:** 2 minutes, looped

# Distortions in Spacetime: Fabric of Space

London, 2020

Video

**Duration:** 2 minutes, looped

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# Distortions in Spacetime: Gravitational Waves

London, 2020

Video

**Duration:** 2 minutes, looped

# Distortions in Spacetime: An Introduction to Blackholes

London, 2020

Video

**Duration:** 2 minutes, 30 seconds, looped

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“There is so much emotion and beauty in science, and so much that takes place beyond the limits of our perception. If we could stand on the edge of a black hole and peer in, what astounding, undulating cosmic forces might we see? Life, death and everything in between, entwined in a dance as long as time?”

Barnaby Steel of Marshmallow Laser Feast

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## **Distortions in Spacetime**

# Distortions in Spacetime

London, 2020

Real-time interactive installation,  
multichannel audio

**Duration:** 10 minutes

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Move into the  
mirrored area  
and make the  
cosmos come  
to life.

Without breath, there is no life.

But death isn't always the end. It can be a source of life.

A star once died so that you could live.

In the final moments of a giant star's collapse, atoms compress to a point where density becomes infinite, time stretches to a stop and the gravitational field is so strong that not even light can escape what is formed next – a black hole.

But the force that creates this dark shadow also erupts with the power of creation, a supernova that contains the elements that were fused in the heart of the star. This cosmic cascade contains all the ingredients that will eventually coalesce to form planets, plants and people.

**We Live in  
an Ocean of Air**

# **We Live in an Ocean of Air**

London, 2018–21

Video edition

Single-channel video installation,  
multichannel audio

**Duration:** 11 minutes, looped

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**Existence begins as sunlight  
Much of life on Earth is a solar being  
From the plant that drinks its  
golden rays  
To make the sugars that nourish  
all animal life  
We are all powered by energy from  
the sun  
When you entered this space,  
a particle of light left the sun  
and began its journey  
across the galaxy**



**By the time you leave, this particle –  
a photon – will have reached the Earth  
Travelling at the speed of light  
Photons have been making this  
journey from the sun since time began  
When the Earth began to shape itself  
from clouds of dust and elements, the  
debris of an exploded star**

**Now the photon, a tiny wave full  
of powerful solar energy,  
reaches the Earth's periphery  
Passing through the layers of the  
atmosphere  
To the surface, where plant life  
has evolved to meet it:  
Light reaches the tip of a leaf  
And the photon lands on a chloroplast,  
the organ responsible  
for greening energy from sunlight**

**This harnessing of light  
is the foundation of our existence  
When we absorb sugars from a plant  
We are eating sunlight**

**That has been locked in a solar  
embrace with the plant's molecules  
And by its leaves we live:  
The plant drinks the sun and exhales**

**This timeless cycle releases an  
outbreath of oxygen  
Which spills into the atmosphere  
Filling it with breathable air**

# **Science Behind the Sublime**

As an artist collective, Marshmallow Laser Feast seeks to find emotional resonance in scientific stories that connect us to the more-than-human world. When coupled with emerging technologies, these stories deepen our understanding of what it is to be something other than human.

Marshmallow Laser Feast harness immersive VR and large-scale projections to recreate the awe we feel in these kinds of natural landscapes. Evolver explores this by shrinking our perspective to follow oxygen through our cavernous respiratory and cardiovascular systems. The meditation and massive works journeying through our body were formed from a collage of scientific datasets, including MRI and CT scans, and blood flow simulations. These were then processed through various software programs, including Houdini, commonly used in VFX in film and TV. The datasets were provided by leading scientific collaborators, including the Fraunhofer Institute for Digital Medicine MEVIS, Jennifer Garrison of Buck Institute for Research on Aging and the Allen Institute for Cell Science, among others.

For Sanctuary of the Unseen Forest, Marshmallow Laser Feast undertook ecological surveys and collected field recordings and volumetric data of the kapok tree (*Ceiba pentandra*) while embedded in the Amazon rainforest (4°02'06.8 S, 70°04'44.1 W). This data collection is part of their process for preserving endangered ecosystems and the species that live there and is critical to creating and realistically rendering the artwork. They also spent time in Sequoia National Park (36°34'58.3 N, 118°45'00.4 W) studying giant sequoia trees (*Sequoiadendron giganteum* – commonly known as giant redwoods) that you've just encountered in *We Live in an Ocean of Air*. Both trees were scanned using LiDAR (Light Detection and Ranging), which uses light and lasers to measure distance and volume. Computer graphics were then used to digitally render the trees' inner and outer systems.

## **Evolver digital medical scan asset set**

UK, 2022

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## **Giant sequoia tree field research photos and LIDAR scan images**

UK, 2016–17

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## **Kapok tree field research photos from the Amazon rainforest**

UK, 2020

# **Evolver MRI and software process imagery**

UK, 2022

GIFs, looped

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# **Evolver medical scanning and animation process**

UK, 2022

Video

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# **Breath Cycle**

London, 2018

Single-channel video, two-channel audio

Duration: 2 minutes, looped



“As technology advances, our curiosity for who we are amplifies. By exploring time, scale and space, we begin to see things from a new perspective – begin to build a stronger relationship to the world we live in and the life it sustains.”

Nell Whitley of Marshmallow Laser Feast

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“The oxygen trees exhale flows into our tree-like lungs, flowing from our heart centre outward, through fractal branching arteries to feed every cell in our body. It’s the breaths we take – anywhere between 17,000 to 30,000 a day! – that places us in constant dialogue with the world beyond ourselves. With every breath, we are enmeshed and entangled with the living world.”

Ersin Han Ersin of Marshmallow Laser Feast

“Simply being in the presence of a giant sequoia tree catalyses an experience that embeds us in planetary cycles and shared natural rhythms. If you could explore yourself, you would discover that just under your skin you are a branching being made of rivers, whirlpools and ripples in the tides of existence. Bringing the invisible into this view and exploring the symbiosis of everything can transform our understanding of the world – and how we interact with it.”

Robin McNicholas of Marshmallow Laser Feast

“Modern science is helping to reveal something Indigenous knowledge has always held to be true – that what is outside of us is not separate from us. This ancient wisdom is needed more than ever today. And it compels us to use our technology to both honour and deepen our intricate relationships with the web of beings, reminding us, with awe, that we are all but extensions of one another.”

Marshmallow Laser Feast

**Now,  
step out into the world  
and take**

**your first**

**breath**