

LARGE-PRINT LABELS

Marshmallow Laser Feast:
Works of Nature

Breath Cycle

London, 2018

Single-channel video, two-channel audio

Duration: 1 minute, 48 seconds, looped

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

Works of Nature

Humanity's dependence on the natural world is absolute, from the food we eat, the water we drink and 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

London, 2022

Single-channel video installation,
multichannel audio

Duration: 4 minutes, looped

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. 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 systems 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 systems and cycles are threatened, so are we.

To discover more about the science behind the exhibition, collect this artwork by tapping your Lens on the icon to your left.

Artist Quote

“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

Evolver: Deep Listening Meditation

London, 2022

Multichannel audio installation

Duration: 10 minutes, looped

From the forest's exhale to your body's inhale, tides of air flow through time and space, an enveloping oceanic medium, shaping us as moments of matter.

Breathing in this ocean we call air, oxygenated by the forest's outbreath, rushes in at the mouth and nose, a wind piped downwards through rivers and tributaries, a lattice of ever-branching paths where the lungs expand like a swollen river to winnow oxygen from your breath.

One river meets another.

Oxygen disperses into the blood and the exhalation of plant life flows through the streams, channeling blood to your heart.

These currents flow to the farthest reaches of the body, where each cell undergoes respiration... Oxygen and sugars both produced by plants, combine there, to become your life force, an ancient reaction releasing energy from sugars, enabling you to breathe and live.

Breathing out, the tides within us are also outside us in a harmony of opposites. Our out-breath of carbon dioxide becomes the plant's breath in...

We are all environments, walking oceans teeming with life, united by an unending rhythm that blurs the boundaries between all breathing bodies and submerges us in torrents of being.

Artist Quote

“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

Meditation instructions

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

Evolver: The Journey of Breath

London, 2023

Multichannel video installation,
multichannel audio

Duration: 14 minutes, 20 seconds, looped

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.

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?

If we could learn to see differently
We might see that we are whirlpools:
Eddies and ripples in the vast flow of life.

Evolver: The Breathing Cell

London, 2023

Single-channel video installation,
multichannel audio

Duration: 5 minutes, looped

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

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 that blood flows through 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

Clockwise: Lungs #1, Hand #1, Head, Torso, Hand #2,
Lungs #2

London, 2019

Digital prints on Hahnemühle Photo Rag paper

30 x 30inch

Edition of 5 + 3AP

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.

Evolver: VR

London, 2022

Real-time virtual reality, two-channel
binaural audio

Duration: 24 minutes

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.

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.

This shift 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 – the only proven driver of pro-environmental behaviour. It's a powerful transcendent state with personal, social and environmental impact.

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.

Evolver: The Beating Heart

London, 2023

Single-channel video installation,
multichannel audio

Duration: 2 minutes, looped

The Scale of Things Beyond Observation

In 1916, Albert Einstein predicted the existence of black holes through the equations of general relativity. 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.

Artist Quote

“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

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.

Distortions in Spacetime: The Gravitational Field

London, 2020

Video

Duration: 2 minutes, looped

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

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

Distortions in Spacetime

London, 2020

Real-time interactive installation, multichannel audio

Duration: 9 minutes, 40 Seconds

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

London, 2018–21

Video edition

Single-channel video installation,
multichannel audio

Duration: 11 minutes, 20 seconds, looped

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

Now, step out into the world
And take your first breath

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.

For *Sanctuary of the Unseen Forest*, Marshmallow Laser Feast undertook ecological surveys and collected field recordings and volumetric data of the kapok tree 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°34'58.3N 118°45'00.4W)

studying giant sequoia trees (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.

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.

Artist Quote

“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

Artist Quote

“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

Artist Quote

“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

Evolver MRI and software process imagery

UK, 2022

Looped GIFs

Evolver digital medical scan asset set

UK, 2022

Evolver medical scanning and animation process

UK, 2022

Video

Giant sequoia tree field research photos and LIDAR scans

UK, 2016-17

Images

Ceiba tree field research photos from the Amazon rainforest

UK, 2020

Breath Cycle

Breath Cycle

London, 2018

Single-channel video, two-channel audio

Duration: 12 minutes, Loop

