

Imperial College  
London

Grantham Institute  
Climate Change and the Environment  
An Institute of Imperial College London



Royal College of Art  
Postgraduate Art & Design



Fusing art  
and science to  
tackle climate  
change

22 April 2018  
Earth Day and launch.

11 July 2018  
Networking event to bring together interested  
parties from the RCA and Imperial.

24 October 2018  
Second networking event.

December 2018  
Six concepts were selected by the panel to receive the  
award of £700, and to develop and produce  
their artworks.

25 - 26 April 2019  
The Grantham Art Prize Exhibition  
Imperial College London.

20 - 30 August 2019  
Exhibition at the Dyson Gallery,  
Royal College of Art

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# Foreword



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## Martin Siegert, Grantham Co-director

As Co-Director of the Grantham Institute – Climate Change and the Environment, I am delighted to introduce this exhibition catalogue for the 2018-19 Grantham Art Prize. The Institute’s vision is for a cleaner, greener, fairer future. To help us reach this goal we contribute to, and lead on, world-class research and innovation towards effective action on climate change and the environment; and we translate academic knowledge to non-traditional audiences, particularly the public. These activities have led to a deeper appreciation of the special value of working with sectors that we would not commonly do, and the art world is a great example.

Art has the potential to inspire minds and touch emotions in a way that science alone often finds challenging. For this reason, we felt an exchange between artists and scientists would be a worthy endeavour, and might lead to a fuller, wider appreciation of climate issues and how they can effectively be explained. After a few failed attempts to merge science and art communities through workshop-style events, we launched an art prize, open to students, themed around climate and environmental change, thinking this could be the way to draw people together.

We were thrilled and amazed by the responses we received when we launched the prize. Dozens of high-quality applications were received, representing a huge variety of both climate issues and artistic media. The immediate challenge we faced was how to select just six winners that would be offered funding to turn their concepts into a reality. We are therefore grateful to the judges of the art prize for the time and enthusiasm given to the selection process.

What resulted was an amazing showcase of how art can add to the messages from climate science. Art offers us time to reflect deeply on environmental concepts, and consider how climate change is affecting us through a lens specifically focused to influence human reaction and experience.

We feel the Grantham Art Prize was unequivocally successful in this regard, and we are very pleased to offer this catalogue as a record of the winners of the inaugural competition.



# Introduction

## Context of the competition

In celebration of Earth Day 2019, the Grantham Institute - Climate Change and the Environment and the Royal College of Art have teamed up to present the Grantham Art Prize - a dynamic exhibition showcasing the six winning artworks of their joint open call.

Contemporary art students from across the UK were invited to collaborate with Imperial College London's leading climate and environmental researchers to propose new, interdisciplinary artworks that spark meaningful contemplation and conversation about climate change, one of the most pressing issues of our time.

Funds were awarded to develop and realise the six winning concepts, chosen by an esteemed panel of jurors:

**Professor Maggie Dallman OBE, Vice- President of Imperial College London**

**Professor Juan Cruz, Dean of Arts & Humanities at the Royal College of Art**

**Professor Martin Siegert, Co-Director of the Grantham Institute**

**Julian Melchiorri, Artist, Inventor and CEO of Arborea**

As supporters of the role of socially engaged art in environmental activism, this inaugural competition and exhibition to merge art, science and culture to create works that would serve as an urgent call to action in realising our collective agency as global citizens in the fight against climate change.



# Climate Exchange

Highlights from panel discussion





## Chair

Alison Tickell,  
Founder of Julie's Bicycle



## Speakers

Peter Kennard,  
Contemporary Artist and Professor  
of Political Art at the Royal  
College of Art



Alice Bell,  
Co-Director of 10:10 Climate Action



Arnaud Czaja,  
Reader in Physical Oceanography  
at Imperial College London

Alison Tickell:

“Many of the Grantham Art Prize works have been created through collaboration, which is an incredibly important quality that we all need to bring into the climate action space. It was fantastic looking at the exhibition. In these works, I think we can see what art, design and science, alongside imaginative collaboration, can bring in the pursuit of a shared purpose.”

Peter Kennard:

“The artworks look superb. They’ve taken actual science and turned it into an artform. I think this is something that’s really building up now: artists visualising the science. Visualisation to me is vital because we respond emotionally to something we see. Data, in itself, does not translate into an emotional response and that’s where art comes in.

“Visual works about climate change or environmental breakdown should communicate outside an art audience, and I think the works of the Grantham Art Prize do this. When we are living in a state of emergency art should, without simplifying it or turning it into propaganda, make the issues understandable to all people. I like the work here because it’s using quite complex science, visualising it and communicating with all sorts of people who are concerned about it.”

Alison Tickell:

“When discussing art and climate change, we need to answer a couple of important questions: What can arts and culture do to extend and change perspectives? And how can we support artists and scientists to work together and strengthen the social context that will evolve into systemic and profound change?”

“The Grantham Art Prize is all about: crossing divides, expressing meaning in new ways and celebrating the very deep symbiosis between the arts and sciences”

- Alison Tickle



“The timing of this conversation couldn’t be more perfect. As people cascade onto the streets and through the digi-sphere in response to miserable and bewildering news, the sparks of awareness that this is a planetary emergency are beginning to ignite. There’s an incredible energy that is currently fizzing throughout society, and arts and culture need to go and meet it.”

Peter Kennard:

“I agree, after the recent demonstrations the Mayor of London, Sadiq Khan said: ‘alright, now it’s back to business as usual,’ which I thought was a strange thing to say. There is this idea that people will cause a fuss and then it’ll all go away again, and we can go back to the anaesthesia of everyday media. However, sometimes art can put a stop to that.

“John Berger once beautifully said, ‘The strange power of art is sometimes it can show that what people have in common is more urgent than what differentiates them,’ and I think that’s absolutely true about the impending environmental disaster. It is bringing people together to realise that we have to think less about what we individually own and move away from capitalist ideas. Tackling these issues will involve a whole systemic change.”

Arnaud Czaja:

“Personally, as a climate scientist, I’ve become aware that our work cannot be purely about the thing that one studies. Through events like the Grantham Art Prize, and by being exposed to other areas of arts and culture, I’ve realised my research is just one tree in a large forest.

“In the sciences, there is this sense of a silent community, and the arts has this amazing ability to completely explode that and show you that your research is actually part of something much bigger. By listening and interacting with people, the quality of the ideas that come up are much more interesting and actually have a lot

“We’ve got to visualise the issue, and that comes through scientists working with artists”

- Peter Kennard



more purpose, making scientific work much, much richer.

“The difficulty is that when scientists work in one particular area, they become very technical about it because they are so rooted in that certain branch of science. But the people who have been out there, really ringing the alarm bells and being extremely clear about the implications and size of the crisis, have been people who are not necessarily rooted in hard science at all.”

Alice Bell:

“It is often said that we can speed up action on climate change if we all just talk about it more, but it can be very difficult to talk about. It’s not obviously in front of us, so we need science to be able to see it; and it can also be, for understandable reasons, something we want to avoid talking about because it’s painful, we might feel guilty and we might also think it’s easier if we just don’t have to worry about it.

“There are also various forces at work working throughout our culture that actively stop us from talking about it. Yet, discussion is an incredibly powerful tool - it can help people deal with the grief and the pain, but it will also stop the politicians from getting away with doing nothing about it. Art can help us start the discussion, projects like the Grantham Art Prize make it easier for all of us to talk about climate change, and it is vital that we get better at it quickly.”

Arnaud Czaja:

“I think there is a huge potential amongst scientists to engage with people through art. In the past, I’ve been quite reluctant to talk about the implications because I’m always very careful, clinging to my error bars, but there are some basic things that we can and should communicate to the public from simple physical principles and observations about our planet. I think there is quite a big untapped source of help from the scientists who are comfortable to





“But the people who have been out there, really ringing the alarm bells and being extremely clear about the implications and size of the crisis, have been people who are not necessarily rooted in hard science at all.”

- Arnaud Czaja



go beyond the very technical ‘error bar approach’.”

Peter Kennard

“We’ve got to visualise the issue, and that comes through scientists working with artists, or artists studying the scientific work. Climate scientists are doing amazing work and its vital for the planet.

“I think the role of the artist is to make this information available in a way that will help people to think about it, insisting we don’t just see something on the surface but actually think about it and get emotionally involved in it.”

Alison Tickell:

“Climate science and culture speak to each other all the time - it’s a seamless conversation, but we’re not hearing it. This is what the Grantham Art Prize is all about: crossing divides, expressing meaning in new ways and celebrating the very deep symbiosis between the arts and sciences, put to a purpose.

“While art seeks to create or vitalise meaning - often through metaphor - science presents us with an account of the world, and design uses methodologies that focus on problem solving and behaviour change. The intersection of art, science and design, is a vital place - perhaps the balancing point for change. But, following this event, we need to continue to think about how we scale and accelerate this work, as exemplified by the winners tonight.”



“Projects like the Grantham Art Prize make it easier for all of us to talk about climate change, and it is vital that we get better at it quickly.”

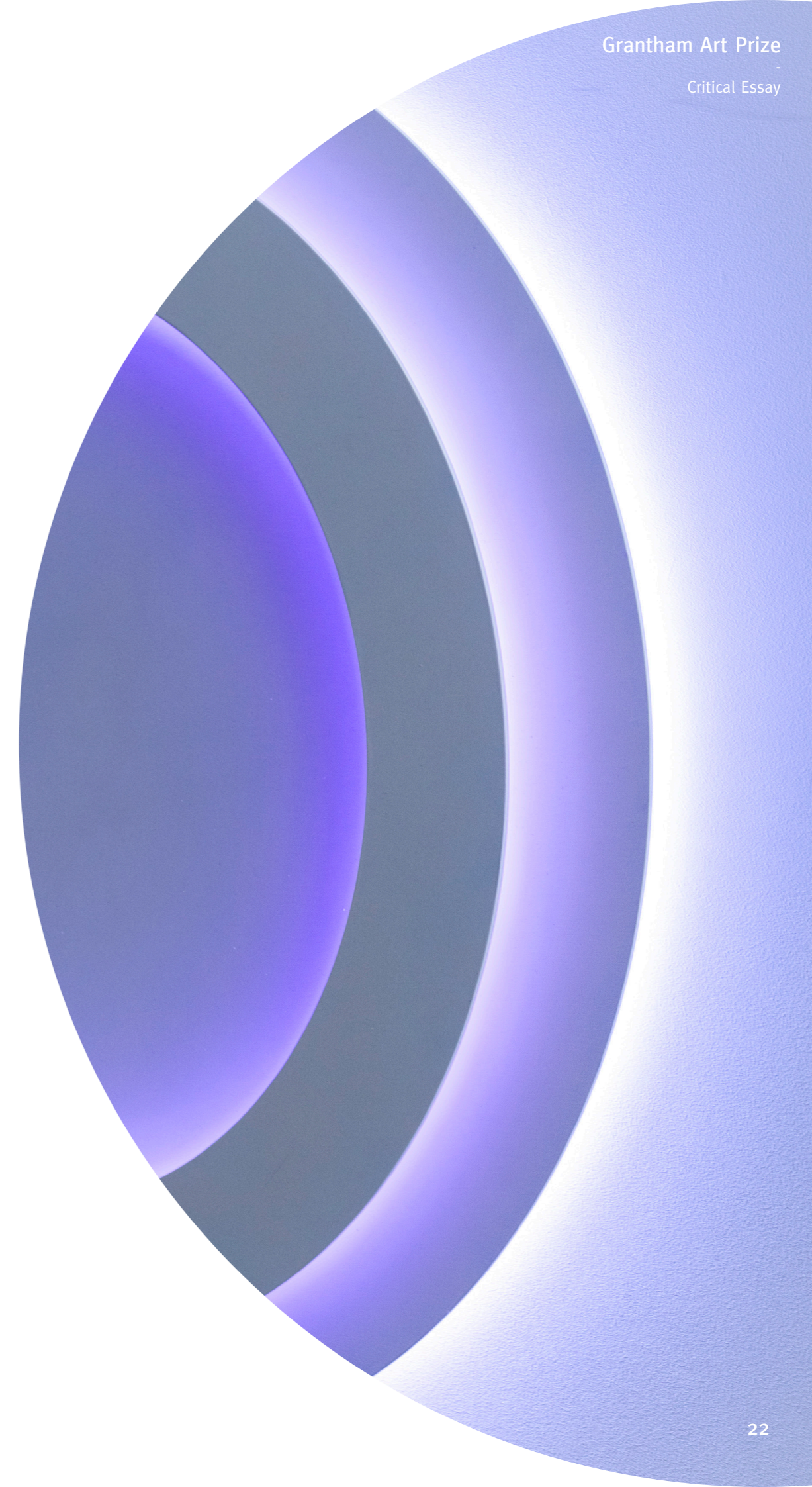
- Alice Bell



# Critical Essay

“The hopeful tipping point”

By Andy Franzkowiak



## Andy Franzkowiak

### Creative Producer & Director, Shrinking Space

We need a hopeful tipping point when it comes to our relationship with nature.

Recently a few headlines amongst the gloom have provided us with shining lights such as Pakistan and Madagascar planting millions of trees, employing those affected by the pandemic and responding to the environmental crises of our time. Hope-full action is out there and is accessible to all.

However, three football fields of rainforest are lost every minute according to satellite data and imagery. Visual imagery we can all witness, indeed feel, making real for each of us in our living rooms the ever-more rampant Amazon logging and fires that are bringing us closer to an environmental tipping point. Last year scientists Lovejoy and Nobre argued that if we continue on our current trajectory then we are 10-15 years from this tipping point, where the degradation of the complex Amazonian system, from soils to rain to biodiversity, pushes, at the hands of humans, from rainforest to savanna. The global knock-on effects that would occur if this tipping point were reached, should energise each of us to take action, and push the biggest transgressors to stop before it is too late.

Tipping points are thresholds which if passed, bring about rapid, cascading changes to systems that could mean collapse, transcending from one paradigm to another. The phenomenon is frequently used to explain the current direction of travel for environmental systems; deforestation, ocean acidification and arctic melt could all have catastrophic effects across our planet if tipping points are met. As we continue edging towards these tipping points and public awareness of the risks increases, individual action to tackle climate change can seem somewhat hopeless – the worst

“Through these endeavours, we can turn the tide not just of public opinion and behaviours but demonstrate action needed to pull back from the hopeless tipping points.”

- Andy Franzkowiak



piece of PR that happened in the climate debate was that no one person can make a difference, Greta Thunberg and the schools climate strikers have thoroughly debunked that notion.

Collaborations across research, knowledge-sharing, critical thinking and creativity can create a cleaner, greener and fairer future, through accumulating local and global action.

At the intersection of these things, we find art and science collaborations. These collaborations can bring about a hopeful tipping point borne from comprehensive climate emergency visibility, community action and hopeful narratives. Through these endeavours we can turn the tide not just of public opinion and behaviours, but demonstrate action needed to pull back from the hopeless tipping points.

The ultimate challenge this prize set the art and science teams is to inspire action to address climate change. So, does this iteration of the Grantham Prize do this? I hope so, we will only know if we manage to limit ourselves to 1.5 degrees warming. But what is the wider cultural landscape to which these works are adding their own weight towards a hopeful tipping point of individual and societal action?

Great art changes you, stays with you beyond the societally compartmentalised walls of the gallery, the stage or away from your TV screen. It asks you to imagine yourself differently in this dynamic, omni-buzzing planet. Exhibitions, such as this, can be bold places where a variety of perspectives and wide-ranging stories can meet, creating a powerful, global landscape. The works in this show are made stronger by that simple statement from Fernanda Dobal and Alison O'Reilly (page 16). The experiencing of other ways to behave and offering ways to participate in this hopeful, transformational story creates space for everyone to feel part of the solution, the human community coming together.

The artists in the Grantham Prize offer wide-ranging conversation topics, from the fragility of the iconic Yoshino Cherry Tree (Page 26) to the loss of ice from the Pine island Glacier (page 18) – but what

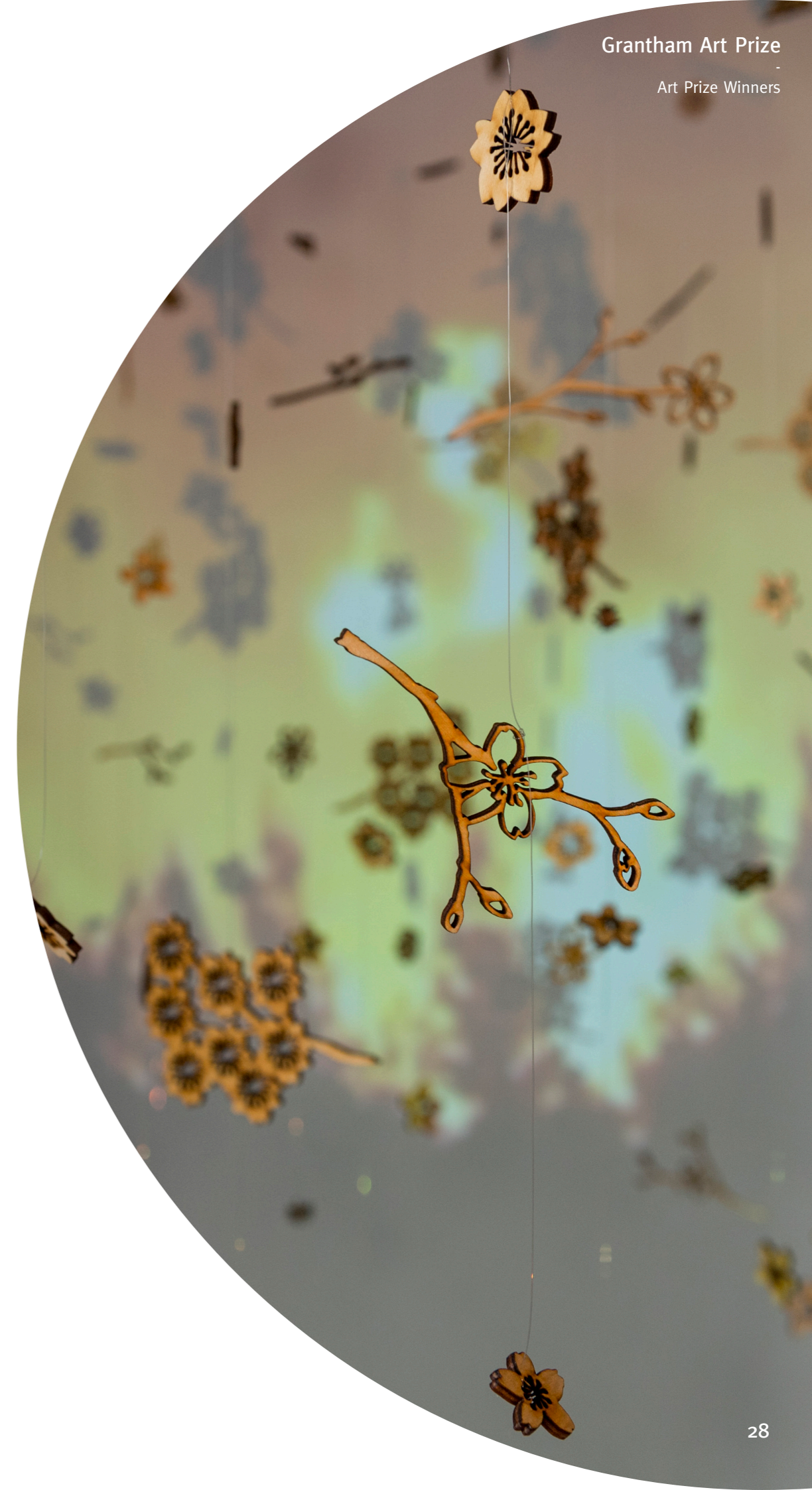
I like most is the statement of personal intent that goes with Planet Greenhouse (page 16). As we all learn about the consequences of our actions, we must be willing to act. People are inspired by their peers, and hopefully this tipping point brought by peer-to-peer action can garner a movement in which the future imagined by The Labyrinth (page 20) is not realised.

The Labyrinth is also interactive, an experiential genre to which art and science collaborations readily lends themselves, particularly if you want to reinforce meaningful learning, allowing participation in the narratives. In the climate emergency narrative, we, particularly in the Global North, are absolutely at the story's centre, and so we must act. Another huge strength of the works on display is the poignant introduction of smell by Michiko Yamamoto, Dr Kris Murray and Sonia Tiedt (page 26), an often-overlooked sense artistically, but one that evokes complex, transcendental emotions in the visitor.

The wider cultural landscape is now one of climate emergency, with a flourishing, creative network of emergency declaring industries. This landscape includes science, with all its inherent creativity and critical thinking. Can the power of expression bring about a change in political will and help empower local, community action? Climate change is finally being given serious mainstream airtime from an Olafur Eliasson exhibition at Tate Modern, to the BBC's Climate Change: The Facts programme. The sum of this transdisciplinary cultural visibility is a UK population that feels its government is not doing enough, according to a recent ComRes survey.

The Grantham Prize is an invaluable part of this landscape, of this narrative that bridges the artistically experiential and real. Science and art projects can approach an urgent conversation with subtlety or a sledgehammer, sometimes both at the same time, as is evident in the works in this show. Society, locally and globally, needs experiences like this to reinforce the work we all need to do, and what is at stake, at least until we reach the hopeful tipping point.

# Grantham Art Prize Winners





### Planet Greenhouse

Fernanda Dobal and Alison O'Reilly, with support from  
Professor Joanna Haigh CBE



### Pine Island Glacier

Melanie King, with support from  
Professor Tina van De Flierdt



### The Labyrinth

Qiaer Jin and Zhengyi Zhang



### The Outside Inside

Johanna Schmeer  
in collaboration with Sam Conran



### We Are You

Miyuki Oka and Barna Soma Biro



### Yoshino Cherry Tree

Michiko Yamamoto, Dr Kris Murray and  
Sonia Tiedt

## Planet Greenhouse

**Fernanda Dobal and Alison O'Reilly, with support from Professor Joanna Haigh CBE**

Greenhouse gases are essential to sustaining life on Earth, yet they are also responsible for climate change. Investigating how both these seemingly contradictory statements can be true is what inspired designers Fernanda Dobal and Alison O'Reilly to create Planet Greenhouse.

This light installation uses colour to visualise data from the NASA Goddard Institute for Space Studies on the average global temperature anomalies from 1880 to 2036 - the year we are expected to hit 1.5°C of global warming with the current rate of carbon emissions. 1.5°C is the 'safe' limit of climate change, as agreed to by the Intergovernmental Panel on Climate Change, and is the level under which we can avoid the worst impacts of climate change.

Fernanda and Alison invited the viewer to learn about the effects of greenhouse gases on climate change and to consider what actions they can take to secure a sustainable future. They have committed to offset the emissions of Planet Greenhouse itself by changing their own behaviour and contributing to reforestation efforts.

### Artists biographies:

Fernanda Dobal is interested in how technological development is changing our (human) relationship to nature. In her work she explores how design can be used as a tool that engages people of all ages with nature and science.

Before becoming a designer, Fernanda worked for several years at Zearn.org, a New York City based non-profit educational technology company whose mission is to make an excellent maths education

accessible to all. While there, she discovered the power of design to engage and focus learning.

She is currently in the process of completing her masters in Global Innovation Design (GID) at the RCA and Imperial. Previously she studied at the University of Pennsylvania where she received a BA in Philosophy, Politics, and Economics.

Alison P. O'Reilly is interested in the intersection between aesthetics and ethics. Her research explores the role of style in sustainable design of the built environment, and how these aspects might be affected by the growing field of generative design. As a practitioner, Alison's ambition is to develop and deliver innovative, environmentally sustainable and socially responsible design solutions, in the most beautiful way possible, for application within the built environment.

Before joining Global Innovation Design (GID), Alison spent 10 years leading commercial interior design projects for a wide range of commercial clients in both Canada and the UK.

### Scientist biography:

Professor Joanna Haigh CBE is a British physicist and academic. Before her retirement in 2019 she was professor of Atmospheric Physics at Imperial College London, and Co-Director of the Grantham Institute. She is a former head of the Department of Physics at Imperial College London. She is also a Fellow of the Royal Society, and a former president of the Royal Meteorological Society. Joanna is known for her work on solar variability, and also works on radiative transfer, stratosphere-troposphere coupling and climate modelling.







## Pine Island Glacier

### Melanie King with support from Professor Tina van De Flierdt

Using images taken by the NASA Earth Observatory, Melanie King presents a series of anotype prints of the Pine Island Glacier in West Antarctica, showing the calving of the B46 iceberg. This iceberg covers an area of 71 square miles, three times the size of Manhattan. Therefore its detachment significantly contributes to rising ocean levels and is a clear indicator of warming in the Arctic. Melanie intends to draw the viewer's attention to this tragic and monumental event by highlighting the exact rupture point where the iceberg broke away from the glacier.

An anotype is a type of photographic print produced by a 19th century, environmentally friendly printing technique. Plant matter, such as beetroot or spinach, is first combined with alcohol and used to coat a sheet of paper. Once dry, a negative is placed on top and the print is left to be bleached by sunlight over many weeks. Just as gradually as it came into existence, the image will also fade away over time, reflecting the instability and uncertainty of our environmental future.

#### Artist biography:

Melanie King is an artist and curator with a specific focus on astronomy. She is co-Director of super/collider, Lumen Studios and the London Alternative Photography Collective. She is a lecturer on the MA programme at the RCA, and on the BA Photography course at University of West London. Melanie is a part time doctoral student at the RCA.

Melanie's solo exhibitions include Leeds Art University and the Blyth Gallery. She has exhibited in group shows at the Photographers' Gallery, Argentea Gallery, Guest Projects, Space Studios and the Sidney Cooper Gallery. Melanie has also exhibited in a wide range of international galleries, such as the Williamson Gallery in Los Angeles, CAS Gallery in Japan and Unseen Amsterdam. Melanie has attended residencies organised by Bow Arts, Grizedale Forest and SIM Reykjavik, Iceland.

Melanie has been involved in a number of large scale commissions, including Green Man Festival, Vivid Projects, Bompas and Parr X Citizen M Hotel, Mayes Creative, Design Miami x COS Stores, Chelsea Flower Fringe and the Wellcome Trust.

#### Scientist biography:

Professor Tina van De Flierdt is an isotope geochemist at Imperial with a background in geology and a passion for understanding how our planet earth works. With human-induced climate change being one of the defining issues of our time, she is particularly driven to utilise the geochemical toolbox of elements and isotopes to discover how the earth reacts to changing environmental conditions, now and in the past. She has won numerous honours and awards, including the Fellow of the Higher Education Academy, Antarctic Service Medal and the Storke Doherty Lectureship, Department of Earth and Environmental Sciences and Lamont-Doherty Earth Observatory at Columbia University.





## The Labyrinth

### Qiaoer Jin and Zhengyi Zhang

Intrigued by the concept of the ‘climate refugee’, contemporary artists Qiaoer Jin and Zhengyi Zhang put forward that climate change has a systematic and catastrophic impact on human life. Not only does it cause a rise in global temperatures and sea levels, climate change poses long-term challenges on the very fundamental resources upon which our lives rely on; access to clean water, energy and nutrition. By constructing a fictional future in which humanity has suffered this apocalyptic crisis, The Labyrinth explores the fatal challenges that climate changes presents.

Due to the shortage and subsequent competition of natural resources in this speculative future, strong attention to resource ownership raised. Walls and borders are built to divide and claim these resources, reducing nature to its mere utility. More and more partitions are built until eventually the entire planet is turned into one gigantic ‘labyrinth’ with no way out; a trap of their own making.

Displaying the films on suspended monitors and constraining the ways an audience engages with the content, creates an imposing experience whilst confronting the viewer with the inevitable, uncomfortable future that lies ahead, unless our behaviour as a global community is dramatically changed.

### Artist biographies:

Qiaoer Jin is a London-based artist who holds a BA degree in majors of architectural design and visual arts from the University of Toronto. Currently, she is pursuing an MA degree in Fine Art at Chelsea College of Arts (UAL). Jin primarily works with time-based media such as moving image and sound installation. The relationship between human being and nature has been a consistent theme of Jin’s artworks. Her projects primarily concerned how human being interacted with nature and impacted their surrounding environment. Recently, she has been exploring the topic of post-humanism through fiction and documentary.

Zhengyi Zhang has a BA degree and an MA degree in sculpture from the Beijing University of Technology. Currently, he is pursuing an MA degree in Fine Art at Chelsea College of Arts (UAL). Zhang’s works primarily focus on social issues and imagining the future of humanity. Through sculpture, installation and time-based media, mostly video, he tempts to explore the topics of life and death in his imagining future of humanity.





## The Outside Inside (work in progress)

Johanna Schmeer in collaboration with  
Sam Conran

Johanna Schmeer's ongoing project, The Outside Inside, prototypes a cyborg ecology in which plants and their interactions with potential future environments can be tracked and experienced.

In the Grantham Art Prize Show, the project consists of three microenvironments which simulate environmental conditions of the year 2100, based on the UN's predictive scenarios. Amaranth plants, known for their ability to thrive in extreme conditions, grow in saline soil, exposed to higher CO<sub>2</sub> levels, heat, and drought.

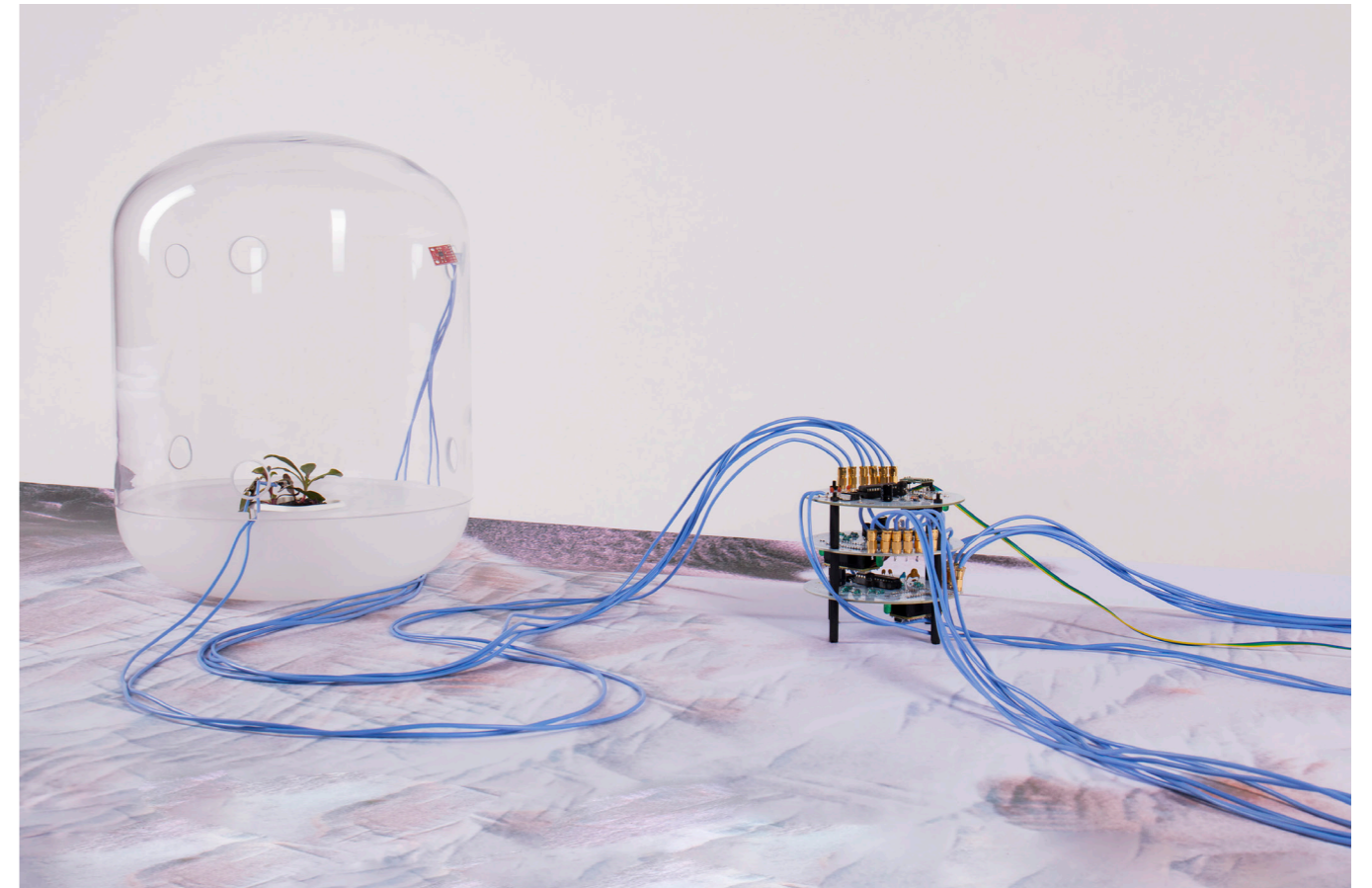
Environmental and capacitance sensors track the plant activity, which is converted into a soundscape, audible via headphones. Edible amaranth flowers were harvested from the plants and made into tea, allowing visitors to ingest potential futures, since altered environmental conditions are known to change the biochemical composition of plants. The project aims to create a multi-sensual, visceral experience for the visitor, highlighting the entanglement of humans, plants, ecologies, and environment.

### Artist biography:

Johanna Schmeer is an artist and designer. Her work focuses on hybridity and interactions between the 'natural' and the 'artificial' - asking questions and discussing ideas related to technologically augmented ecosystems, new materials, and extensions of the self.

Johanna's work has been published, awarded, and exhibited internationally, including recently at the Museum für Kunst und Gewerbe (Museum for Arts and Crafts), Hamburg; the Nationalmuseum, Stockholm; the Venice Biennale; and Ars Electronica Center, Linz. She is currently a PhD candidate in Innovation Design Engineering at the RCA.





## We Are You

### Miyuki Oka and Barna Soma Biro

One of the biggest social threats to marine ecology is the disconnect in space and time between people's behaviour and the corresponding consequences of their actions. Yet, unbeknownst to most, we rely on this wondrous underworld for survival. By confronting the viewer with the devastating phenomenon of coral bleaching, Miyuki Oka and Barna Soma Biro hope to reestablish this close connection.

Hard coral was grown on a 3D printed clay human head. Whilst alive and healthy the coral fills the sculpture with vitality, energy and colour. However, as water temperatures rise reflecting global warming, corals release the symbiotic algae living in their tissues as a stress response. This leaves behind a white calcareous skeleton on the sculptural facade, reminding the viewer that as coral loses vibrancy, so does humanity.

#### Artist biography:

Miyuki Oka is an MA student studying Information Experience Design at the RCA. She studied environmental biogeochemistry and earned a bachelor's degree of bioscience and chemistry from Hokkaido University, Japan. She has a strong interest in the natural ecosystem and its relationship with human beings. She is interested in the information that living things, organic materials and natural phenomena have and often uses them in her works. Miyuki has also engaged in science communication using various media, such as music and VR.

#### Scientist biography:

Barna Soma Biro is a third-year undergraduate student studying biological sciences at Imperial. His areas of interest within biology are evolutionary and developmental biology as well as taxonomy and biodiversity. Barna has a strong interest in architecture and design as well. His goal is to continue his studies in the novel field of biology-inspired design and to pursue a PhD and a scientific career in this area of research. Outside of academia, Barna also enjoys learning about linguistics. He is one of the local organisers of the Hungarian national qualifier competition for the International Linguistics Olympiad.







## Yoshino Cherry Tree

### Michiko Yamamoto, Dr Kris Murray and Sonia Tiedt

The Yoshino cherry tree is widely known as the most common of all cherry trees in Japan and across the world, including those found in Washington, USA. However, what most people are unaware of is that these iconic trees are in fact all clones of one another and therefore highly vulnerable to new diseases and changes to insect populations that result from climate change. Through this multimedia installation, Michiko Yamamoto seeks to raise awareness of the importance of plant biodiversity and international cooperation in the fight against climate change.

In this diorama-like installation, moving images of weather phenomena and other issues caused by climate change are projected onto suspended laser-cut wooden cherry blossoms. The burned smell from the laser-cut wood pieces creates an atmosphere reminiscent of the forest fires caused by global warming. The traditional hand-printed book is made from a series of both laser-cut and hand-cut plywood boards. It illustrates how these trees were cloned and planted in the burnt-out areas of Japan after the Second World War, and concerns for their present decline.

#### Artist biography:

Michiko Yamamoto was born in the Shizuoka prefecture of Japan, historically marked by its natural beauty. Yet, as human impact transformed this landscape in the name of 'progress', Michiko has developed a long-standing interest in environmental issues. Michiko has devoted her art practice to reflect the research she conducts with scientists in order to raise environmental awareness. Combining scientific discovery with a visual curiosity, she portrays her world poetically through installation, moving image, sculpture

and printmaking.

Currently, Michiko is a MA Fine Art student at the University of Leeds. She holds a Bachelor of Fine Arts from the University of Pennsylvania and a Certificate of Fine Arts from the Pennsylvania Academy of the Fine Arts. Her work has received prestigious recognition, selected for such awards as the Pennsylvania Governor's award and the J. Henry Schiedt Memorial Travel Scholarship. It is also included in the Permanent Collection of the Pennsylvania Academy of the Fine Arts.

#### Scientist biographies:

Dr. Kris Murray is an ecologist with interests that fall at the interface between environmental, animal and human health. His research generally focuses on looking at the ways in which environmental factors combine with social factors to mediate infectious disease risks in wildlife and people, and how infectious diseases impact or threaten biodiversity.

Sonia Tiedt is a PhD candidate at the School of Public Health and the Grantham Institute. Her research explores the patterns and processes governing the distribution of infectious diseases globally. Despite their serious threat to global health and biodiversity, these remain surprisingly poorly understood. She is particularly interested in the origins of infectious diseases, the mechanisms driving their emergence in novel locations, and the effect global change will have on these patterns.





# Get involved

In 2007, the Grantham Foundation for the Protection of the Environment made the visionary decision to support an Institute at Imperial to provide a vital global centre of excellence for research and education on climate change. Today, the Grantham Institute is established as a leading authority on climate and environmental science.

The Grantham Institute is one of Imperial's six Global Institutes established to promote interdisciplinary working and to address some of the greatest challenges faced by society. We drive forward discovery, convert innovations into applications, train future leaders and communicate academic knowledge to businesses, industry and policy makers to help shape their decisions.

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