

eMerging III

Synergies in
Art & Science



INTRODUCTION

Emerging III is the culmination of a special art/science winter school co-ordinated by Jane Quon and Lindsay Broughton in conjunction with the Tasmanian School of Art's research group ACME (Art, Communication and Marine Ecology) and the National Science Week's Young Tassie Scientist program.

The winter school unit – entitled Marine Ecology: Synergies in Art & Science – explored an area that not only possesses enormous environmental and social significance, but also offers exciting possibilities for artistic expression and communication. The unit was conducted during the University's midyear break and involved a program of presentations by scientists from the Young Tassie Scientist program, CSIRO Marine and Atmospheric Research, the Australian Antarctic Division, the Institute of Antarctic and Southern Ocean Studies, and the University of Tasmania. These presentations not only provided fascinating information on highly-focussed science projects themselves, but more broadly, they also served to “open up” the whole realm of Science – of Science as “a world” – for the art students. In addition, seminars were presented by three prominent Tasmanian artists – Lynne Andrews, Jane Quon and Yvonne Pagh-Rees - whose work has often been based upon ecological and scientific themes and who themselves have had considerable experience in art/science collaborations.

Emerging III presents the artworks of thirteen undergraduate students in Art generated from the knowledge and insights acquired - in terms of paintings, prints, drawing, sculptures and multimedia work. Some of the artists' works are direct responses to the specific scientific projects while others are far more generalised responses. In these, artistic content is not derived from specific scientific enquiry but rather the artworks constitute statements about Science itself, Science as a way of knowing, and of the whole “worlds” that Science reveals to us.

Lindsay Broughton
Tasmanian School of Art
University of Tasmania

EMERGING:

The disciplines of art & science are frequently considered as disparate and even hostile to each other. Yet, during the Renaissance period the two disciplines worked together and heralded great scientific discoveries as well as producing inspiring art (e.g. the works of Leonardo da Vinci and Galileo Galilei). Art documented but also explored aspects of science and in this manner it assisted scientific thought.

Science and art have much in common. Both pursue truth, knowledge, and work for the betterment of society; and both relate to and are inspired by the natural world. Yet they differ in their approaches, their modes of communication, and their outcomes. Science observes and interprets our world, whereas art expresses and provides experience of our world. During the last century we have often viewed these differences as adversarial. Today, we are beginning to see these differences as complementary. Around the world science and art are re-connecting in projects pursuing common goals.

National Science Week provides the opportunity to showcase the work of talented Tasmanian artists and scientists who have come together to explore scientific and artistic concepts through artistic practice. The result is a fresh and insightful exhibition of work that challenges our perceptions, ideas and emotions. eMerging III invites the audience to shift their perspective and open their eyes, hearts, and minds to the synergies between art and science that together can increase our understanding and advancement of our natural and social worlds.

Karin Beaumont

Marine Jeweller/Biologist
Oceanides

SUE ANDERSON

What Will Your Answer Be?

Acrylic and gold leaf on paper,
with sound-scape.

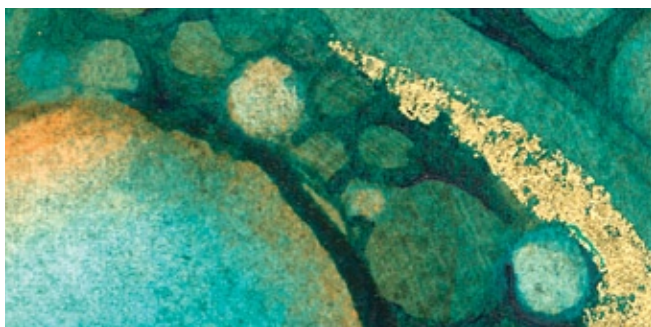
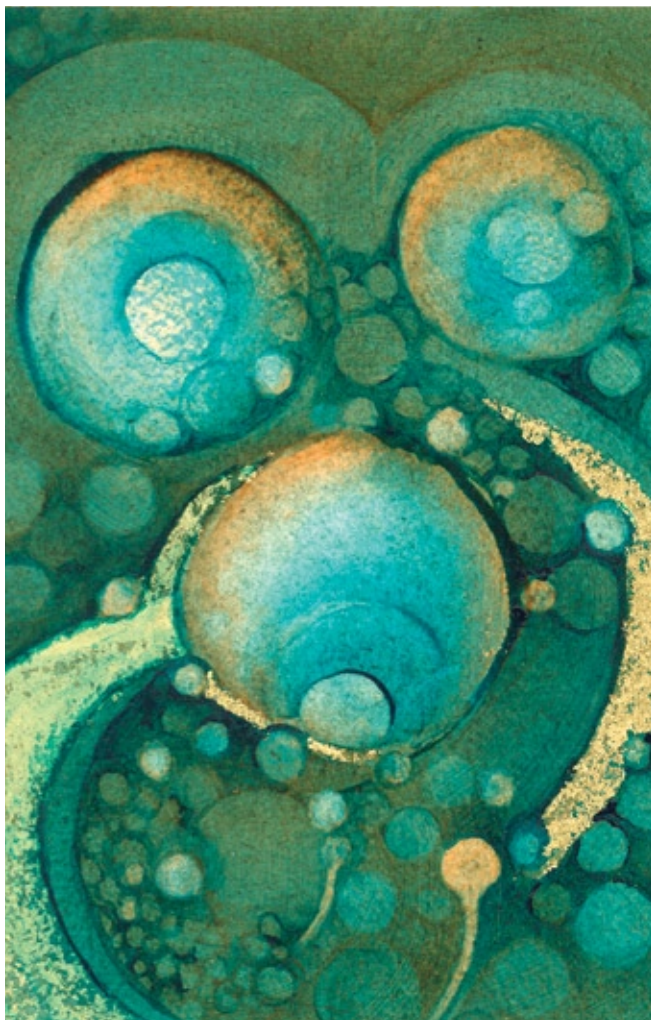
Microscopic phytoplankton, in huge biomass, are crucial in moderating greenhouse gases, in producing 50% of the world's oxygen and in triggering the formation of protective clouds. Their value, we are told, "cannot be overestimated" – worthy of iconic status.

A series of Icons, images inspired by the radiolarian paintings of Ernst Haeckel the 19th century morphologist, and by the diatoms and protists revealed by the powerful electron microscope today, seek to engage the viewer with this vital and infinitely diverse microscopic world.

Fantasy and reality combine as poet Louise Oxley unlocks buttoned diatom lips.

The orange glow of warming licks at each fragile form...

What will your answer be?



TONIA GRETSCHMANN

Unknown

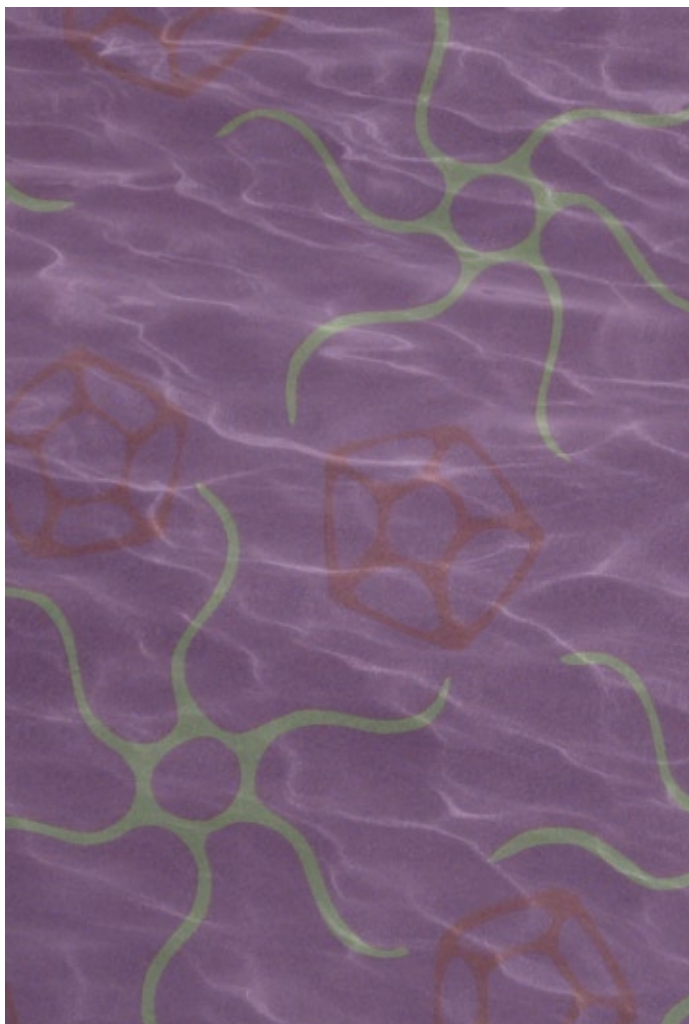
Digital Print

The series of lectures given by various scientists covering an extremely broad range of topics ranging from quantum mechanics to behavioural types in rats, all highlighted one main point for me: how little we humans actually know about the incredible world that we live in. An area that remains largely unexplored is the ocean. Not only are many parts of it

exceptionally difficult to access, so much in it is beyond the ability of the naked eye to see. In his lecture, Professor Gustaaf Hallegraeff showed a superb series of microscopic images of some of the breathtakingly beautiful life that exists in the ocean. These fired up my imagination so much that I began to wonder what else we might yet find in the vast expanse of



the ocean. While my images show life-forms with a definite visual connection to those that have already been discovered, I have allowed myself the freedom to let my imagination wander, creating new types of oceanic life.



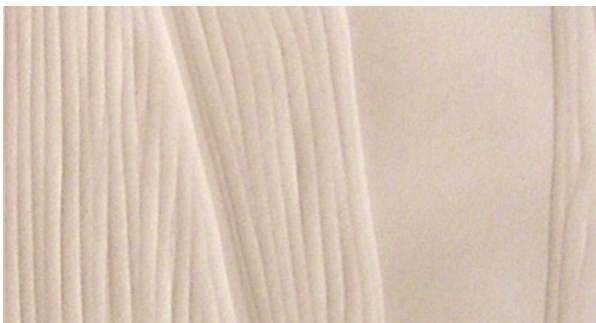
SARAH JAMES

There Better Be Penguins

Embossed paper

My artwork has always centred on my life and my family. I chose the Science/Art elective as a way to temporarily follow another path. I walked into the first set of lectures saying: "There Better Be Penguins". I wished to depict some of the Antarctic's most amazing creatures using my print-making skills.

There are nineteen species of penguins, all of which could possibly be affected by human-made problems such as global warming. The subtlety of my prints shows the delicate balance between nature and the effect humans have on the world. I have tried to capture the personality of the penguins within their all-white world.



TESS MACGREGOR

"Nature exhibits a unity underlying an ever astonishing variety. There is an inherent geometry and symmetry in nature." Ernst Haeckel

Themes of organic beauty and natural symmetry that so inspired scientist, artist and influential evolutionary theorist Ernst Haeckel are echoed throughout his extensive work. Haeckel's detailed depictions of beauty being manifest in the smallest living thing- the microscopic organism, and his fascination with the parallels between symmetry and beauty within the natural environment, illustrate the natural link between art and science.

My work aims to capture the delicate beauty within microscopic organisms whilst exploring the significance of symmetry within nature.



ROSLYN MEEKER

Nothing Sleeker Than a Geek

Print on cotton



In conceiving my work I tried to express my attraction to the philosophy advocated by Jeannie-Marie LeRoi, the Director of National Science Week, that science should be fun. I found myself reflecting on how Dr. Karl Kruszelnicki's bright shirts are somehow connected in my mind with his passion for the communicating of science. Added to this, I have for some time, wondered why laboratory coats really need to be so clinically boring. So I pursued a project where laboratory coats have been used as the canvas itself.

The potential of communicating through 'wearable art' was brought home upon hearing Dr. Karin Beaumont's comments about people engaging with marine science through viewing the jewellery she created and this offered further possibilities regarding the directions this project could take me.

In these works I hope to combine my artistic response to the imaginary and concepts encountered during the art/science synergy with my emotional response to the passion for their field exhibited by the course's science presenters.

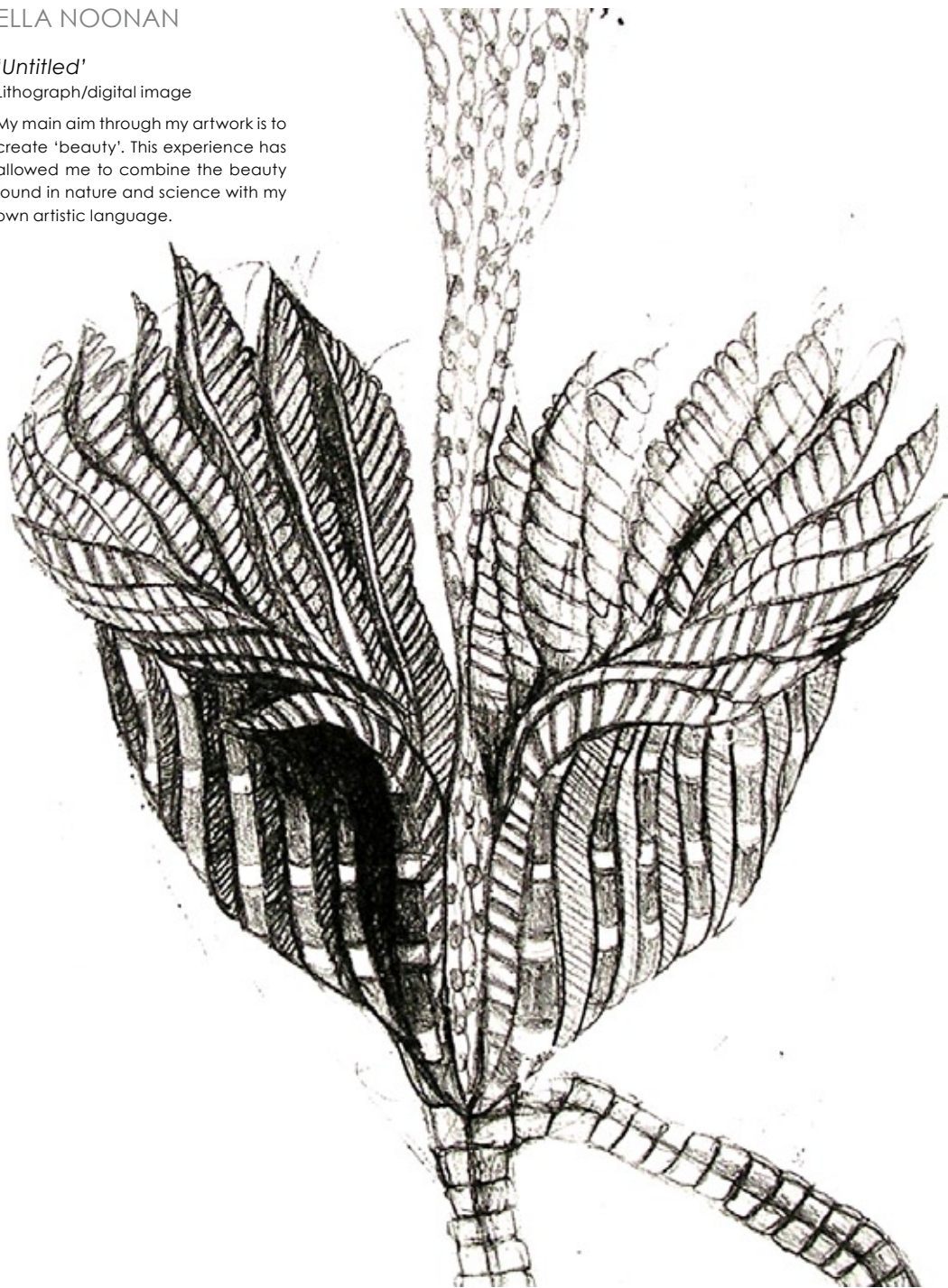


ELLA NOONAN

'Untitled'

Lithograph/digital image

My main aim through my artwork is to create 'beauty'. This experience has allowed me to combine the beauty found in nature and science with my own artistic language.



DIANA H. O'BRIEN

No 1 *Melt*

Acrylic on canvas

My work is inspired by the natural world of the Antarctic and a concern for the effects of Global Warming within this pristine wilderness. I have endeavoured to capture the essence of Antarctica as an untarnished haven of brilliant colours, cleanliness, pureness and vastness, incorporating both the frozen surface and the wondrous world below.

No 2 *Night Parachute*

Acrylic on canvas

This work looks at both the decline in numbers and importance within the vast food chain of the carbon-producing Antarctic Krill (*Euphausia superba*). This chain ranges from the primary producing phytoplankton to the vertebrate predators – such as whales – up to the human food chain.

Within this multi-layered rendered image, marine creatures are suspended in a dark and fluorescent world of organic abstraction combined with naturalistic elements.



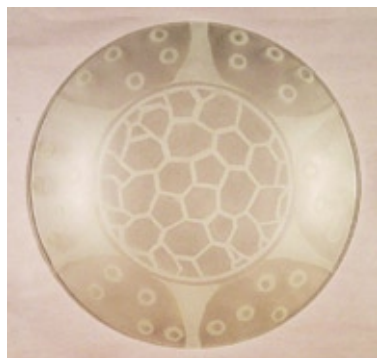
NINA RICKETTS

Glass Skeletons

Glass, Perspex, aluminium

I was intrigued by the fascinating shapes and natural forms of the electron microscope images in G. Hallegraeff's first book, *Plankton: A Microscopic World* – for example the calcareous-scaled coccolithophorids, the whip-like dinoflagellate and the silica-walled diatoms. I chose to develop my work on the incredibly varied and beautiful structures of the first living organisms on the planet. For this work, I focused on the glass-like internal skeleton of the radiolarians.

Scientists are compelled to identify and classify to seek an order in what they find. It is with this in mind that I have structured my work in exploring synergies in art and science.

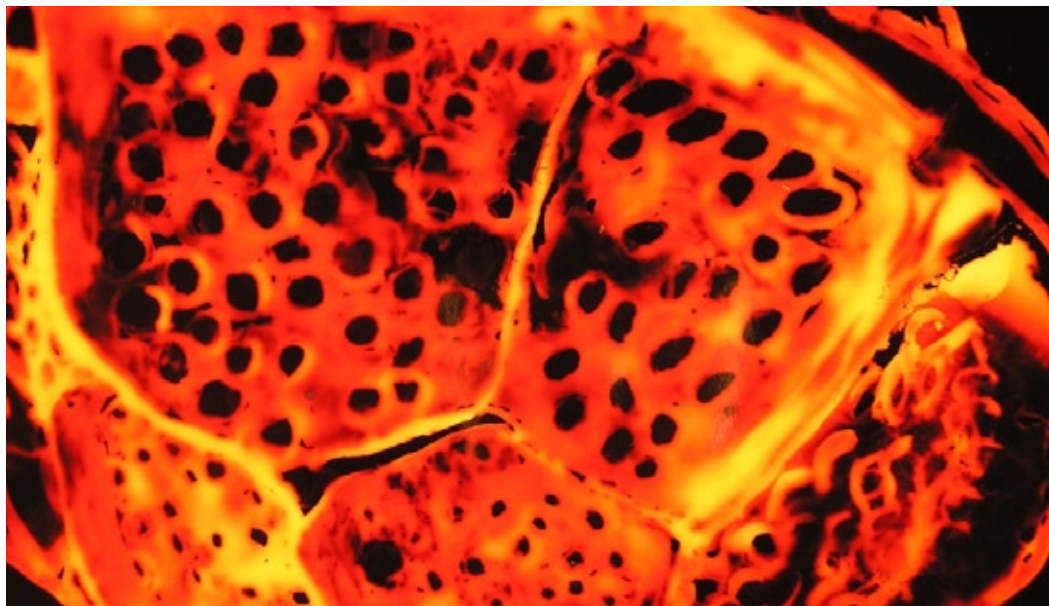


LISA SHULANDER

'Untitled'

Digital media

What I am most convinced of through the study of any discipline – be it science, philosophy, art or other – is the complete connection and dependence of one mode of understanding with another. This exhibition explores a direct relationship between science and art, between formal qualities of matter and explanation, between visual stimulation and practical survival. Within that framework, my work explores the relationship between the microscopic and the macroscopic, what we don't see and how much it is a part of our lives.



ROSANAGH SHIELD

'Untitled'

Glass beads and nylon line

The work that I have produced is concerned with the relationship between art and science. I took the visual qualities of diatoms and dinoflagellates and portrayed these through the manipulation of glass beads and nylon fishing line. The sculptures are intended to reflect the beauty of science.



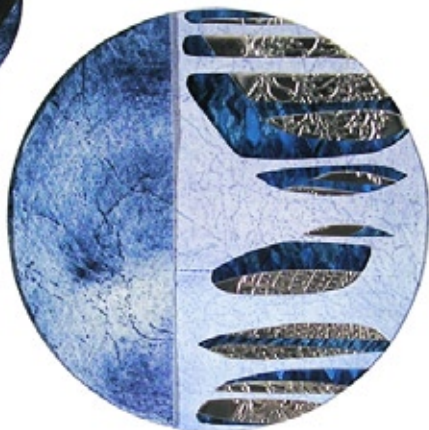
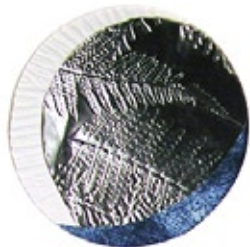
MELANIE SPENCER

Balance

Collage/Mixed Media

While I reflected on the Science Lectures, two words kept recurring – Balance and Symmetry. We are all aware that the natural balance between humans and the environment is at an all time low. I personally feel that the emotional and spiritual health of mankind is also out of balance and needs to be restored. Moral responsibility and universal tolerance will be essential requirements for a world faced with the prospect of nuclear catastrophes.

My prints respond to the changes that affect the natural and spiritual world today. The imagery is highly symbolic, but deliberately chosen because both Science and Art use symbols as a means of communication.

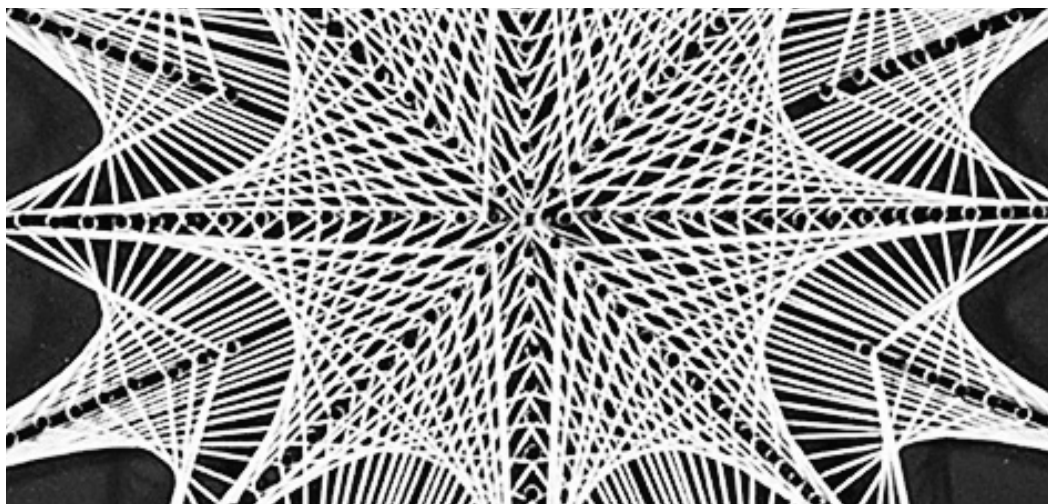
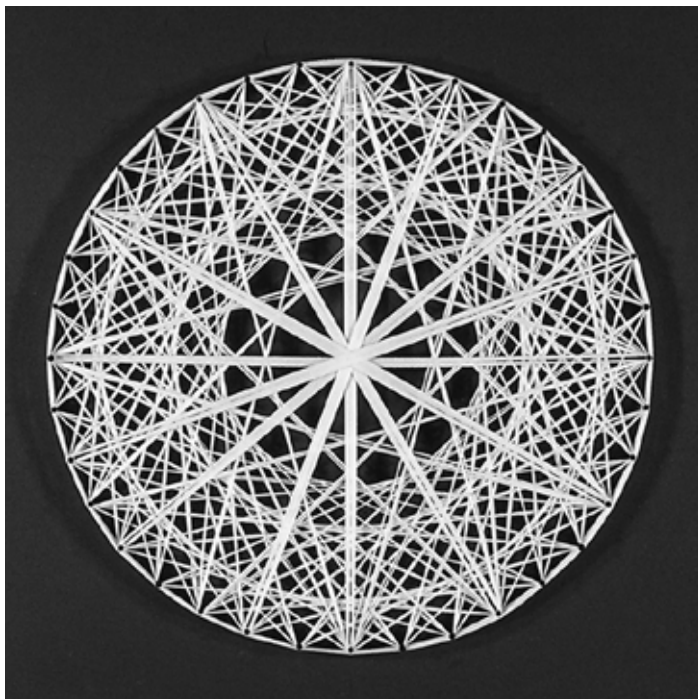


KELLIE STRACHAN

Symmetry

nail and string on board
approx. 40cm x 40cm

I was unaware of the beauty of the microscope diatoms and dinoflagellates prior to being introduced to them by Gustaaf Hallegraeff. The drawings of these organisms by Ernst Haeckel in the 1800's were quite profound. These amazing shapes are floating in practically every aquatic environment around us. However, only a small percentage of humans are lucky enough to view them under a microscope. The beautiful symmetrical patterns of the unicellular diatoms inspired me to create my three string art pieces to accentuate the beauty and symmetry of these beings.



CAROLYN WIGSTON

Bold Behaviour

Acrylic Tape

There is a simple geometric commonality between art and science: the grid.

The grid has been used in art to view and understand complex visual idioms by breaking down the whole into smaller, more decipherable pieces. Scientific concepts of measurement and analysis within the grid are a common device for an artist.

A simple square lattice used in an experiment to observe behavioural instincts determines direction, distance and speed, resulting in a hypothesis about personality and behavioural traits.

Moving across the grid, audience members simulate animals within the lab confine. The distortion of the grid indicates fundamental flaws within the method, and conclusions of such experimentation.



COORDINATORS:

Lindsay Broughton and Jane Quon
Art, Communication & Marine Ecology
Tasmanian School of Art,
University of Tasmania
www.utas.edu.au/acme/acme_research.html

Jeannie-Marie LeRoi,
National Science Week
Co-ordinator (Tasmania)
www.scienceweek.info.au

PRESENTERS AND TOPICS

Lynne Andrews,
Tasmanian School of Art/ Institute
of Antarctic and Southern Ocean Studies,
**Visual exploration and
interpretation of Antarctica**

Dr. Karin Beaumont,
Oceanides
**Experiencing the disciplines
of science and art: Antarctic
and climate change studies
inspiring wearable art**

Michael Grose,
Institute of Antarctic and
Southern Ocean Studies
**Biological production of gases
by phytoplankton in the ocean**

Dr. Peter Hay,
School of Geography &
Environmental Studies,
**Environmental thought,
environmental politics,
and the nature of place**

Prof. Gustaaf Hallegraeff,
School of Plant Science,
Plankton, a microscopic world

Jeannie-Marie LeRoi,
National Science Week
Co-ordinating Committee (Tasmania)
**Ripple effects: public awareness
of science and art**

Yvonne Pagh-Rees,
Tasmanian School of Art,
**Nature, science, and art:
looking beyond the seen**

Dr. Jane Quon,
Tasmanian School of Art,
**Art, communication and marine
ecology: communicating through
the affective domain**

Caroline Sutton,
CSIRO Marine and Atmospheric Research
**Strategies for science and art
collaborations in marine science**

Dr. Guy Williams,
Antarctic Climate & Ecosystems
Cooperative Research Centre
**Measuring sea-ice thickness with
an autonomous underwater vehicle**

YOUNG TASSIE SCIENTISTS

www.youngtassiescientists.com

Maitilda Haas,
NeuroRepair Research Group,
University of Tasmania
Brain responses to injury

Elijah Marshall,
Australian Centre for Research
on Separation Science
Gold extraction techniques

Joanne McEvoy,
School of Zoology, University of Tasmania
**Behavioural ecology in native
Tasmanian rodent species**

Luke Yates,
School of Maths & Physics,
University of Tasmania
**Quantum mechanics
and theoretical physics**

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