Art, Science and Visual Thinking

2022 Showcase



Ariyel Feasey

In looking into various diseases affecting crops of potatoes grown in Scotland, I became interested by some of these infections that have a cyclical process. One such disease comes from a fungi-like organism, Phytophtora Infestans, which causes Late Blight in potato crops, often with devastating effects as seen in the Great Famine of Ireland in the 19th Century.

I have aimed to illustrate how the organism spreads from plant to plant with its infection cycle through an old method of animation- thezoetrope- which lends itself to looping animation, emphasising this repeating microscopic process.I have always found pre-cinema inventions like the zoetrope really fascinating, and I hope that it communicates my research in an engaging way to others.

Animation



Katy Rigby

This work is an exploration of the relationship between the internal and external body. I began by researching Vesalius' De Humani Corporis Fabrica, an illustrated 16th century text that explores anatomy through metaphor and physical truth. The Fabrica simultaneously depicts the body anatomically and artistically, providing a profound understanding of ourselves through the lens of science and art.

Influenced by the experience of observing cadavers during dissection, I want to convey how such literal insight into the body can provide insight into ourselves. I am exploring the human form and deconstructing it into its mechanical components. I chose to focus on the heart and its internal physicality: tension, friction, expansion, and contraction. I developed how I could capture this sense of movement and intensity through printmaking and multi-media animation.



The resolved work is a combination of sculpture and animation. The piece is purposely dimensional, used to represent what is seen and what is felt.

Art & Philosophy



Robyn Scanlan

This living sculpture portrays the negative impact the industrial emissions Scottish whisky distilleries have on our 'artificial human' and 'natural' world through biodeterioration. I started an aesthetic investigation into what is the elusive "whisky black' organism and its effects using photographic images and gathering samples from local distilleries. The whisky maturation process appears to cause dying trees, soil erosion, excessive lichen growth and strong smell of Sulphur and a black organism that appears to spread via the wind. The unidentified or wrongly labeled organism has been very difficult to culture within the lab, and continues to spread over surrounding homes, fields of livestock and crops, water sources and into the air: in one instance up to 500metres in each direction from the center of a distillery. The impact of the whisky industry has yet to be fully and independently investigated, and it had been difficult to collaborate with scientists on this project due to the monopoly whisky distilleries have over Scottish life.

Digital Interaction Design

Logan Cosgrove

It is an art set made from natural and recycled materials. There are two colours of watercolour paint, made from stone pigments, sandstone and clay.A paint brush made from dried grass. Charcoal made from willow. And three colours of crayon made from beeswax and walnut oil, with charcoal as one pigment, sandstone as the other and dried gorse as the third. The paper is hand made from recycled paper from the studio and the cardboard box is made from scrap cardboard from the studio too.



The idea is for schools to make their own art set with limited tools, as the point would be to do it themselves to learn about science and art, while doing, and then can make art with the art set.

Rachel Middleton

In this day and age, we encounter single-use plastics every day and don't really care about what happens to them once we're done. However, almost all of the public is blind to the outcome of all this waste.

For years, the media has encouraged that recycling will stop all of the plastic waste that ends up back in our environment. That is not reality. Less than 20% of



all plastics we throw away end up getting recycled, where the rest end up in the landfills they're promised not to go to. Ending up in nature, spreading like an infectious virus, I wanted to illustrate this phenomenon.

'In Plastic Hortus' is a physical puzzle exhibit, containing a grid of 15 boxes which can be slid around and moved. Each box contains a stage of the Giant Hogweed's growth, made of recycled plastics, or an empty plot



where the plastic has stunted the growth. The Giant Hogweed is an infectious weed in the UK, spreading like wildfire and harmful to remove unless done properly. The same can be said for the invasion of waste plastics in nature, which no single person can solve on their own.

The user is tasked with reiterating the plastic garden, moving the order of the boxes, but can they truly solve the problem at hand?

Fine Art

Aiden Robertson

Working in tandem with my studio practise involving the biological and mechanical, my focus for this module explores mathematics, form and structure within natural organisms and combines humanity within.



Visiting the D'Arcy Thompson Museum allowed me to analyse patterns. I looked at his theories of creature's mathematical geometry changing in a short time based on acted forces. I observed the bones and structures of other plants and creatures, comparing them to our own. I found particular interest in thearchitecture of undersea exoskeletons and shells.

Inspired by research fields involving multicellularity, perspective at closer scale, as well as patterns and repetition within natural processes, I aim to draw defined attention to similarities we share with our environment and other living organisms.We are a much more overwhelmingly intricate jigsaw than we first seem, particularly at a cellular scale; rather than one 'unit', as often perceived. This gives me a strange comfort.



Nature is both seemingly mathematical planned and yet rather chaotically put together, almost like how we function as a species helped by technology. Throughcreating a crossover by the use of digital techniques, as well as organic forms I have explored a juxtaposition between both our selfishly perceived separation, yetdeep connection to even the most unusual natural growth.

Alice Snowdon

In this project I have been looking at art, mental health, and catharsis. Within this I have taken an expressive but calculated route with my making process, I have been noting and analysing my moods from day to day and making work based on the emotions. This has taken the form of pottery, expressive painting and mark making. I wanted to use pottery as exposure therapy as I wanted to explore a method I didn't know, nor felt comfortable with to allow myself to be bad at new things, throughout this process I monitored my anxiety levels and improvement. I also wanted to use clay as a cathartic tool through the manipulation of the material to explore emotion physically. Using myself as a subject to explore catharsis within art has been very helpful to me, my mental health and making process as I have been present and analytical about both my mental state and the work I am making.



This final installation brings together a range of materials and approaches: whole clay pots (glazes to emulate my expressive mark making work), my smashed and reassembled pots, representational slip casts with text and my expressive paint-ings.



Beth Nettleship

My focus for this project was the developing brain. Specifically, how interaction plays a role in the brain creating new connections. To show this I have created an interactive sculpture that is tactile and lights up when it senses noise. The pinecone shape shows the idea of a growing seed. Similar to the brain's pineal gland in shape and reactiveness to light, it's various layers can change depending on its environment. The pinecone umbones images are of stem cells which react to a change in their environment to become what is needed.

> This work originated in the Botanic Gardens where I found parallels between nature and the human body. I collected fallen pinecones as symbols of growth and potential, a wooden case protecting its seeds. In warm dry weather the pinecone opens-up as this is a good environment to grow in. Whereas in cold wet conditions it closes-up. How this pinecone is interacted with effects how it responds. It reflects the brain and how with enough stimuli new connections can be formed. Talking to plants helps them grow and reading stories to children helps them build communication.

The sculpture encourages a curiosity and invites the viewer to interact with it.





Emir Elisa Rizzato

Within my practice I strive to find meeting points with people. I want to reach people by mutual understanding and common ground, and affront themes that are often left ignored.

For this project I have focused on the role of the artist as vessel for a bigger meaning, I realize that art can raise awareness about serious topics, in this case for science, specifically air pollution.

I want to make this information accessible to everyone, public knowledge that everyone should realize the gravity of.



I have come up with this aura like shape that resembles our surrounding atmosphere, transformed by all the polluting particles that damage and have negative effects on our health. In fact, living and breathing air in the city consists of introducing into our body these chemicals that can cause various health conditions. such as different cancers, respiratory conditions, circulatory conditions and many more.

This will hopefully help people realize how we are the ones damaging our own health with our lifestyles.

Evie Rose Thornton

I have been investigating the relationship between humans and their natural environment, more specifically I have set out to question our desire to curate spaces of natural resources to create an aesthetic environment, regardless of the cost to its ecosystem. My work explores the negative connotations of deadwood and aims to critique our views on its visual and useful properties.

After our trip to the Dundee Botanic Gardens and through conversations with the garden's curator Kevin Frediani, I have utilised scientific papers on deadwood to develop a body of work that explores presumptive and knee-jerk reactionary language traditionally associated with forest management and used this to create visual responses that question these prejudices. The focal point of this work is deadwood, from which grows new life in the form of elf cup mushrooms, which in turn is made from the very material from which it grows: deadwood.

This piece aims to challenge our preconceptions about the aesthetics of deadwood and proposes to question our own relationship to the cyclical nature of life and death. This is a monument to the unseen environments that exist outwith our everyday experience, working in concert to ensure its own survival, consequently ensuring our own.



Jen Meldrum

I am a fine art student predominately working in mould making and casting. Using alginate, I take moulds of my body and cast them with plaster. The casts are eerily realistic, capturing every dimple and fold of the flesh. The parts of the body are cast in isolation, then combined.



My work this semester is an abstract response to my research into the digestive system and specifically my research into the effect of eating disorders on the physiology of the body. Society conditions women to believe that to be desirable they must conform to an unrealistic and ultimately unhealthy perceived standard of beauty. Woman can feel pressured to strictly control their diet to achieve the perfect body. These restrictive diets starve the body of essential nutrients and often results in a starve binge cycle of disordered eating. The pursuit of the size zero body encourages aesthetic desires over the functions and processes required to power the body and maintain health. The effects of the nutrient depravation on the body are overlooked in the struggle to be thin enough. This neglect of the body causes mental turmoil and lasting physical damage to all of the body, including the digestive system.

Katie Morris

Through my use of contemporary technology, I have explored DNA, biological anthropology and primatology within my work.As a collaboration with artificial intelligence, I utilise deep learning algorithms alongside other digital techniques to visually and artistically traverse my ideas regarding science.





My initial focus on DNA derived from my realisation that DNA and artificial intelligence are connected-both consistently contain instructions vital to producing a desired result.By generating images using artificial intelligence, Ihave explored evolutionary paths based on the hypothetical concept of human beings evolving to resist radiation.With the aid of evolution, the scorpion has become one of the creatures on earth most resistant to radiation. My ideas are accurately portrayed by visually evolving images using artificial intelligence. I made use of several deep learning algorithms to developa series of artworks depicting my imagined amalgamation of the human and the scorpion.

Taylor Grisenthwaite

My project was delivered through communication with a scientist. They would be doing their lab work and I would spectate, observing how could I translate this work into my own practice. Whilst in the lab I would brainstorm about what materials I would use to convey certain textures and density -trying to mimic some tactile tangibility. I wanted something you could touch, or hold, or not be too afraid of. Not everyone wants to have their hands in intestines for instance, but with my approach they can -as mine are made from soft, squishy cotton.

I believe the bridge between Art and Science is important as there are many benefits to this. Art and Science is the relationship between the logical and emotional.



•Both require technicality, concepts, experimentation and a dedication to the practice.

Both explore the why's and how's, cans and cants, reason and importance.
Both employ investigation and development to prioritise constant growth.

> Partnership across different fields provides rich knowledge and understanding. Acknowledgement of another field of practice and responding to that with your own provides exchange and collaboration.

Graphic Design

Connor Donnelly

My work is inspired by my research into the sources of air pollution, and particularly how particulate matter is formed by combustion of materials. I decided to create work which mimics the effect of combustion on different materials, either through exposing material to heart or using modern equipment and techniques, such as laser cutting.



The resulting work is a combination of digital techniques and rudimentary resources, as the burning of fuel for human advancement or benefit has always been a part of human life, however the problems caused by the amount of particulate matter released into the air through combustion have been exacerbated by technological and industrial advancements, as demands for energy and fuel have been raised dramatically.



Overall, the intention of this project is to raise awareness of the science and terminology behind air pollution and particulate matter, as a greater understanding of the problem could lead to greater concern and greater strides to resolve the issue.

Product Design

Harry Toner



My proposal is to take the pre-existing beauty of the Dundee botanic Gardens and recreate it through an artistic view using re/upcycled materials. The aim to give previously end of life materials a completely fresh lease of life to assist in helping viewers consider the possibilities of recycling beyond the standard re-use plastics. My piece is a top-down view of a section of the gardens creates from a reused planter crate as the base, soil too toxic to grow bulbs anymore, an old green jumper that was previously to be thrown out by a flatmate as the grass and some fixed up model trees from a previous window display.



Hazel Chen

The theme of my project is waste separation, which has always been a challenge in the lives of ordinary people. For this project I created an educational and entertaining pop-up book based around waste sorting. The book features small mechanisms and pop-up drawings that allow the reader to have fun exploring and learning about what happens to items after they are discarded by the user and how they are returned to our lives. The book briefly explains how waste is recycled, what physical or chemical reactions take place during recycling, why waste goes to landfill and how landfill is made up. Learn the story behind the bins and the small things you can do to help the environment through this book - sorting your rubbish!

Lucienne Doig

Retinal organoids - providing a clear view into the workings of the human retina. With the development of this new technology it offers the opportunity for researchers to trail new drugs and treatments on a living, aging human retina. It is also believed that retinal organoids have the protentional to be the cure for many diseases such as Age Related Macular Degeneration with transplanting the organoid to the affect retinal area.





I aimed to create an enterprise that would teach and educate people about this extremely debilitating disease while also raising money for a topic of research that is extremely lacking in funds. The retinal organoid under fluorescent lights produce a very vibrate image with many colours and clear out line of the different layers within the retinal structure. I captured this and created a stylised version to print on ceramic bowls giving the impression of looking into the back of someone's eye. These bowls create awareness while also providing a topic of conversation of a disease that affects so many suffer from.



Zhonghe Chen

I want to make a drawing board with feathers. Insert feathers into a white cardboard, and put another white cardboard under this cardboard. In China the feather means a lot of things, such as a metaphor for people's reputation. "Cherishing Feathers", which means cherishing one's reputation and acting cautiously.

Which from "Shuo Yuan Miscellaneous" Words by Liu Xiang of the Han Dynasty: "Gentlemen love their mouths, peacocks love their feathers, and tigers and leopards love their claws. This is the way to govern their bodies." I want people to play with the feather on the top and draw something down it under the paper, because there are two papers which one of them block the sight of another one, so people should bend their knee to see what they drew. Which represent some people will bend their knee to cherishing one's reputation and acting cautiously.

Anna Rooney

My project looked at the pink-footed geese that migrate to the UK every winter from Iceland and Greenland. About 30 miles away from Dundee is Montrose Basin, where the geese feed and roost along their journey to England. The Basin is an enclosed estuary to the river South Esk, and along with being a hub for the geese, holds scientific interest with the other wildlife that resides there.

I have many ties to Montrose, from family, proximity, and a 7 month foster care placement.I became particularly interested in the Basin as I pass by it on train routes and was captivated by its landscape that changed every time I saw it. Then in October I learned that the skeins of geese I was seeing in the sky were actually using the Basin as a stop on its long journey south. The spectacle and scale of the migration and tidal movements inspired me to investigate the Basin in the frame of this module. Usingtextiles, I am exploring my relationship to the nature through craft, a medium that connects my

body to the earth.



Textile Design

Emily Cassidy

This piece invites a consideration of the air that we breathe.



Through this project I worked towards learning about air pollution and the devastating effects this has on the body. This led me to consider ideas of filtration. I came across research in which living algae is used to filter and absorb carbon from the air, and how seaweed, a microalgae is considered to have even greater carbon absorption capabilities than forests.

Through this vein I have used nature as an assist and inspiration, essentially biomimicry, through translating the modular growth and fractal geometry patterns of bryozoans, seaweeds, and bronchial cartilage.

As a knit student interested in materiality and the potential of bioplastic alternatives for the future. Being made from homemade alginate yarn that has been crocheted, this piece supports these natural processes of filtration, and lends itself to further considerations of sustainability.



Izzy Brogan Hadley

My work this semester has focused on how we acquire knowledge, and how other lifeforms may hold other types of knowledge that is unique to their worldview.



Through research into Biosemiotics and the philosophy of science I've been exploring how we can shift away from an anthropocentric worldview in order to dain new insight into the relationships between things, and what the implications of this new knowledge might be for solving hard problems in the fields of artificial intelligence. synthetic biology, quantum physics and the understanding of consciousness.

I've also explored the role of art in science communication, and how as we begin to see more intersectionality between disciplines - the dialogue between the arts and sciences can improve our understanding of the world around us.

Morgan Brown

Parkinson's Disease is a degenerative brain disorderthat causes uncontrollable or inadvertent movements of the body. The disease attacks the basal ganglia causing the nerve cells in the brain become impaired and/or die. This results in the body to produce less dopamine which causes movement problems and can increase the risk of depression who suffer.



In this project I investigated the effects and science behind the facial movements with people that have been diagnosed with Parkinson's Disease, and the emotional change it has on people. As the disease progresses facial movements become increasing impaired. This is called masked face. As a result to this, an individual who has Parkinson's will find it extremely difficult to expressive facial emotions. They will find it impossible to smile, blink or accurately show visual emotional responses. Throughout this project Ihave researched the basic science of Parkinson's Disease and developed my work through linear portraiture work. Using a linear method Iwas able to relate to the structure of nerve cells has a cell body with branchingarms. Through my work I hope to convey the detrimentaleffect this disease can have not only physically but mentally.

Acknowledgements

A big thank you to the Botanic Gardens, University of Dundee, for being a refuge and inspiration to students and staff in engaging in many aspects of visual thinking in a wonderful space. Thanks especially to Kevin Frediani who facilitated the use of this resource and to all the staff for their continued support. Also, Matthew Jarron and the D'arcy Thompson Zoology Museum for their inspiration and support. Many thanks also to CAP Staff Gair Dunlop and the PhD Researchers Hamer Dodds and Lucy Smith for sharing their time and research and to the external visitors for taking time to share their knowledge, experience and thinking: Glen Onwin and Norman Shaw.

Also, a massive thank you to all of the scientists that volunteered their time and knowledge to help the students in this module:

Rania Alkhadragy Ricardo Moreno Ballesteros Hajra Bibi Lucy Bidgood Daniel Davidson Andrew Ferenbach Elisa Garcia-Wilson Angela Gillies Dave Hall Angela Harrison Ingo Hein Suzanne Hodge Francisco Inesta-Vaquera Rumana Kapadia Chunhui Li Rob Massey Glenn Masson Kevin McConville Pranjal Naryani Cameron Naylor Fatemeh Moussavi Pourgharbi Ali Roberts Amy Rogers Giulia Saredi Christina Schilde Simona Seizova Gloria Shi Francois Singh Thomas Williams

And finally, a thank you to Paul Harrison and Alan Prescott from the students of Art, Science and Visual Thinking 2022.

Design & Layout by Connor Donnelly