THE FELLOWS

Vice-Chancellor's Artist Fellowship Scheme Exhibition 2018

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22 June - 13 July

Australian National University

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FOREWORD
VICE-CHANCELLOR

The Vice-Chancellor's Visiting Artist Fellows Scheme (VCAFS) was inaugurated by the Australian National University in 2013 to encourage and celebrate interdisciplinary research. Each year up to six artists are funded to work collaboratively with researchers in the ANU Colleges and to produce creative and experimental outcomes.

Over the course of its initial five-year cycle the VCAFS program has supported almost 30 artists working with academic colleagues in a remarkable range of disciplines, among them psychology, computer science, archaeology, anatomy, herpetology, chemistry, law, plant ecology and geology. VCAFS artists have worked alongside academics undertaking environmental research in the field, produced weavings exploring crystalline molecular structures and reflected on the impact of digital technologies on art and research alike.

The strategic plan of ANU declares that "the most exciting research opportunities, addressing the most pressing challenges facing our world, lie in collaboration between disciplines." The art produced in the VCAFS program captures this sense of excitement: the ambitions of both artists and their academic collaborators have been challenging and experimental. And the process of collaboration itself—setting aside conventional disciplinary geography, establishing new methods, conceiving of new perspectives—has embodied key values of the university: "distinctive excellence," "informed risk-taking," and "original thinking."

Professor Brian Schmidt AC FAA FRS
Vice-Chancellor and President
The Australian National University

INTRODUCTION
HEAD OF SCHOOL

The first scheme of its kind in an Australian university, the Vice-Chancellor's Artist Fellows Scheme (VCAFS), The Fellows, encourages interdisciplinary research relationships across the breadth of the Australian National University's colleges in order to develop and sustain a wider mutual understanding of collaborative working practices. In collaboration with academic partners, staff, advanced students and recent alumni, the School of Art and Design has developed, pursued and informed research projects in such diverse fields as chemistry, herpetology, forestry, anatomy, mathematics, archaeology and law. Practice-led research, robust intellectual dialogue and innovative research and reporting methods are developed in the pursuit of creative solutions to real world challenges.

Each fellowship traverses one academic year and culminates in a group show with an exhibition catalogue. These prestigious fellowships offer an exciting opportunity for our best creative practitioners to work with high-flying researchers in other fields: an important stepping stone in the career development of young artists, many of whom have ambitions to continue in academia. Artist fellows are selected each year on the basis of their work, research interests, the strength of the project proposal and the associated collaboration. Prospective artist fellows identify an appropriate research field and collaborator within one of ANU's Colleges. An interdisciplinary panel, comprising senior University staff and external advisors selects successful applicants.

The formation and development of the VCAFS program reflects significant changes in the understanding of collaborative practice and research in the arts. Early formations, emerging in the 1960s, focused on artist placements or residencies, often within community or industry contexts. The modernist distinction between avant-garde and conventional cultural practice meant that the artist was conceived of as a voice from the outside, a change agent with a potentially challenging perspective.[1] In Australia, in the 1970s and early 80s, the practice of community art was particularly strong, with the artist working beyond

the studio and academy as an engaged facilitator within social-political projects. Perceptions of interdisciplinary practices were broadly shaped by the ideas of dissent and empowerment, with the artist being a mediator or coordinator. In the 1980s and 90s, with the emergence of 'area' studies and an expansive conception of research and knowledge, interdisciplinary perspectives became generalised within the university. Australian studies, queer theory, postcoloniality and cultural studies among others, mobilised researchers across complex fields of increasingly hybridized knowledge. In addition, new research challenges, coupled with an urgent sense of social engagement (such as climate change, public health, digital technologies) entrenched a search for and an appreciation of interdisciplinary perspectives in the STEM disciplines.

What this means now is that characteristics that artists might have thought distinctive to their discipline—post-studio practice, hybrid media, social engagement, collective or situated projects—are increasingly common across a range of other disciplines. Reviews of contemporary research practice propose, and the experience of VCAFS confirms, that collaborations across disciplines now form around a mutual expectation that there is a new object of study and that interdisciplinarity shapes knowledge of this object and the ways that this is communicated.[2] The entire VCAFS process—devising a project, identifying a collaborator, pursuing research in the field and in the studio, articulating findings in an exhibition—establishes a community of practitioners and researchers, students and scholars, specialists and an engaged audience around interdisciplinary research.

Professor Denise Ferris
Head
School of Art & Design
College of Arts and Social Sciences, ANU

[1] Escott, Hugh, Helen Graham, Kimberley Marwood, Steve Pool, and Amanda Ravetz. "What Is the Role of Artists in Interdisciplinary Collaborative Projects with Universities and Communities?" In *Valuing Interdisciplinary Collaborative Research: Beyond Impact,* edited by Pahl Kate and Facer Keri. Bristol, UK; Chicago, IL, USA: Policy Press at the University of Bristol, 2017, p. 131.
[2] Escott et al, p. 139.

2017 COLLABORATIONS

Susan Buret & Dr Vanessa Robins
Research School of Physics & Engineering,
Department of Applied Mathematics, ANU

Dr Kit Devine & Dr Ben Swift,
Research School of Computer Science,
College of Engineering and Computer Science, ANU

Dr Alexandra Gillespie & Dr Vanessa Robins
Research School of Physics & Engineering,
Department of Applied Mathematics, ANU

Michelle Hallinan & Professor Brad Pillans
School of Physical and Mathematical Sciences
College of Earth Sciences, ANU

Dr Ella Whateley & Dr Peter J Riggs
Department of Quantum Science
Research School of Physics and Engineering, ANU

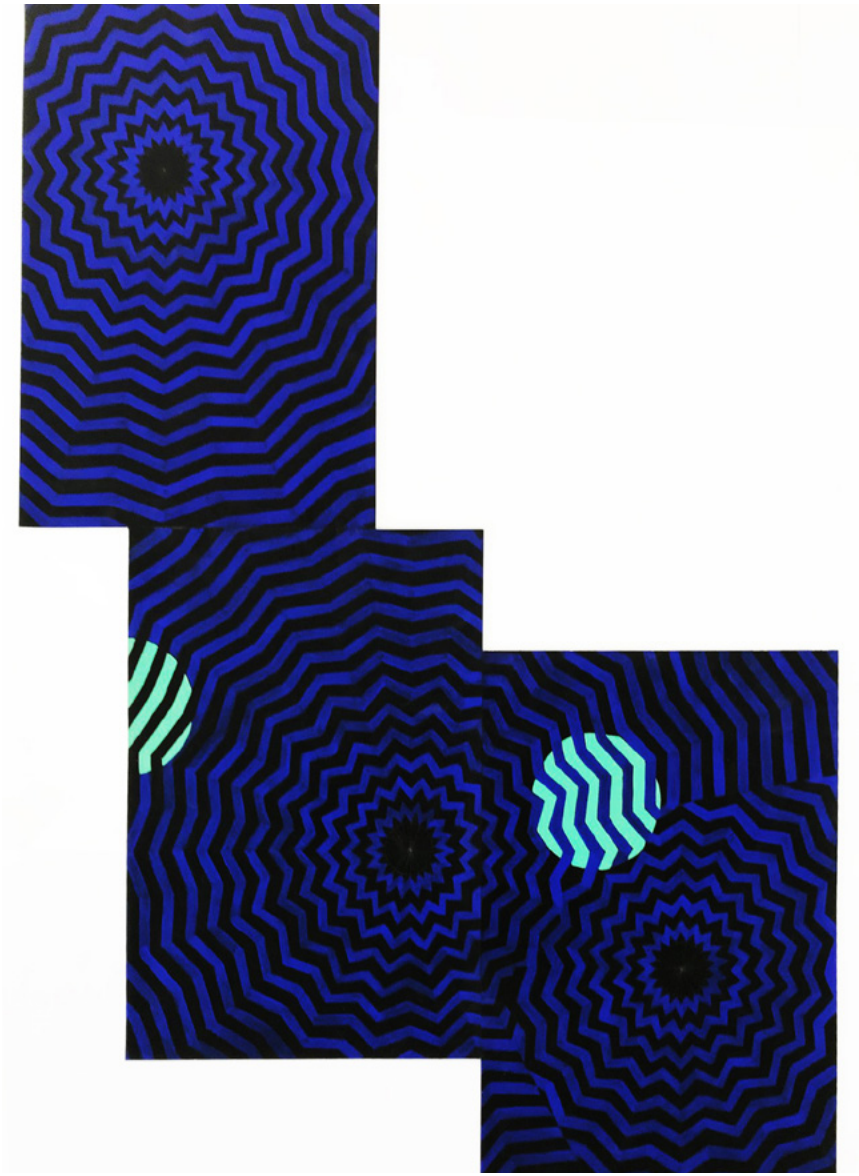
SUSAN BURET

Dr Vanessa Robins and I share a love of pattern in textiles and ceramics and it was from this basis that our collaboration began. When we met, Dr. Robins was researching ribbon patterns on three-dimensional hyperbolic surfaces. I saw how patterns could be expressed in equations and how computer-generated images could allow the patterns to be experienced in three dimensions and from many viewpoints.

Five decades ago my love of pattern and geometry had begun as a result of inspired teaching by my high school maths teacher. However, by the time I came to use geometric pattern in my paintings, I used a hand drawn square grid and intuitively developed my images using chroma and tone to create tessellated patterns. The opportunity to once again engage with mathematics, albeit in a much more sophisticated form, led me to question how I might express three-dimensional forms and the experience of virtual travel through them in paintings.

I began by making some simple hyperbolic surfaces using bamboo sticks and papier mâché that I painted with simple geometric patterns. These primitive forms were based on my hand span and they provided a satisfying haptic engagement and a reference to the embodied experience of space.

I wasn't happy with the forms as they were highly irregular, and the provisional nature of the materials detracted from the experience of the surface. Dr Robins helped me to have some three-dimensional printed templates made and, from there, I decided to work with ceramics to produce smoother hyperbolic surfaces on which to paint. At the same time, I investigated the hyperbolic honeycombs that resulted when three dimensional hyperbolic forms where expressed as two-dimensional images. These images reminded me of bubbles and I began to work with circles and transparency a series of watercolour images. Looking at computer generated images of the virtual reality of travel through these honeycombs I considered how I might express the path of the viewer.



Susan Buret, *Little Mystery 2*, 2018,
flash acrylic on paper, 94 x 70 cm

Discussing non-Euclidean geometry with Dr Robins led me to research the fourth dimension, a concept that has interested visual artists since the early 20th Century. I decided that I would use a looping black line to suggest this concept and the path of the viewer through the three-dimensional honeycomb of hyperbolic form.

As a painter, mathematics remains a beautiful and mysterious body of knowledge. Brief flashes of understanding into how the non-visible can be described together with the opportunity to engage with a different discipline and methodology has resulted my exploring new forms and media to extend my practice.

Collaborator Statement - Dr Vanessa Robins,
Research School of Physics & Engineering,
Department of Applied Mathematics

I enjoy collaborating with artists as it is a way to help reveal the imaginative aspects of the mathematics I work on. The mathematical description of shape and pattern takes on a very abstract form but usually begins with interesting natural examples. The Platonic polyhedra are a good example. These are the tetrahedron (a triangular pyramid), the octahedron, the icosahedron, the cube and the dodecahedron – forms originally found in nature as crystals of fool's gold (pyrite) and fluorite. The mathematician studies these natural examples and then asks whether such forms are the only ones possible? What are the fundamental principles that give rise to a particular pattern? What if we change some of these rules? The answers are found by translating shape and pattern into abstract symbols and rules that are easier to manipulate logically, but often hide the creative process used to get the end result.

The repeating patterns that can be formed on a long flat strip are well known in design as frieze patterns. They are used when decorating a border along a wall or floor or on a band around a pot. In the course of my research into three-dimensional crystalline materials, I've been led to ask the question of what repeating patterns are possible when the long strip lies on a hyperbolic surface, and how can these strips fit together. The richness of non-Euclidean hyperbolic geometry means there are many more possibilities than found on our familiar flat page. These are the hyperbolic ribbons that I talked about with Susan Buret during the course of our collaboration.

One of the curious aspects of hyperbolic geometry that Susan had to grapple with when decorating her early maquettes is the fact that the structure of the pattern dictates the size of the shapes. In the Euclidean plane you can fit exactly six equilateral triangles around each corner, and these triangles can be any size. But in the hyperbolic plane you can fit seven, or eight, or nine, or any number of equilateral triangles around each corner. However, the triangles that fit seven around a corner must have a single specific edge length, which is different to that for the triangles that fit eight around a corner and so on. Susan's looping line along the hyperbolic tiles I think captures some of this challenge to find a path through this counterintuitive world of hyperbolic honeycombs.

Susan Buret, *Little Mystery*, 2017-2018,
glaze and underglaze on earthenware and
flash vinyl on paper,
56 x 76 x 25cm.

KIT DEVINE

This work explores the artistic licence inherent in heritage visualisation and the profoundly experiential affect of Virtual Reality 'VR'. The work is based on an 1804 print drawn by E. Dayes and engraved by F. Jukes from an original painting since lost. The print may or may not be an accurate depiction of Sydney Cove so any visualisation based on it cannot be assumed to be an accurate recreation of Sydney Cove in the early 1800s. The Aboriginal family shown in the foreground is a trope seen in other pictures of the time, by a variety of artists, showing views of Australian places and landscapes. The man walking cattle along the road may have been added to show the bountiful nature of the land.

Additionally, it was not uncommon for a ship's captain to buy a picture of a particular port, such as Cape Town, and have their ships added into it. Therefore, the large sailing vessel may, or may not, have been there. Kit Devine has used the print as a starting point and has added sound and animation to bring the scene to life. She has also introduced a trope from the film industry where it is common to include a flock of birds to give life and scale to computer generated landscapes. Flocks of cockatoos still thrive in Sydney and the artist has included a flock of cockatoos in her VR interpretation of the print. Virtual Reality, by its very nature, is deeply immersive and easily evokes a strong feeling of presence or 'being there' in the virtual world. As heritage visualisations become more realistic, are audiences conflating realism with truth?

A view of Sydney Cove, New South Wales, 1804
drawn by E. Dayes from a picture painted at the
colony, engraved by F. Jukes

Collaborator Statement - Dr Ben Swift,
Research School of Computer Science,
ANU College of Engineering and Computer Science

The Virtual Reality (VR) revolution has been heralded in art before (a couple of times, actually) so I think that it's valid to ask "what's different this time?" One of the most interesting aspects of working with Kit on this project is that the hardware and especially the content-authoring tools are much more accessible than in the past. There's still expertise required, for sure, but the nature of the expertise is different — not just getting the tech to work, but the expertise of the storyteller; the "experience designer". That's what VR really needs right now — anyone can drop a thousand bucks on a VR headset, but the majority of them sit idle once the novelty of the initial demo apps wears off, and creating engaging new content is hard. If you can pull it off, though, it's incredibly compelling.

The process of recreating a historical picture with Kit has shown (reassured, maybe?) me that it was ever thus. Editorial and artistic decisions — the tension between telling the truth and telling a good story — are foregrounded as the technical and financial barriers to entry with VR recede. What will artists (and content creators more generally) do with this opportunity? How will it affect the lies that they tell to get at (or conceal) the truth?

Kit Devine, *Artistic Licence* (still), 2018,
virtual reality animation.

ALEXANDRA GILLESPIE

I am interested in the architecture of marine invertebrate colonies, as animal made homes and also the deeper mathematical structures underlying the formation of such colonies and that of the greater interconnected physical world.

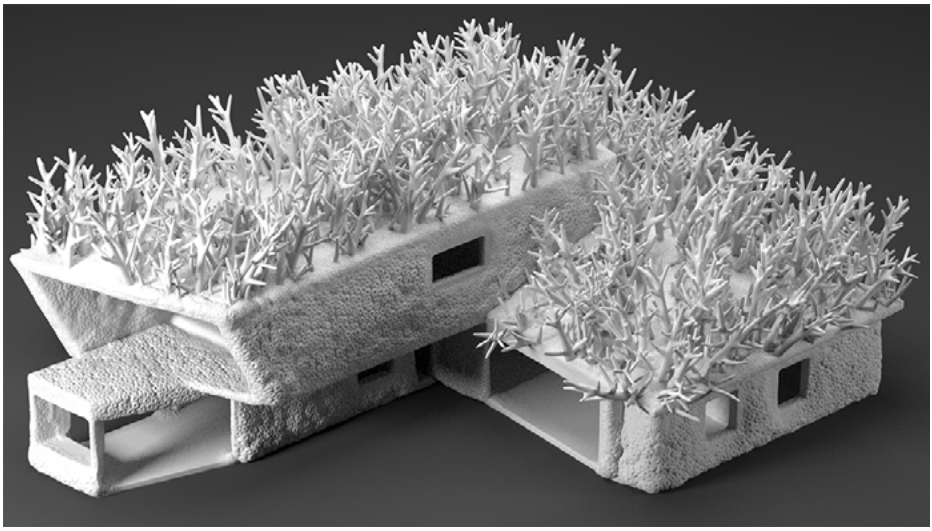
Coral reef systems protect coastlines and in turn protect human habitation, along the coast; both types of colonies are under threat as a result of climate change and increasing sea temperatures. Displacement of both human and animal colonies will occur in turn. Coral reefs are incredibly the largest structures of biological origin on earth.

In 2003, when I went snorkelling in Florence Bay on Magnetic Island off Townsville, the coral reef there was like an underwater city of complex coral built forms. This experience and vision has remained resonant in my mind.

In April of this year I travelled to Rawdon Island, Port Macquarie and stood on the land that my great-great-great grandparents, who came out from Ireland, owned. The house they had built on the edge of the water had not withstood the sea water rising and flooding the land. However the fig tree they had planted for shade and protection remains.

Aristid Lindenmayer (1925-1989), a Hungarian theoretical biologist and botanist described and developed L-systems in 1968. Lindenmayer used L-systems to describe the behaviour of plant cells and to model the growth processes of plants. Stag horn corals are a branching structure whose growth and form can be described through this model.

Over several months I worked with Dr Robins, to model a Lindenmayer L –system based on a stag horn coral and 3D print this form through the National Laboratory for X-ray Micro-computed Tomography at the Research School of Physics and Engineering, ANU.



Alexandra Gillespie, *My Coral House*, 2018,
polymer print, 18 x 21 x 29 cm

The stag horn coral and trees are both L-systems. Vanessa described how the complexity of coral forms slows down the power of waves before they hit the coastline much like trees act as wind breaks on the land.

The media discussion around the loss of coral habitation often doesn't address coral reefs as a protective system for our coastlines, coastal habitation and located housing. The reef is a natural wonder, a tourism drawcard, a complex ecology and manifestation of the effects of sea water temperature increasing but not often discussed as a protective system.

The outcome of my thinking about corals and this project is a human architectural form (a model of my house) in which the protective structure of the walls and roof are formed by coral.

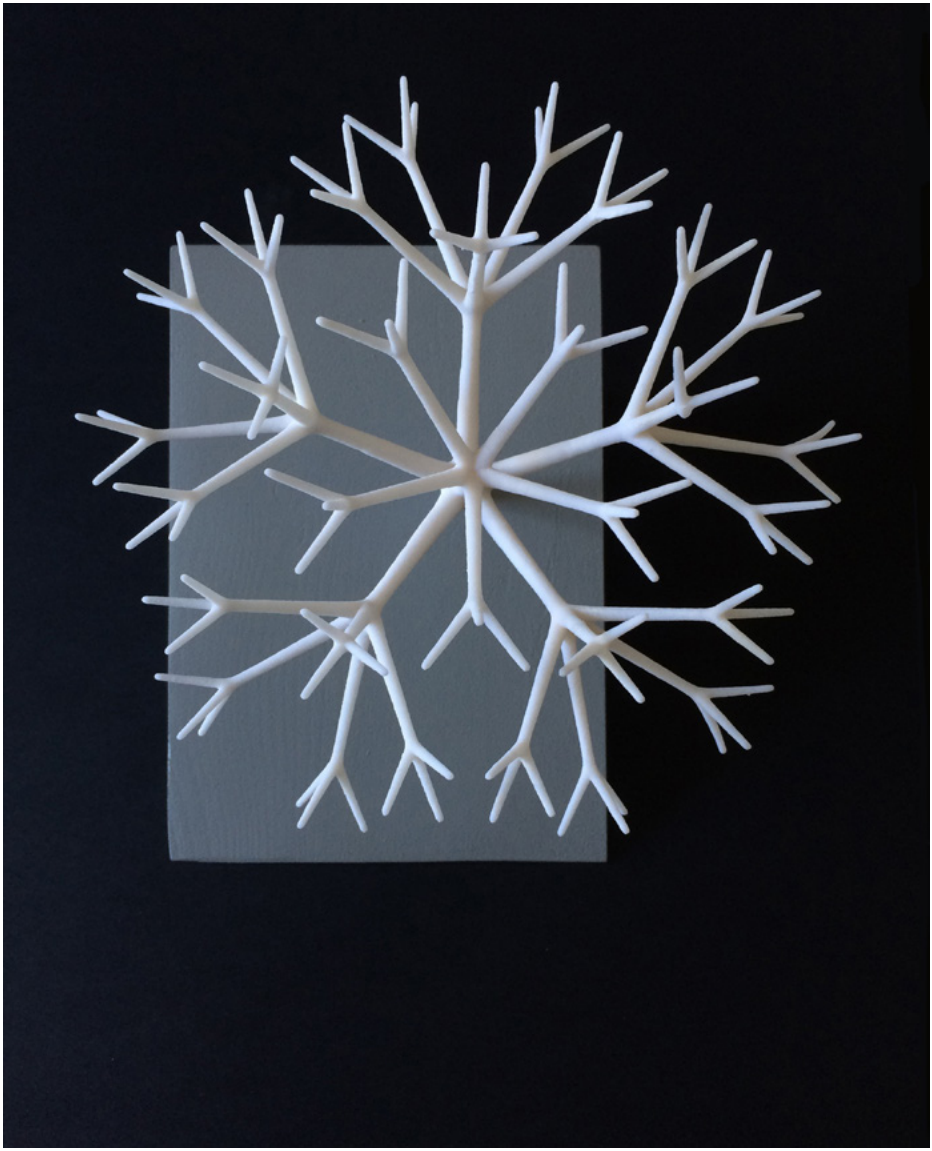
Collaborator's Statement - Dr Vanessa Robins,
Research School of Physics & Engineering,
Department of Applied Mathematics

A connection between the natural world and mathematics is most easily seen through the study of patterns and geometry. Dr Alexandra Gillespie and I discussed a variety of different approaches to the mathematical description of pattern and how these might intersect with her interests in coral forms. After discussing tiling patterns and texture mapping I learnt that the primary reason for her interest was the role that coral reefs play in protecting a coastline and providing a home to a hugely diverse ecosystem. This reminded me of a lecture I once saw explaining that the fractal geometry of a coral reef was one of the most important factors in providing this protection against the energy of the ocean swell.

Fractals have structure that repeats on many different length scales, the overall shape looks roughly similar when seen a kilometre away, or when a small piece is viewed up close. The fractal structure of a coral reef transforms the powerful ocean swell from a large scale periodic force to the smaller ripples of a quiet lagoon.

There are many ways to describe and generate fractal structures, and the method most suited to branching corals is called an L-system. This is a recursive algorithmic technique invented by Aristid Lindenmayer to model biological forms. It is extremely adaptable and has found wide application in computer generated imagery.

Alex's house uses many small L-systems with random variations in their parameters to create a protective forest of branched forms over the roof. It should be wonderfully insulated from howling winds.



Alexandra Gillespie, *L System Model,* 2017,
gypsum print, dimensions variable.

MICHELLE HALLINAN

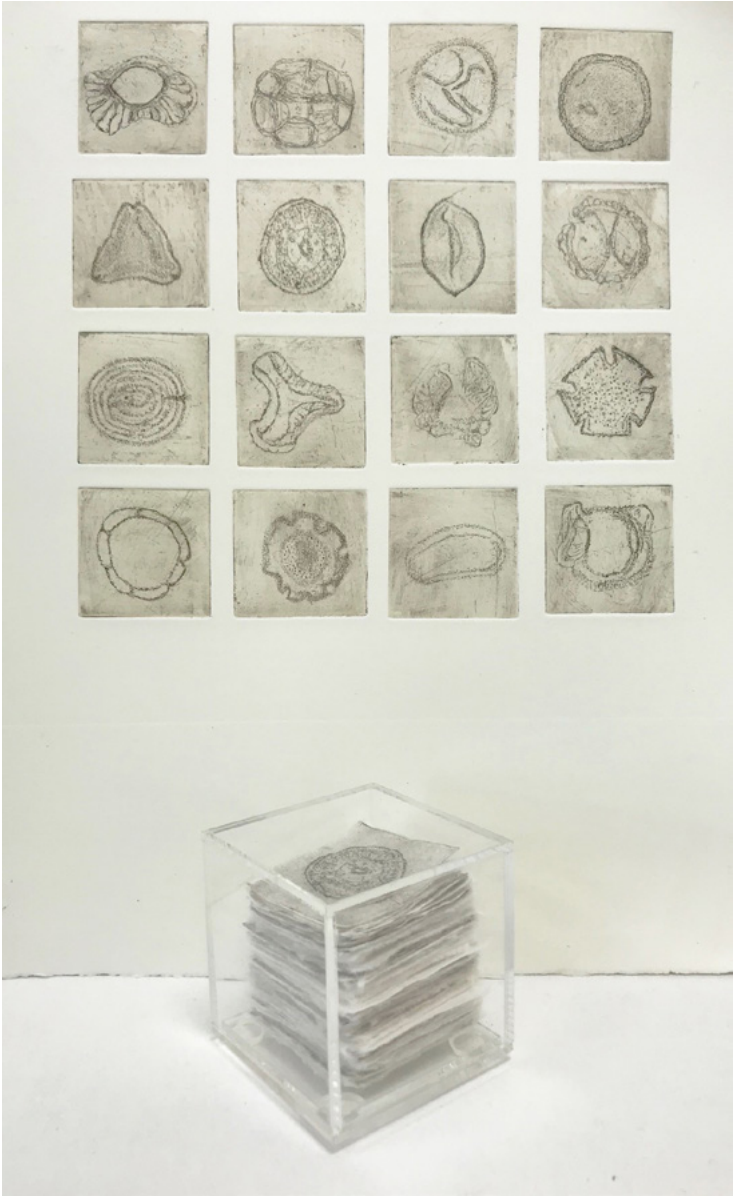
Research question: *How does an understanding of scientific research on landscapes influence an artistic portrayal of Lake George?*

The initial concept was to portray 'The Evolution of Lake George' research in the form of artist books. The final project consists of three sections: the geology of the escarpment, the core samples and the micro fossil seeds and pollen.

Both the artist and the geologist shared an interest in the escarpment of Lake George towering near the everchanging lake surface. Discussions with my colloborator, Professor Brad Pillans provided an understanding of the structure and evolution of this landform and informed the making of the artist book Weereewa – *A geological Exploration*.

I became intrigured by the textures and colours of the soil of the core samples from the field trips to drill the core samples and observations of samples being taken from stored cores in the laboratory, they were like a landscape within themselves and resulted in the suspended prints *Core Revealed*.

In the series *Morphospecies Collective* the interesting shapes and textures of the micro fossil pollen and spores from within the core samples became small etchings like the specimen slides I observed in the laboratory and were printed on Japanese kozo paper to portray their delicateness. The display box containing many small prints on kozo layered represent them layered beneath the earth's surface.



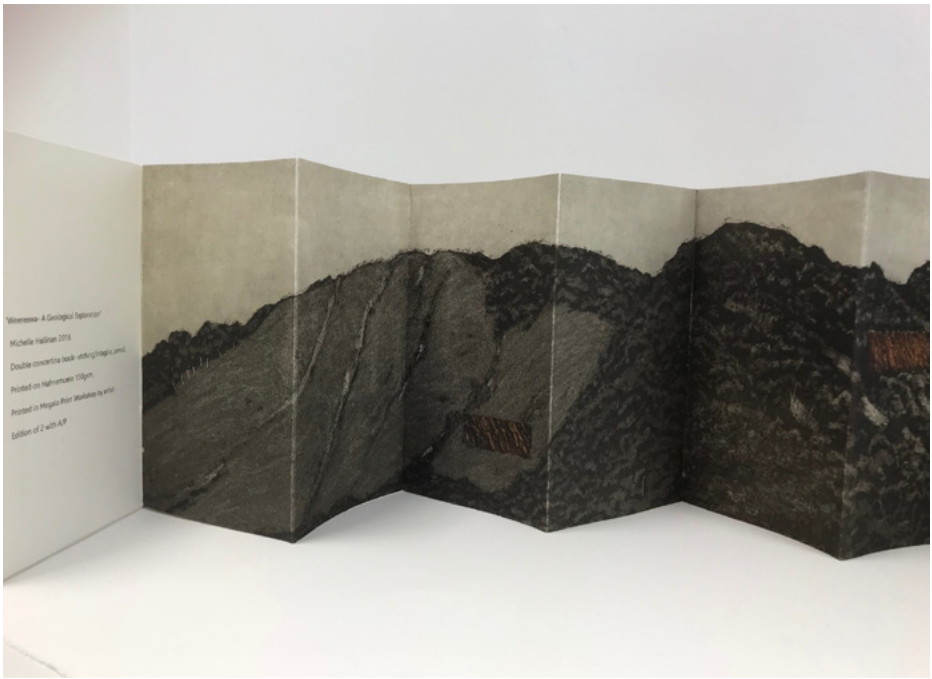
Michelle Hallinan, *Morphospecies Collective*, 2017,
print on kozo paper, perspex box,

Collaborator's statement - Professor Brad Pillans,
School of Physical and Mathematical Sciences,
College of Earth Sciences, ANU

Prior to our collaboration, Michelle and I had independently developed a love of the Lake George landscape from very different perspectives – she as an artist and me as a scientist.

The scientific study of landscapes involves a combination of field and laboratory information. Initially, I expected that Michelle would be drawn to the field – and she was – but she was also fascinated by some of the detailed laboratory work we were doing on sediment cores drilled from the floor of the lake. The cores revealed the 'hidden history' of the lake, a history completely unknowable from walking around the lake today.
The results of our collaboration are both pleasing and surprising, representing aspects of the Lake George landscape from the macro-scale (geological structure) to the micro-scale (minute fossil pollen and spores preserved in the subsurface sediment). Michelle's artistic vision of the Lake George landscape seeks to capture these vastly different scales, in three contrasting, yet complementary pieces of work. The first, an artist's book, represents the rocks that control the major elements of the landscape. The second, incorporating suspended prints, focusses on the sediment cores, taken from beneath the lake floor. The third, is a small display box containing delicate etchings of tiny pollen and spores normally only seen under a high-powered microscope.

Our collaboration reaffirms my long-held view that when art meets science, interesting things happen. Well done, Michelle!



Michelle Hallinan, *Weereewa a geological exploration, 2017*
double concertina book, etching / aquatint / pencil
19 x 63 x 22 cm
edition of 2

ELLA WHATELEY

My research interests centre on the ways that the visual arts can challenge the senses and create affective encounters for the viewer. My doctoral paintings were intended to disrupt the ways in which human beings perceptually understand three-dimensional space; this collaboration has offered an opportunity to consider if temporal perception might also be a fertile ground to challenge preconceived ideas about reality.

Dr Peter Riggs of the Research School of Physics and Engineering has a gift for explaining difficult concepts. Having attended Dr Riggs' public lectures, I was delighted when he accepted my invitation to collaborate on a project centred on time perception. The invaluable benefit for me of this collaboration has been the opportunity to talk through challenging concepts with an expert on the nature of time. Consequently, I could fast forward past logical inconsistencies, to the heart of the subject matter that I wanted to explore.

Discussions with Dr Riggs on the forms that the conscious impressions of temporal experiences take, resulted in two bodies of work. The first was a six-month series of cyanotypes. Each piece was made by exposing sensitised paper to sunlight between 11am and 2pm, for between 1 and 20 minutes. The result was works that conform to the common-sense dynamic theory of time, in which time follows a linear flow from past to future. Grouped together in a temporally ordered series, *Cyan-of-the-times* evidences past time intervals to be experienced in the viewer's present.

Clarifying with Dr Riggs research by Droit-Volet et al into the subjective perception of time, particularly relating to passage of time and duration judgements, I then considered how to stimulate subjective temporal perceptions for the viewer by visually interpreting the researcher's experience sampling data. Building on their findings, that perception of time can be affected by heightened attention and emotion, the *Timespun 1-5* series explores what roles colour, tone and movement might play in affecting time perception. Since time perception becomes more

Ella Whateley, *Timespun 1*, 2018,
oil in perspex,40-46cm diameter

(subjectively) disrupted with longer durations of attention, I made artworks with the potential to engage viewer attention for longer than a minute.

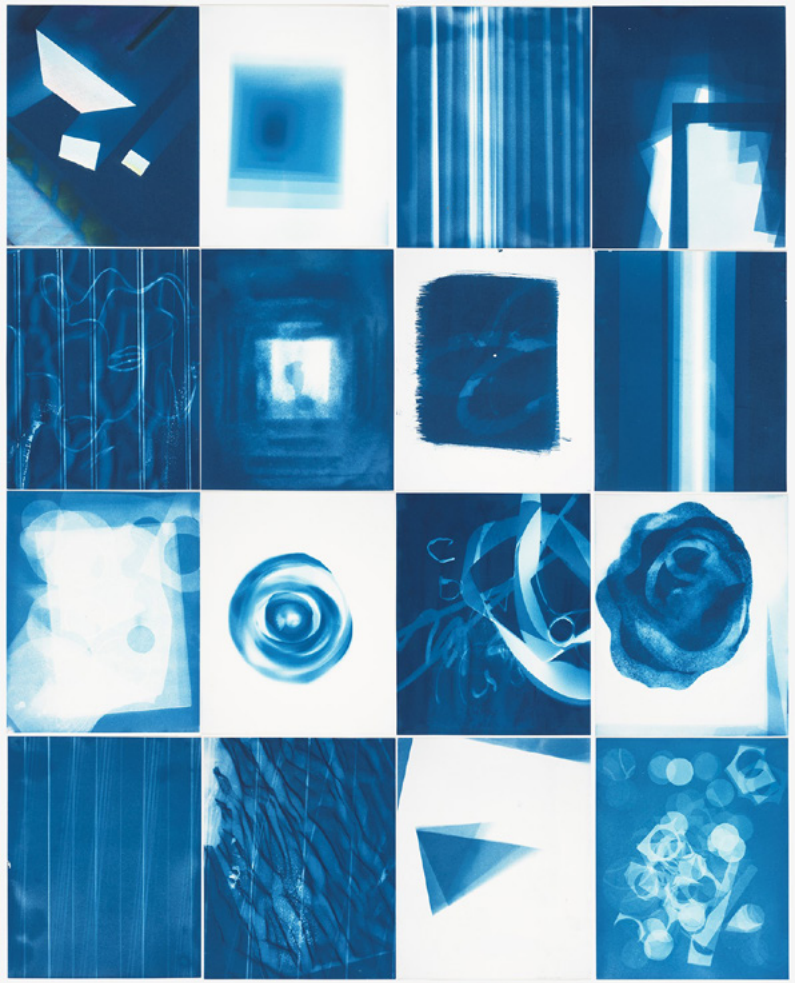
The resulting interactive works comprise of layered sets of painted discs that can be spun by the hand of the viewer, and that slow down at different rates. Past, present and future are subjective if the Block theory of time is correct. In becoming conscious of the subjective nature of time perception, these kinetic paintings invite the viewer to become aware of the subjective nature of human time consciousness.

Dr Riggs and I are already discussing future collaborations...

Dr Peter J Riggs
Research School of Physics and Engineering, ANU

Everyone perceives aspects of time, e.g. before & after, time 'passing', durations of time. However, portraying aspects of time in artistic forms is particularly difficult if the artist's only means is that of a single, static painting or object. Dr Ella Whateley has been investigating, over the last few years, how to produce art forms which would allow the viewer to experience some kind of temporal effect. In her 2017 VCAFS project, Ella has focused on one component of human temporal awareness – duration perception, i.e. estimations of the time intervals between perceived events.

These judgements can vary such that different people witnessing the same events may not perceive the time interval between the events to be equal. Ella's pursuit of the artistic portrayal of duration perception has connected well with my own ideas on time perceptions and our collaboration has proved beneficial. Temporal awareness is dependent on the normal functioning of the human brain. However, there is no widely accepted explanation for how time durations are encoded in the brain. Despite this lack of understanding, duration perception (and its variation from person to person) has been linked to visual stimuli by specific colours, to people's emotional states, and to their attentiveness when the relevant perceptions are registered in the brain. Ella has succeeded in producing art pieces that draw on these factors so that the duration perception by a viewer of these art pieces might be affected. This is a notable achievement.



Ella Whateley, *Cyan-of-the-Times* (4 square), 2017
cyanotypes and mixed media,
122 x 202 cm

TRANSDISCIPLINARY RESEARCH PARTNERSHIPS AT THE AUSTRALIAN NATIONAL UNIVERSITY

In 2013, Dr Anthea Callen, Professor of Art in the-then School of Art at the Australian National University (ANU) proposed a new program supporting the pursuit of partnerships between artists and researchers across the various colleges of the university. Dr Callen recognised that the ANU, as a research-intensive university with an expansive conception of the potential impact of new knowledge, offered a distinctive opportunity to expand innovative research collaboration between art and other disciplines. In addition, numerous specialist centres—encompassing climate change, demography, national biography, the Asia-Pacific region and many other fields—had established a dynamic culture of cross-disciplinary research. Higher degree research students from the School of Art had already established research partnerships across the campus, especially in fields such as science and mathematics in which new digital imaging and data visualisation technologies were being introduced.

With a five-year funding commitment from then-Vice Chancellor Professor Ian Young, the first cohort of researchers commenced in 2013, under the title of Vice-Chancellor's College Art Fellows Scheme (or VCCAFS).[1] Professor Callen's proposal defined collaborative research partnerships between artists and other researchers across the ANU as trans-disciplinary. She suggested that trans-disciplinarity emerged when "the visual artist and the scientist (for example) work on a project or research question that requires the boundaries of each discipline to be crossed more deeply than is usual. Driven by a more profound level of inquiry, this is a challenging process resulting in new research outcomes that sit outside the originating disciplines." [2]

The proposal recognised that both the sites of disciplinary practice and the formations of knowledge were changing. New technologies, new material needs, new social challenges, new structures and philosophies of knowledge were all changing the landscape of research and the character of outputs. Artists within the university system felt these changes more directly than many researchers. The incorporation of schools of art into the university system had commenced in the 1980s, and was followed by a rapid succession of general changes in higher education policy: policy demands around research funding, degree structures and international equivalence, and investment in research metrics, impact and engagement measures.

The status of research in the arts—still referred to, tellingly, as Non-Traditional Research Outputs or NTROs—was debated worldwide. Some responses were pragmatic, focussing on the assimilation of artistic practice into familiar degree, funding and publication structures. Other were emotional, even existential, focussing on perceived conflicts between professional systems and the avant-garde tradition. Still others opened up complex reflections on the kinds of knowledge engendered in art practice: the tacit knowledge of the maker, the challenging 'boundary thinking' of experimental art, even the possibility of 'unknowing' as the essential condition of an artist's thought.

In simpler terms, the pattern of inquiry established by VCAFS researchers over the first five years of the program can be located within a typology of knowledge proposed by Henk Borgdorff, Professor of Theory of Research in the Arts, Leiden University. There is knowledge 'for' art; the instrumental 'know how' of making, associated with a traditional, workshop-based art education. There is knowledge 'of' art; the reflective and interpretative knowledge driving understanding of art's history, status and agendas. And there is performative knowledge, "an endeavour in which the production of art is itself a fundamental part of the research process, and whereby art is partly the result of research." [3]

It is this last category—informed by the second, with its consciousness of historical changes in the character of art—that has shaped the research collaborations of the VCAFS artists. Their projects consistently investigate new methods of making and presenting art, arising from their engagement with new problems, procedures and challenges emerging in research fields beyond the traditional fields of art. They all recognise, as Borgdorff puts it that "higher education in the arts is—or ought to be—the place where the cultural past meets current practice, and the future is prepared; questions are asked that have no answers yet; and respect for the continuously reassessed wealth of cultural tradition joins with a keen sense of the urgent and with the exploration of the uncharted." [4]

It is the process of collaboration—the experience of relocation to unfamiliar sites, systems, languages, tools, targets—that has propelled VCAFS researchers to ask what art might be now, and what knowledge it might manifest. The strength of the collaboration lies in the fact that their partners are asking similar questions of their own, different disciplines.

Over the past five years, the activities of the almost 30 researchers and their collaborators (listed on page 34 of this publication) have given an indication of how performative research—research through art—has taken shape in partnership with academics in geology, law, computer engineering, environmental studies, biology and many other disciplines.

A common meeting ground is field work, an historically-grounded research method, employed by numerous disciplines, that takes researchers off campus and out of the studio, office or laboratory. There are several overt points of commonality between practices of field research in general and those of artists: direct observation is foremost, but also a sensitivity to site and circumstance, and an alertness to distinctive phenomena. Significant shared dialogues occur around matters of experimental method: the consciousness of the ways in which site selection, mode of observation and medium of data reporting can subjectively, even emotively, shape research findings.

There are also some deep disciplinary alliances. Artists were integral to many of the great scientific voyages of discovery and the legacy of Von Humboldt still informs artists' engagement with landscape and environment. Many disciplines—archaeology, palaeontology, botany—have regularly partnered with the visual arts in the pictorial reconstruction and communication of research findings and hypotheses.

For contemporary artists, these historical dialogues have been reshaped by new tools and concepts which both extend and challenge the idea of research. VCAFS researchers have turned to digital technologies that impinge upon the entrenched relationship between seeing and knowing. New computer-imaging technologies offer more detailed and more manipulable visual data. And this data can be communicated in dynamic and combinatory ways: animated, integrated and interactive. Research data and the presentation of findings can be mobilised: delivered on diverse platforms, layered, collaged and reconfigured.

Returning to Dr Callen's initial proposal, we might say after five years' of collaboration that the sensibility of contemporary art brings a distinctive challenge to systems of knowledge. Mobilised and globalised, contemporary art is decentred and deterritorialized. It can exercise a trans-disciplinary curiosity that positions knowledge as a subjective, performative and perhaps unsystematic construct, exhibiting what Peter Osborne calls a "unity in disjunction." [5]

At the same time, a striking outcome of collaboration is artists' passion for the disciplines, expressed in their fascination with what might be called disciplinary imaginations. That is, artists' reflection on the identity, values and behaviours of disciplines in a time of institutional and political change. VCAFS researchers have been particularly drawn to the less tangible but nevertheless critical attributes of research fields: to the idea that inquiry bridges cultures rather than merely acquiring data, that knowledge is a kind of imagination, that a researcher's will to know manifests in desire and passion, not just in sober professional practice.

All researchers today are consciousness of a range of conceptual challenges to knowledge. How do new tools, practices and modes of circulation shape knowledge? How are national and global research agendas set, and for what purpose? What forces are shaping the pursuit, formation and consumption of knowledge? Where does knowledge stand in a 'post-truth' world? What contemporary artists bring to such debates is their continued commitment to two enigmatic ideas; the 'horizon' and 'boundary thinking'. The horizon serves as a metaphor for knowing, inquiry and discovery; it is "an image that demarcates the possible and the impossible, what can be seen and what cannot". [6] In thinking of the horizon, and other intangible boundaries, the contemporary artist uses performative research to manifest change: "It reveals itself in the creation of other ways of instituting, in establishing another horizon . . . the task is not just saying the same things with new words, but rather the creation of a new language." [7]

[1] The collaborative program has steadfastly resisted all efforts to devise a streamlined title. Over the years it has variously been called the Artist Research Fellowships, the Vice-Chancellor's College Visiting Artist Fellows Scheme and the Vice-Chancellor's Artist Fellows Scheme. Thankfully, common usage has now distilled the program down to the more-manageable 'The Fellows'.
[2] Anthea Callen, 'Artist Research Fellowships: art/science/social science/humanities collaborations', April 2013, internal memorandum, VCAFS program records, School of Art and Design, ANU.
[3] Henk Borgdorff, The Conflict of the Faculties: Perspectives on Artistic Research and Academia, Leiden University Press, Leiden, 2012, pp. 17-21.
[4] Borgdorff, p. 60.
[5] Peter Osborne in Armen Avanessian & Luke Skrebowski (eds), Aesthetics and Contemporary Art, Sternberg Press, Berlin 2011, p. 108
[6] Maria Hlavajova, Simon Sheikh, Jill Winder, 'Introduction', in their On horizons: A Critical Reader in Contemporary Art, BAK, Utrecht, 2011, pp. 11–12.
[7] Simon Sheikh, 'Vectors of the Possible: Art Between Spaces of Experience and Horizons of Expectation', in Hlavajova, Sheikh and Winder, On Horizons, p. 154–55.

FELLOWSHIP COLLABORATIONS 2013 - 2016

2013

Dr Vanessa Barbay
with Theresa Ardler and the School of Archaeology and Anthropology, College of Arts and Social Sciences

Dr Michael Edwards
ANU College of Business and Economics

Dr Kirsten Farrell
with Dr Julia Miller, ANU College of Asia and the Pacific

Dr Jay Kochel
with Dr Tim Brook and Dr Alistair Riddell, ANU College of Engineering and Computer Science

Dr Erica Seccombe
with Professor Tim Senden, ANU College of Science

Dr Amanda Stuart
with Dr Kirsten Wehner and Dr George Main, People and Environment Division, National Museum of Australia

2014

Dr Sally Blake
with Dr Russell Barrow, ANU College of Physical and Mathematical Sciences

Dr Julie Brooke
with Dr Vanessa Robins and Professor Stephen Hyde, ANU College of Physical and Mathematical Sciences

Dr Kirsty Darlaston
with Professor TAMAs (Tom) D Gedeon, ANU College of Engineering and Computer Science

Dr Nicola Dickson
with Associate Professor Bronwen Douglas, ANU College of Asia and the Pacific

Dr Ursula K Frederick
with Dr Sally Brockwell and Distinguished Professor Sue O'Connor, ANU College of Asia and the Pacific

Dr Alison Munro
with Dr Vanessa Robins, ANU College of Physical and Mathematical Sciences

2015

Dr Liz Coats
with Professor Krsztina Valter, ANU College of Medicine, Biology and Environment

Mr Matt Higgins
with Emeritus Professor Elmars Krausz, ANU College of Physical and Mathematical Sciences

Dr Steven Holland
with Professor J Scott Keogh, ANU College of Medicine, Biology and Environment

Dr Ivo Lovric
with Professor Margaret Thornton, ANU College of Law

Dr Carolyn Young
with Dr Sue McIntyre, Dr Phillip Barton and Associate Professor Adrian Manning, ANU College of Medicine, Biology and Environment

2016

Dr Tony Curran
with Dr Ben Swift, ANU College of Computer Science and Engineering

Ms Ngaio Fitzpatrick
with Professor Mark Howden, ANU College of Medicine, Biology and Environment

Dr Cathy Franzi
with Professor Adrienne Nicotra, ANU College of Medicine, Biology and Environment

Ms Jen Fullerton
with Associate Ptofessor Krisztina Valter and Dr Alexandra L Webb Medical School, ANU College of Medicine, Biology and Environment.

Dr Anna Madeleine
with Dr Alexandra Webb and Associate Professor Krisztina Valter, ANU College of Medicine, Biology and Environment

Ms Jennifer Robertson
with Emeritus Professor Ian Jackson, ANU College of Science

VANESSA BARBAY - 2013 FELLOWSHIP

SCHOOL OF ARCHAEOLOGY AND ANTHROPOLOGY
COLLEGE OF ARTS AND SOCIAL SCIENCES

The aim of my project linking painting with visual anthropology is to document and analyse the effectiveness of collaborative art process in evidencing crosscultural exchange. Following my PhD research, which included cross-culturalresearch in Western Arnhem Land among Kunwinjku speaking artists living in Kunbarlanja and surrounding outstations, I wanted to solidify the cross-cultural research experience by producing collaborative works. Choosing the field of visual anthropology, I aim to promote the value of arts practice as a research tool with outcomes that visually and materially provide evidence of cross-cultural exchange. I have chosen to return to my familial community on Jervis Bay to work with childhood friend and painter Theresa Ardler, a Gweagal – Dharawal woman from Wreck Bay community. She states: “The motivation that was installed within me I inherited from a long line of artists within my family, mainly a strong influence coming from my mother Jessie Ardler and grandmother Gladys Ardler.”

Theresa’s academic focus is education and the merging of Catholic and Koori cosmology. Her paintings adorn schools, Catholic churches including the Vatican in Rome, national and international institutions such as The National Museum of the American Indian in Washington D.C. Her work is also held in the private collections of Former Governor General of Australia (Sir William Deane) and Cardinal George Pell (former Catholic Archbishop of Sydney). Theresa states: “My most common medium is acrylic paintings on stone, wood, and canvas. Other materials are weaving, sculptures and charcoal drawings. My main art style is dot painting using my own characters to represent me and my area where I live along by the sea.” Theresa and I share the wonderful experience of growing up in the pristine coastal environment of the Yuin nation and we have strong ancestral links to the area and the Sydney region of the Eora where we were both born in 1972.

Vanessa Barbay*, Body Map (Spring Stingray)*, 2017
stingray, bitumen, oil, delek and rabbit skin on canvas
73 x 88 cm

Our lives have been cross-cultural and merged formative familial and institutional education in Catholic and Koori worldviews. Our collaborative works reflect this through the subtle exchange of materials (I work with traditional Aboriginal pigments and she works with acrylics) and a shared passion for the natural world of our pristine childhood home. Our subject for this body of work is the local animal inhabitants; Theresa works in a unique Koori style combining iconic figures and dotted fields, while I work from my father's taxidermy collection and that of museums of natural history creating iconic yet naturalist figures on plain colour fields. We have also painted into a work produced for my PhD project whose practice-led component involved 'collaborating' with deceased animals hit by vehicles or shot by hunters. A decomposing echidna made the work we have chosen, and Theresa and I talked ourselves through the process of how to interact using the earth pigments I collected in Arnhem Land. I explained to her that the yellow pigment karlba was the fat of the emu and noting the oily stain leaching out from the echidna's body print decided we should 'paint the fat in' using Theresa's dot technique. Then Theresa decided we should use the red and black pigments to denote the sand and earth landscape over which the echidna roams, and which relates to our 'country'. She designed alternating bands of colour radiating out from the fatty 'halo'. Our current works in process depict the crab and the turtle.

I have extended this collaborative research method into the wider community by becoming the vice president of Jervis Bay and Basin Arts and organising a community collaborative art exhibition and prize during the biennial See Change festival in the area during May-June 2014. The title is Synergy and I have invited artists and non-artists from all areas and cultural backgrounds to produce works in any medium involving 2 or more people. Artists from the Wreck Bay community have been encouraged to enter and I have liaised with schools and seniors organisations in addition to the Jervis Bay and Basin artist network. I am looking forward to the outcome of this research into the power of collaborative art to facilitate intergenerational and cross-cultural exchange. I have seen the benefits of this way of working in Arnhem Land where families paint together and communicate cross-culturally through painting practice and its ability to transfer and evidence knowledge.

Vanessa Barbay, *Slipstream (Autumn Stingray),* 2016
stingray, bitumen, oil, delek and rabbit skin on canvas
93 x 76 cm

TONY CURRAN - 2016 FELLOWSHIP

RESEARCH SCHOOL OF ENGINEERING
ANU COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

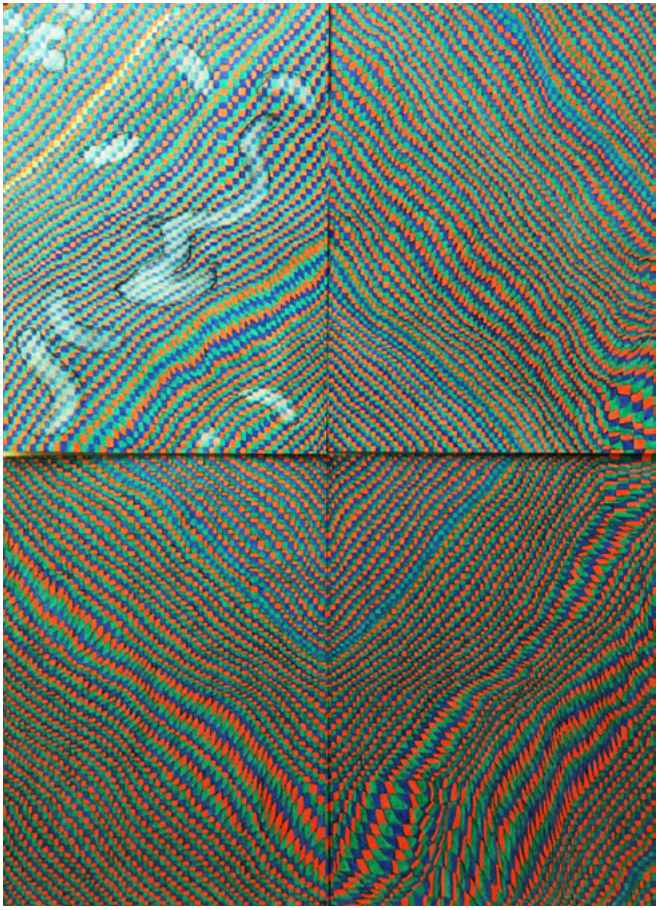
Towards the end of 2015 I became aware of a paradox in my painting; the brushstrokes looked simultaneously hand-made and machine-generated. Having used iPads as sketching tools for several years, the mark of the computer rendered lines and shapes with hard edged digital precision. With a touch screen, a gestural and embodied abstraction was rendered in a mechanical aesthetic. The best description I could think of was a line from Walt Disney Picture's TRON: Legacy (2010) in which Kevin Flynn (Jeff Bridges) says of programming life in the digital space, "It's Bio-digital jazz, man."

Dr Ben Swift of the ANU Research School of Engineering generously accepted my invitation to collaborate on a project to explore this union of the human and machine, testing the hypothesis that digital art with an equal balance of human gesture and mechanical structure has the potential to make digital art powerfully compelling.

The collaboration had three distinct phases. Informed by historical and theoretical texts on digital and computer art, the collaboration began with regular consultation between Dr Swift and myself towards a program I was making titled *The unconscious is a rectangle*. The function of the program was to use shapes from previous digital drawings that I had produced over the last five years. These shapes would be stored in a database and randomly collaged on top of other shapes to generate an infinite variety of compositions from the biomorphic shapes and wiggles.

In order to tweak the program, the collaboration moved onto a second phase in which I audited a programming course, 'Art and Interaction in New Media', convened by Dr Swift. This course introduced me to the programming language, Processing, which enabled me to build *The unconscious is a rectangle* and exhibit it at Canberra Contemporary Art Space and Wagga Wagga Art Gallery.

A firmer grounding in code, achieved through processing produced a new phase in which Dr Swift and I coded together through back and forth emails generating new iterations of a program that generates random algorithmic wiggles. These periods of gradual development have so far resulted in a program in which mathematic wiggles produced by vector curves behave as cartoon amoeba wiggling and shifting as if viewed under a microscope.



Tony Curran, *Wiggles and grids,* 2018,
Watercolour and gouache on paper,
594 x 420mm

Collaborator Statement – Dr Ben Swift, Research Fellow, Research School of Engineering, ANU College of Engineering and Computer Science

As Tony Curran and I began working together, we found a shared interest in exposing the process of our craft. I saw in his ongoing time-lapse drawing work some similarities to my own work in live coding – the process of writing software in front of an audience. As we discussed our reasons for exposing the construction of our work, rather than just showcasing the finished product, we discovered a shared interest in finding the outworking of human creativity through this mechanical process, rather than hiding the mechanical processes from the viewer.

Over time, it became clear that Tony had greater ambitions in his digital work, but was limited by an unfamiliarity with the languages of programming. As someone who teaches programming to artists (and creative code to programmers) we decided that the most useful path for our collaboration was for me to assist Tony to develop his programming skills. This became the subject of our (almost) weekly meetings.

Throughout this process, I was still committed to my “capture & expose the process” aesthetic. In software development, version control tools such as Git exist for exactly this purpose; to track and manage the evolution of a software artefact as it is developed through time. For the final stage of our collaboration, Tony and I have been exploring his drawing-inspired squiggle programs through a collaborative back-and-forth coding process, and I have been using version control tools to track the progress of our collaborative efforts. This history will be preserved, and we are still exploring ways to expose this history to the viewer.

This collaboration has been extremely beneficial for me as a practitioner who tries to engage with digital and process art, but mostly from the Computer Science side. Through working with Tony I have been able to filter his aesthetic vision through my own computational and software development expertise which is intertwined with my interest in exposing the artistic process.

Tony Curran, *Sleeping to remember you existed*, 2017, oil on polyester, 111 x 83 cm.

KIRSTY DARLASTON - 2014 FELLOWSHIP

COLLEGE OF ENGINEERING & COMPUTER SCIENCE
RESEARCH SCHOOL OF COMPUTER SCIENCE

After participating in Dr Sabrina Caldwell's experiment using eye-gaze mapping technology I became obsessed by a graphic representation of the movement of my eyes, created as they were looking at a photograph of a man in front of patterned wallpaper. I drew, stitched and marked out with pins and thread, the image, comprising of dots for the parts that are seen and lines, or saccades, representing the quick pull of the eye from one place to another. I threaded string between my fingers and stretched out a cats cradle across the photograph, mimicking the stretch of the movements of my vision. My journal entries at the time use the macro language of the body to try to understand what is happening in the minute level of my eyes, through movements that I can visibly make: stretch, pull, jerk. As a practitioner who navigates the world through movements of the hand, I was in a process of coming to terms with what the eyes can do and how fast they can do it.

Journal extract:

24/7/2014
I think that I would like to walk the pathway of the eye gaze tracking lines. In the past few months I have stitched, painted, and filmed myself pinning the saccades and fixations into the wall. I used the same image each time, the lines that my eyes made on the image of the Chinese business man while S. [Dr Sabrina Caldwell] asked me questions about what the image contained in her initial experiment. The lines and dots have become a familiar and complex version of a signature. Now I think I want to know that jerking feeling of the eyes with my whole body.

Kirtsy Darlaston, *Hand Eye Coordination* (still from video), 2014,
video animation

The three-dimensional nature of the stitching and the pin-work has given me a different view of the eye gaze tracking marks. As a textile artist I think I needed to give the lines and dots some physicality. Textiles exist somewhere between object and image, which to me is somehow analogous to the tracking marks existing between the fleshiness of body of the viewer and the representational mechanisms of the tracking software. The jagged pull from side to side of the tracking marks seems to be directly related to the four muscles that are connected to the 'eye ball', jerking it backwards and forwards in the socket.

My discussions with Professor Tamas (Tom) D Gedeon, Adjunct Professor Richard Jones, and PhD students Dr Sabrina Caldwell and Martin Henschke, opened up ways of thinking through and conceptualising vision. It is common for there to be a feeling of disconnection between the body and maps of the body produced by technologies such as those used in medical imaging. It is this disconnect, between the embodied experience of seeing, and the lines and dots of the eye-gaze tracking software that show what my eye can do that I explore in the animation *Hand eye coordination*.

Kirtsy Darlaston, *Hand Eye Coordination* (still from video), 2014,
video animation

NICOLA DICKSON - 2014 FELLOWSHIP

ANU COLLEGE OF ASIA AND THE PACIFIC

During my Vice Chancellor's visiting Artist Fellowship in 2014 I had the opportunity to work within the College of Asia and the Pacific joining a project, 'Collecting in the South Seas' initiated by Honorary Professor Bronwen Douglas. The project was a component of Pacific Presences, an ongoing research project organised by Cambridge University which is investigating largely unstudied ethnographic collections that entered European museums during the nineteenth and early twentieth centuries.

The focus of 'Collecting in the South Seas' was the varied collections assembled during the expedition commanded by Joseph Antoine Bruni d'Entrecasteaux to Tasmania, the Western Pacific Islands and Indonesia in 1791-4. The range of artefacts amassed include written journals, maps, natural history specimens, drawings, vocabulary lists and the cultural artefacts of peoples encountered .

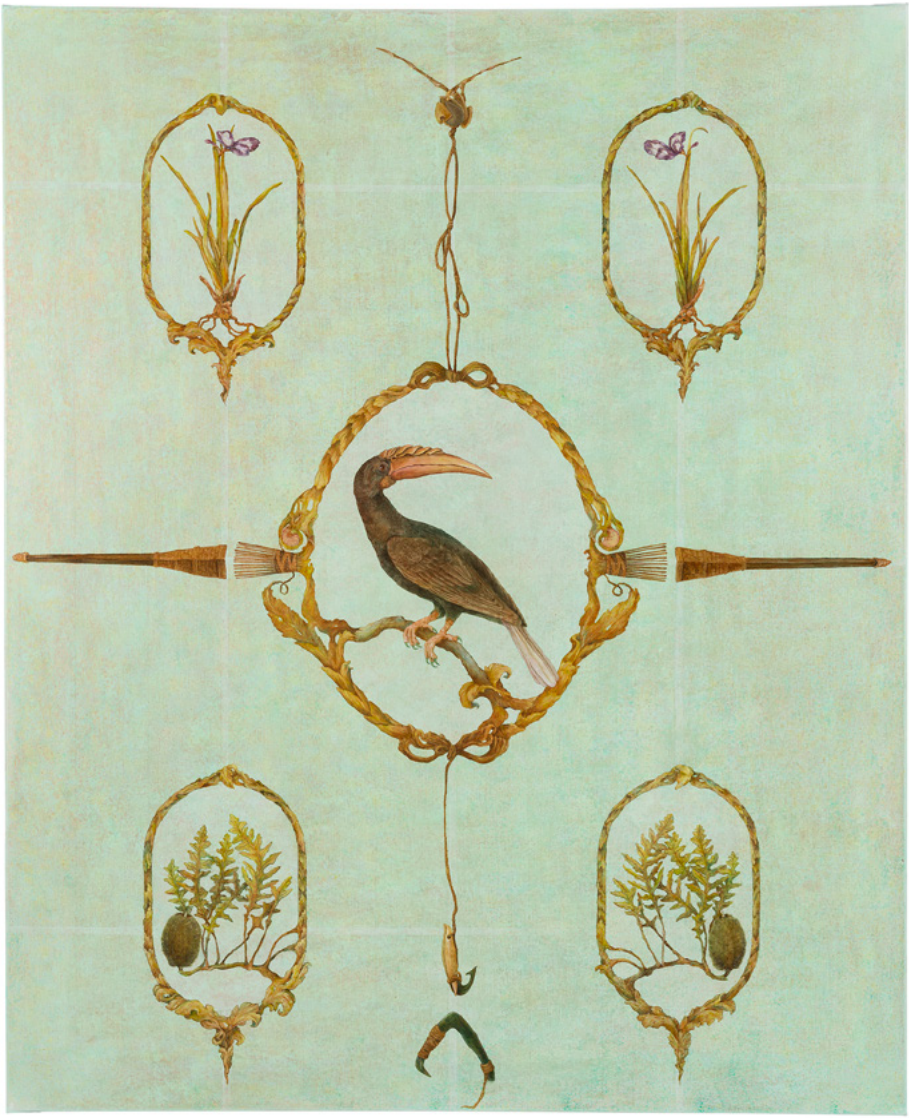
My role in this project was to creatively respond to the visual record generated by the neo-classical artist, Jean Piron, who accompanied the voyage. My response took the form of a series of paintings on traditional supports and objects which were exhibited in 2015 at Canberra Museum and Gallery and in 2016 at the Alliance Française, Melbourne. I also contributed a chapter detailing my response to Piron's drawings in a book which was the primary outcome of the 'Collecting in the South Seas' project as a whole. This book will be published by Sidestone press later this year. In 2015 I was invited by Professor Douglas to present a paper at the Material Encounters conference at the National Library. The paper I gave will join the others presented for submission for publication in the Journal of History and Anthropology.

The fruitful impact of the fellowship continued beyond completion of 'Collecting in the South Seas'. Stimulated by viewpoints and the knowledge presented by various historians and anthropologists during the project, I have continued to make work exploring the visual record of the D'Entrecasteaux voyage. I received project funding from ArtsACT to undertake fieldwork in 2016 to the landing sites of the D'Entrecasteaux voyage in South Eastern Tasmania. Works derived from this project are currently on exhibition at the Allport Museum and Gallery, Hobart. In 2017 I was awarded a residency at the Cité Internationale, Paris for 3 months by the Institute Français to commence a project that engages with the movement of plants between Australia and France collected on the D'Entrecasteaux and Baudin voyages. Work made during and in response to research during the residency will be exhibited at the National Portrait Gallery, opening June 28, 2018.

Nicola Dickson, *Pie de la Nouvelle Calédonie after Audebert*, 2014
acrylic and oil on linen,
137 x 111 cm.

Collaborator Statement - Adjunct Professor Bronwen Douglas
Impressions and experience of collaborating with a visual artist in the Bruni d'Entrecasteaux project.

For the past year, Nicola Dickson has been a key member of a multidisciplinary transnational project I am coordinating on 'Collecting in the South Sea'. It tells the story of collecting and collections made during the French scientific voyage led by Bruni d'Entrecasteaux to Tasmania and the southwest Pacific in 1791-1794. The materials amassed encompass multiple mediums, from ethnographic artefacts and natural history objects to writings and an exceptionally rich visual archive. It has been an enormously instructive pleasure to work with Nicola and confirm that practice-led research is as vital and viable in the Humanities as in art itself. Her signature technique embodies a singular combination of art and history, engaging imaginatively with the past to quote, transform, and re-present 18th- and 19th-century exotic imaging of Oceanian subjects. For this historian, the results are aesthetically, emotionally, and intellectually inspiring. I am certain that the product of our collaboration is much greater than the sum of our individual contributions.



Nicola Dickson, *Calao de Ile de Waygiou after Audebert,* 2014
acrylic and oil on linen,
137 x 111 cm.

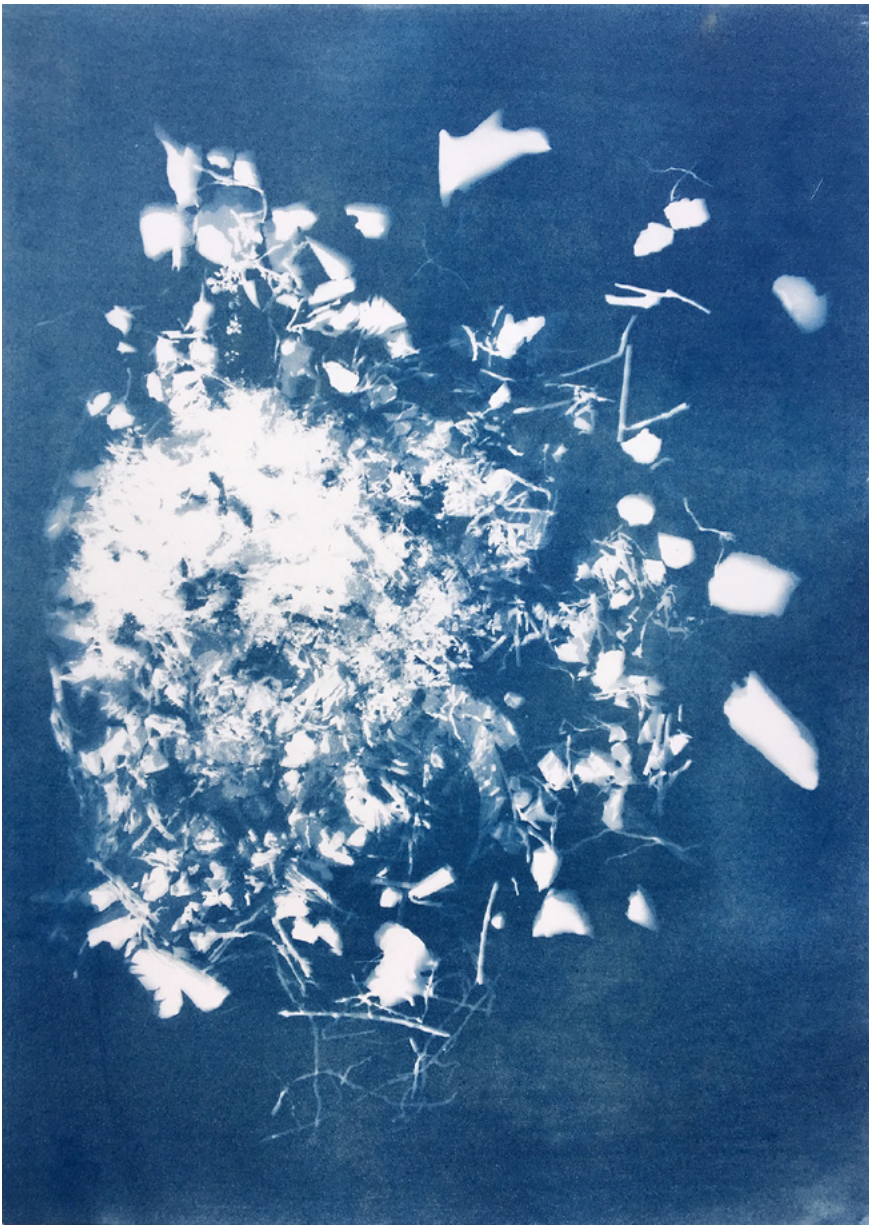
URSULA K. FREDERICK - 2014 FELLOWSHIP

ARCHAEOLOGY & NATURAL HISTORY
SCHOOL OF CULTURE, HISTORY & LANGUAGE
COLLEGE OF ASIA & THE PACIFIC

My approach to being a VCAFS fellow in the Department of Archaeology & Language was motivated by two key interests. Primarily I wanted to consider the role that photography has played in the construction and communication of archaeological knowledge. A secondary aim was to explore the shared terrain of archaeology and art as practice-driven research processes. I sensed that so many of the activities that contribute to archaeological scholarship, but which rarely feature in its discourse, had much in common with the work of the artist. I am thinking, for example, of experimental efforts at making stone artefacts or the acute understanding of materiality that is acquired through the daily handling of objects.

I especially became interested in the many optical devices used by archaeologists in the recording, analysis and dissemination of their research. From macro-photography to the aerial mapping produced with drones and satellites, the visualising technologies employed in archaeology vary enormously. In keeping with my efforts to understand photographic practice through archaeology, I undertook a visual ethnography of the department. As I sought to capture the diversity and scope of the department's research through my camera, I was struck by the many places, cultures, times, and individuals enfolded within it. The accumulation of different ideas and agents (geologies, ecologies, people, landscapes, elements) from many 'pasts' all collapsed into a single present seemed to express the challenge of the discipline itself. Archaeology is a knowledge system comprised of re-contextualised fragments which, when harnessed collectively, frame a vision of our world and the humanity that has made.

My series *Small Finds* aims to communicate this insight. It is an assemblage of my photographs printed onto pieces of wall rubble which I retrieved from the department as it was being refurbished. In this way the work literally draws upon the physical fabric of the School's environment. Ironically, these wall fragments have made their way back into Coombs building and are currently on public display in the Department of Archaeology and Natural History's third floor exhibition space. To print on these bits of plastered brick I used the School of Art and Design's unique Inkjet Research Facility, and by experimenting with this process I was able to realise another series, *Ghost of Small Finds*. This series reveals only the abstracted traces of Small Finds, both in terms of the physical fragment that is missing (as blank space or shadowy shape) and the residue of the photographs rendered here only as ink spray.



Ursula Frederick, *Marnkgala, 6mm unsorted sieve, 2018, cyanotype, 297 x 420 mm*

In terms of my personal art practice and research, the Fellowhip was particularly fruitful and enabled me to pursue a new area of enquiry for which I was awarded an Australian Research Council Discovery Early Career Research Award (DECRA). My postdoctoral project *Visualising Archaeologies* offers an exciting opportunity to explore the potential of creative practice in archaeology and heritage research, and which I consider to be another outcome of my experience as a VCAF. Through my DECRA project I continue to collaborate with archaeologists at ANU (CAP and CASS) as well as other archaeologists and heritage professionals at other universities.

In 2018, at the invitation of Associate Professor Anne Clarke (University of Sydney) I began documenting boxes of archaeological material from Groote Eylandt, in the Northern Territory. Annie was in the process of repatriating this material and work with local Anindilyakwa people to process the excavated site contents and sort it on their country. Some of the material had already been sorted by Annie during her research, and the difference between this material, and the unsorted bags of mixed materials was stark. As I was making cyanotypes of some of this material in the wet lab at the University of Sydney, I would text Annie a picture of the print to see if she could recognise what I was working on. Every time she was able to correctly identify the shell species without hesitation. To me this illustrated how knowledge is acquired and embodied through practices of doing. And in Annie's case after years of sifting through fragments of shell, she was able to discern individual species simply from their stencilled trace. In the series of diptychs on display I hope to synthesise the archaeological sorting process by depicting what they start out with, a mess of entangled materials, and the results they end up with, an identifiable and ordered set of data.

2014 Collaborator Statement - Dr Sally Brockwell, ANU College of Asia & the Pacific

In 2014, Dr Ursula Frederick was a visitor in the Department of Archaeology and Natural History in the School of Culture, History and Language, College of Asia and the Pacific collaborating with Professor Sue O'Connor and myself, both archaeologists. Her broad research interest involves how human beings are shaped by their surroundings and likewise how people create their worlds. Archaeology as a discipline relies heavily on visual media, from photographs, maps, artefact and section drawings, to graphs, symbols and more. In this project, Ursula has used her experience as both artist and archaeologist to explore the synergies between art and archaeology. Her nature of archaeology as material culture. She spoke to staff and students, recording and photographing their activities in their offices and the lab sorting stone artefacts, shell, bone, etc. as well as the objects themselves.

As part of the project we convened a session “Visualising Archaeology” at the 2014 Australian Archaeological Association conference and curated *Ground Truthing*, an art exhibition which brought together artworks that convey an archaeological sensibility. Collaborating with Ursula has opened my eyes to the many ways visual media can express and reveal the intrinsic nature of not just archaeology but archaeologists themselves. I look forward to our future work together.

2018 Collaborator Statement – Associate Professor Anne Clarke, The University of Sydney

Although I have worked with Ursula on a number of projects previously, we have never had the opportunity to collaborate creatively. Recently I have been involved in a project initiated and supported by the Anindilyakwa Land Council (ALC) to repatriate archaeological materials I excavated on Groote Eylandt in the 1990s. As well as returning material already sorted and analysed as part of my long-term research, this also meant working with my Anindilyakwa colleagues to process many bags of unsorted midden material into charcoal, stone, bone, shell and ochre. I invited Ursula to document this repatriation process as part of her DECRA project and with the support of the ALC she visited Groote Eylandt this May. Before that Ursula photographed the Groote Eylandt archaeological material in Sydney. This included making cyanotypes of both the unsorted layers of excavation and the various species of shell that could be found, identified and counted within these layers. By pairing the images of unsorted material with a collection of particular shell species (e.g. *Anadara granosa, Geloina coaxans*, etc) Ursula neatly sums up the results of many hours of identification and categorisation that we spend in the lab.

STEVEN HOLLAND - 2015 FELLOWSHIP

RESEARCH SCHOOL OF BIOLOGY
COLLEGE OF MEDICINE, BIOLOGY AND ENVIRONMENT, ANU

When Professor Scott Keogh suggested making a crown for the President of the Australian Society of Herpetologists (ASH) in 2013 I thought it was an interesting idea. In late 2014 the opportunity arose to realise it through the VCAFS program. The initiative would allow me to enter in a collaborative dialogue with a leading scientist in the field of elapid snakes and evolutionary biology. It also provided the opportunity to explore reptile and amphibian connections to the human mind through evolutionary and sociological research.

Studies have shown how the coexistence of primates and venomous snakes over millennia may have led to the development of the human neocortex. Located at the back of the brain is our vision system, which is good at spotting snakes hidden in the grass and camouflaged amongst leaf litter. Other sources of inspiration included art historical examples of serpents connected to the human head and the venomous snakes which may have inspired them. This can be seen in the way that the Egyptian cobra functions as a Uraeus (a symbol of divine or royal authority) worn by pharaohs and how the Southeast Asian King Cobra rises up to protect over Buddha during his Nirvana. With the vast biodiversity of Australian reptiles and amphibians perhaps I could develop an iconic image of an Australian snake and the human mind by making a snake crown for the ASH.

Steven Holland, *Australian Society of Herpetologists presidential crown,* 2016,
gold plated aluminium and bronze stand
30 x 20 x 23 cm

The project had several points of entry. Professor Keogh set me up in a spare laboratory at the Research School of Biology, Banks Building. From here I looked out onto a beautiful courtyard where Eastern Water Dragons and Long Neck Turtles wandered around under the trees and swam in the lily pond while people ate their lunch. Another was the history of the ASH which held its foundation meeting on 23 January 1964 at the Canberra High School; this building is now the ANU School of Art, where I have worked and studied for many years and where the crown would be cast. Another starting point was a shed skin that an Eastern Brown Snake left next to one of my outdoor bronze sculptures.

By flattening the skin out and tracing it onto tissue paper I used it as a template to make a wax model of the snake that would later become the aluminium crown. The size of the crown is based on the head of Murray Littlejohn, a founding member of ASH who pioneered the technique of recording frog calls in 1957. In honour of his work the dimensions of his head were used to make a head-last around which I twisted the wax snake.

Working with Professor Keogh, different types of amphibians and reptiles were selected to represent the biological scope of ASH. This involved locating museum specimens of a southern brown tree frog, two different kinds of baby turtles, a crocodile hatchling and a Thorny Devil that I modelled in plasticine, cast in wax and bronze and incorporated into a stand for the crown. As a work of art the crown will be complete when I present it to the ASH conference in Launceston on 18 February 2016. This is when the incoming president will guide the advancement of scientific study into reptiles and amphibians through the aims of the society for another 18 months. It is also when the crown can potentially have a life of its own; constantly forming connections to human minds devoted to understanding and protecting the unique fauna that encompasses herpetology.

Collaborator Statement - Professor Scott Keogh, Head, Division of Evolution, Ecology & Genetics, Research School of Biology

I am thrilled to have had the opportunity to host and collaborate with Steven Holland while he did his VCAFS research in the Division of Evolution, Ecology & Genetics in the Research School of Biology. I got to know Steven while he was doing his PhD in the School of Art. I am an expert on the evolution of reptiles and I was lucky that Steven felt it was important for his PhD that he had input from a scientist. We got to know each other well during this time and I encouraged Steven to attend a national scientific conference I was hosting. Steven did a gallery show and even presented a talk to 200 scientists. I am quite proud of this as it was the first ever art talk at our conference and Steven was a hit.

This experience evolved into the proposal Steven put in for the VCAFS program which was to create a piece of art that would become an integral part of the traditions of our national scientific society. Steven has developed a beautiful piece of art that will be used as the 'crown' for each newly elected president of the society. He also designed an extraordinary stand that is part of the artistic piece. This was a long process and I worked closely with Steven

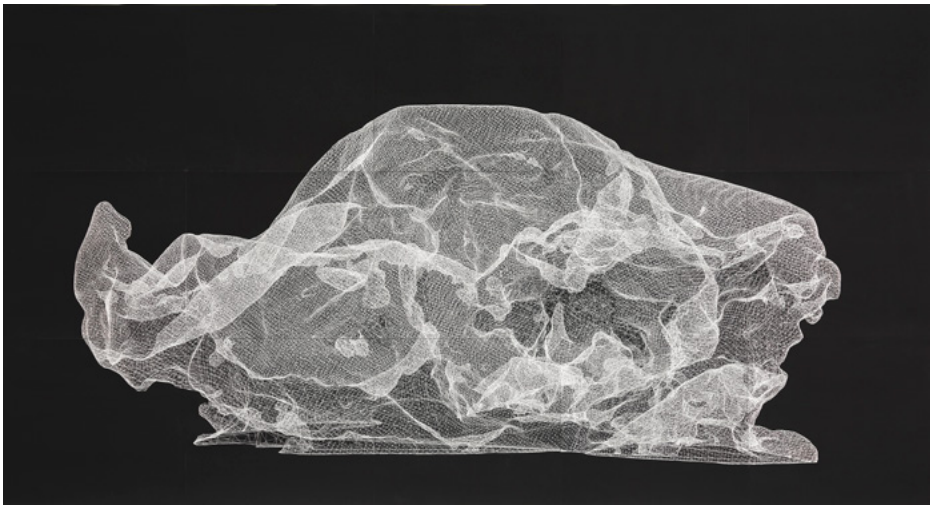
to discuss his ongoing work. Steven really did spend great amounts of time in my department in the studio we set up for him, which was next door to all of our PhD students. Steven integrated into our department in every way, came to our functions, and got to know us well. Everyone embraced this new thing of having an in-house artist. This culminated in a departmental seminar, which again, was a new thing for us. It's the first time we have had an art talk in what is always a scientific seminar series. Steven thrilled everyone by revealing his masterpiece right at the end of the talk. Every person in the audience came to the front and spent time touching the art and even trying it on. This has been a great experience for all concerned and I very much hope that the VCAFS scheme continues well in to the future.

JAY KOCHEL - 2013 FELLOWSHIP

RESEARCH SCHOOL OF COMPUTER SCIENCE
COLLEGE OF ENGINEERING AND COMPUTER SCIENCE, ANU

My Vice Chancellor's Fellowship was initially inspired by the research of Associate Professor Russell A. Barrow's work into the sexual deception by the Spider Orchid (Caladenia crebra) and its ability to produce an analogue pheromone to attract its male wasp pollinator - an encoded response to a very particular stimuli. My own work experimented with pictorial methods of representing pheromones, beginning with databases of 3-dimensional models, molecular approximations, and in turn translating these into machine driven drawings.

My Fellowship engaged with ideas of smell as a system of encoded interaction. The physical form of particular molecules activate the protein receptors within the nose, in turn creating signals to the olfactory bulb, which is spatially organised into similar 'types' of smells. In the perception of odour, language has a unique role. Those who have a better ability to describe smell through language are often considered to have a better nose. The transition from smell to recognition can be facilitated through language—often an 'ahah' moment when a smell is described as having certain notes, flavours or characteristics of another familiar odour. These interactions of form, code and pattern recognition influenced the development of the research towards investigations of truly volatile and yet almost imperceptible molecules such as pheromones.



Jay Kochel, *Karesansui 1,* 2016
machine drawing, pen on chalkboard paint
on 300gsm Snowden
141 x 262.5 cm
(15 panels 47 x 52.5 cm each)
469,281 objects
path length: 2,287,558.05 mm

Threading these ideas of pattern recognition, language and the imperceptible, I took liberties with the Japanese concept of ‘reading air’. For the Japanese, this concept is perhaps closer to the intuitive act of reading between the lines. For my own purposes, the poetry of reading air presented a methodology to experiment with ideas of the immaterial. Following on from my VC Fellowship at the ANU I developed the current work based on an Asialink residency at the Kyoto Art Centre. While in Japan, I used technology as a means to extract, map, and translate, sculptural forms into 2-dimensional works. These drawn ‘air studies’ are based on the rocks found in Japanese karesansui – Zen gardens – places designed for meditative contemplation. The drawings in this series were initially derived from constructed karesansui stones made only from air and a mylar skin – diaphanous balloons. 3-dimensional scans of these inflated forms were then created, light used to map points approximating the surface of the mylar. The modelled scan then becomes a flattened mesh, drawn by a plotter, like phantasmic nets, translated by iterations from air through light to code to ink. Throughout this research, translation and mimesis act as touchstones to verisimilitude. The ability of the body to act as an encoder – sensate receptor and translator of stimuli. Air as a medium operates elusively, always surrounding us yet only profoundly present when it is absent. In these drawings, air is an essential medium to define the form; the invisible to visible - a stone made from air.

Jay Kochel, *Karesansui 2,* 2016
machine drawing, pen on 300gsm Snowden
182 x 282.5 cm
(20 panels 47 x 56.5 cm each)
1,043,878 objects
path length: 5,055,306.26 mm

ANNA MADELEINE - 2016 FELLOWSHIP

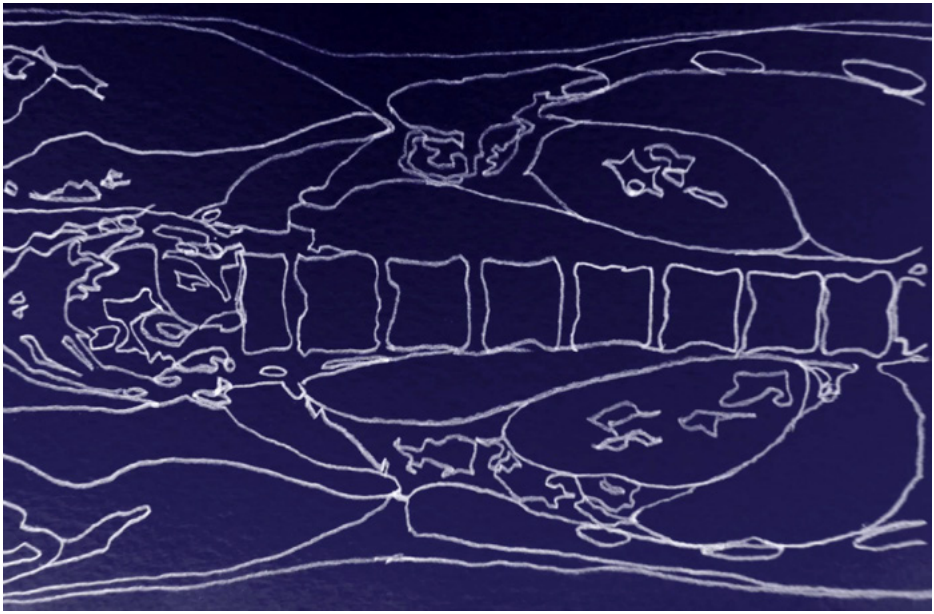
SCHOOL OF MEDICINE
COLLEGE OF MEDICINE, BIOLOGY AND ENVIRONMENT, ANU

In collaboration with Dr. Alexandra Webb and Associate Professor Krisztina Valter from the ANU Medical school, my VCAFS project researched how immersive experiences of medical imagery can create different interpretations of anatomy and new sensations of the body in space. The work shown in the 2018 VCAFS exhibition is a single-channel version of the original installation which included a series of 360-degree virtual reality (VR) videos and a double-sided two-channel projection.

In this work, I have re-animated sequences of magnetic resonance (MR) images and computed tomography (CT) scans by introducing the materiality and temporality of the hand-drawn line. Using tactile materials including pastel, paint, pencil, cyanotype prints and ink allows physical and idiosyncratic traces of the body to be embedded into the distinctive aesthetic of a clinical medical scan. The animation's repetitive motion retains an association with rhythmic bodily sensations of breath or pulse. Combined with patterns and sounds evocative of otherworldly atmospheres such as underwater or outer space this tempo becomes mesmerizing and meditative. Consequently, the image sequences become expressive spaces that have the potential to morph into abstract and unexpected resemblances. The practice of drawing transforms a technical visualization into an embodied and dynamic re-interpretation of the fundamental yet abstract nature of looking within the human body.

My VCAFS fellowship coincided with a visiting artist/scholar residency at the School of Cinematic Arts at the University of Southern California, where I created 360-degree videos to be experienced in VR. While VR is mostly used in anatomy for simulation and education, its strength for me as an artist is to create an experience that disconnects the viewer from their usual perceptions of the body in space.

I found that VR heightens a viewer's awareness of their physical body, by removing them from normal points of reference in their real-life external surroundings and creating an opportunity to shift their focus inwards.



Anna Madeleine, *Magnetic Resonance* (still from video), 2016
Hand drawn tomography, single channel animation
2.18 minutes

Using VR to amplify the visual, temporal and spatial aesthetics of anatomical imagery exaggerates this alternative sense of perception by immersing the viewer in a space expressive of the rhythms, energy and abstraction of internal organs.

This immersion was counter-balanced by the presentation of a double-sided projection where the animations appear inside the shadow of the viewer's body. The different technologies allowed the viewer to encounter moving image in opposing ways: VR surrounds the viewer with animated imagery, and the projection suggests that the viewer's body contains the animations.

The collaboration with Alexandra and Krisztina unfolded through a series of meetings and an exchange of images and animations. Our dialogue often compared different ways of looking at an image: they looked at my drawings searching for specific parts of the body – for example, perceiving a swimmer's legs as the diaphragm – where as I found unexpected resemblances emerging from medical images – for example, finding faces in an MR scan.

This fellowship has led me to new technologies and animation techniques that have expanded my thinking about how scientific visualisations can be embodied, and how artists can give audiences new experiences of the body in space.

Collaborator Statement - Associate Professor Krisztina Valter, Associate Director (HDR) and Dr Alexandra L Webb, Medical Education Unit Medical School, ANU College of Medicine, Biology and Environment

It was an honour to be approached by Dr Anna Madeleine to collaborate with her on her VCAFS Fellowship. We teach anatomy at the Medical School and Research School of Biology. Our anatomical research program encompasses the investigation of innovative educational approaches to enhance student understanding of the structure and function of the human body. This researchhas led us into the worlds of virtual reality, touchscreen technology and 3D printing. We are particularly interested in how these technologies can be used to facilitate student learning of structures deep inside the human body and the appreciation of their relationships to neighbouring structures when viewed in different planes.

When we first met with Anna, she was interested to create a visual work of the human body that viewers could interact with to appreciate how their own body functions. We were captivated by her skills in stop-motion animation and virtual reality and discussed how this could be used to immerse the viewer in the internal structures and workings of the human body. Anna Madeleine's previous stop-motion animation work reminded us of computed tomographic (CT) and magnetic resonance (MR) images.

Anna Madeleine, *Magnetic Resonance* (still from video), 2016
Hand drawn tomography, single channel animation
2.18 minutes

This led to Anna's first endeavour re-animating CT and MR images from different parts of the body in a variety of planes. The animations draw the viewer inside the body and the colours she has used helped re-conceptualise the images and bring them alive. Her use of medical imaging to create animations is particularly effective in revealing the inner structures of the human body and engaging medical students in the art of medical imaging. Anna has since gained skills in virtual reality during her residency at the School of Cinematic Arts at the University of Southern California. This has enabled her to incorporate these new abilities to further enhance the viewers' experience of the internal structures of the human body. By relating every-day activities (swimming, yoga) to medical images allows the comprehension of the full beauty, skills and abilities of the human body.

A highlight of Anna's fellowship has been the opportunity to exhibit her animations at the Australian & New Zealand Association of Clinical Anatomists conference, where she attended anatomy drawing workshops and connected with other academics using virtual reality.

JENNIFER ROBERTSON - 2016 FELLOWSHIP

RESEARCH SCHOOL OF EARTH SCIENCES
COLLEGE OF SCIENCE, ANU

Fostering a first-time collaboration with the Australian National University Research School of Earth Science (RSES) in Canberra and Emeritus Professor Ian Jackson has facilitated a new, meaningful dialogue between geology and weaving.

As an artist in the ANU Vice Chancellor's Artist Fellow Scheme in 2016, Jennifer Robertson specifically focused upon Jackson's leading research into "defects" or "flaws" – vacant sites and dislocation lines running through atomic and molecular crystal lattice structures of minerals such as olivine. Jackson's scientific research is well described as "rock whispering" – an activity involving coaxing out of rocks the closely guarded secrets concerning their mechanical behaviour. This is done through laboratory experiments under controlled conditions of pressure, temperature and stress, which simulate those prevailing within the Earth's deep interior.

The weaving by Jennifer Robertson is evocative of both the overall regularity of the atomic arrangements within the crystalline lattice and the presence of flaws or defects in the crystalline structure. Paradoxically, "defects" in weaving are always unwanted and every attempt is made to eradicate them at every stage of the preparation and weaving process. This in itself presented an interesting challenge – how to make defects intentional, intrinsic and the focus of aesthetic, technical and physical research in cloth. Over 2000 silk threads form the warp (vertical turned horizontal) and over 10,000 weft picks are inserted over 250cm of textile. Woven on a digital handloom, defects are randomly, manually introduced, a time consuming technique requiring manipulating threads through different weave sequences in the same weft pick. The materials used are diverse – 100% basalt, stainless steel, copper, silk, silver/polyester, these required handling independently in the weave process, as the tensions of each material vary widely. Between five and seven weft shuttles were therefore used for each weft row of weaving.

Jennifer Robertson, *Crystal Imperfections as Agents of Deformation,* 2016, basalt, stainless steel, copper, silk, silver and polyester, hand-woven on digital loom, 120 x 250 cm

The result is a woven textile sculpture that reflects mineral crystallography and deformation. Evocative of natural mineral deposit in form, the inventive artwork resonates materiality, structure and surface, its' reflective and deformed surface shimmering upon encounter. Jennifer Robertson's textile research focuses on exploring meaningful connections, correlations and analogies between geology and weaving. Geology, with its outward forms and surfaces is informed by what is normally unseen in its molecular and atomic structures.

Since the VCAFS scheme in 2016, Jennifer Robertson has continued to investigate mineral crystal structures. She is currently working on a crystal research project with the Natural History Museum Department of Earth Science and Mineralogy in London, UK. The Museum houses an interesting historical collection of miniature 3D crystal models (the last addition to the collection was approximately 100 years ago), that Jennifer encountered during research for the VCAFS research project. She visited the Museum in January 2018 to view the models and meet the staff, and was given an invitation to update their collection with a contemporary woven response. Jennifer is currently weaving a set of miniature 3Dimensional crystal space lattices that refer to the scientist Bravais, who in 1848 developed a sub classification system to represent all seven mineral crystal systems with unit cell space lattices. These lattices refer to the ways in which atoms are stacked or aligned in the smallest 3D space such as simple, face, base or body centred arrangements.

Each structure is woven in one piece flat on the loom using a mathematical card model that is transformed into a weave plan using measurements, joining layers of warp to weave seams, interlocking shuttles at alternate selvedges to form concertina hinges and crossing over warp layers to switch positions at strategic points. The woven models are collapsible, self-folding structures. Translucent and incorporating prismatic colour in the weft, they hold a graceful reference to the past histories of mineral crystal research, to crystals and the notion of building collections. Jennifer's response focuses upon simultaneous multiple layered weaving and an evocative translucency in the internal spaces. Finally a post-production process of stiffening, pressing and lacquering is applied.

Three basalt woven sculptural works were completed for the VCAFS scheme in 2016/7. The other two artworks are currently touring in international textile biennials in Ukraine and Portugal.

Jennifer Robertson, *Crystal Space Lattices*, 2018.
handwoven on digital handloom. cotton, linen, starched, pressed, lacquered,
approx 10cm x 10cm x 10cm each.

Collaborator Statement - Emeritus Professor Ian Jackson, Research School of Earth Sciences, College of Science, ANU

Emeritus Professor Ian Jackson's scientific research is well-described as "rock whispering" – an activity which involves coaxing out of rocks the closely-guarded secrets concerning their mechanical behaviour. This is done through laboratory experiments under controlled conditions of pressure, temperature and stress, which simulate those prevailing within the Earth's deep interior.

The mechanical properties of rocks are of central interest in geophysics, both in understanding the structure of the Earth's interior as revealed by seismic waves and its capacity to deform like a viscous fluid on the long timescales of plate tectonics.

Some physical properties of minerals and rocks are determined by the way in which the constituent atoms are packed into regular arrays called crystal lattices. However, the high-temperature mechanical behaviour of rocks is controlled by defects or flaws in the regular packing of atoms in crystalline minerals. These defects range from vacant lattice sites which create space for the migration of atoms through crystal structures, through line defects called dislocations which move under stress to allow crystals to change their shape, to grain boundaries grains which are zones of weakness that allow deformation by relative movement between adjacent grains.

The weaving by Jennifer Robertson is evocative of both the overall regularity of the atomic arrangements within the crystalline lattice and also the presence of flaws or defects in the crystalline structure. Such defects are the agents of high-temperature deformation, facilitating the slow convective stirring of the Earth's crystalline silicate mantle, that is expressed at the surface in the movements of the tectonic plates.

Jennifer Robertson, *Crystal Imperfections as Agents of Deformation* (detail), 2016, basalt, stainless steel, copper, silk, silver and polyester, hand-woven on digital loom, 120 x 250 cm

ERICA SECCOMBE - 2013 FELLOWSHIP

RESEARCH SCHOOL OF PHYSICS AND ENGINEERING
COLLEGE OF SCIENCE, ANU

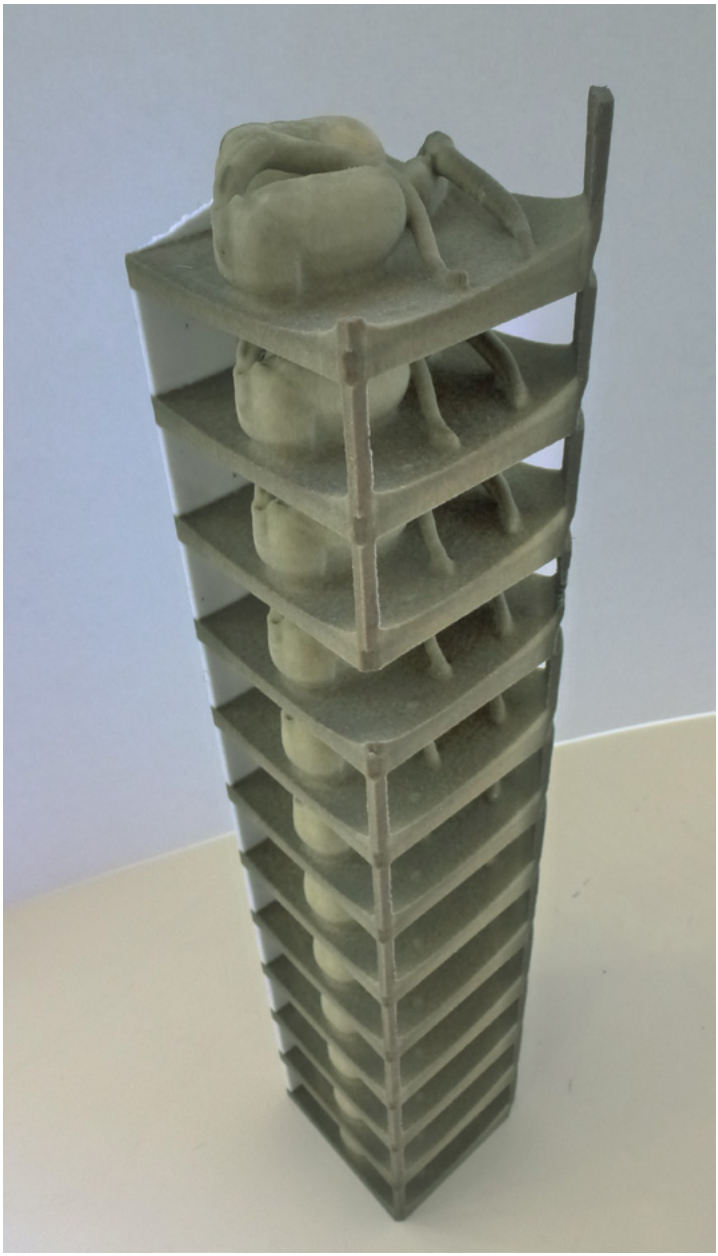
Experimenting with 3D printing timelapse data from germinating seeds. Work-in-Progress.

My research is being facilitated and supervised by Professor Tim Senden, Head of the Department of Applied Mathematics, ANU. My interdisciplinary project 'Grow, visualising nature at nanoscale', is an investigation of the aesthetic possibilities of computational extension of vision with dynamic 3D Microcomputed X-ray Tomography, or 4D Micro-CT, a process which has an additional dimension of time (3D + time = 4D).

With this science I have captured in 4D Micro-CT the transformation of plant seeds as they germinate, from embryo to first leaf stage. I am visualising this data in a scientific volume exploration and presentation tool known as Drishti, a custom-designed software developed by Dr Ajay Limaye at VizLab in the ANU Supercomputer Facility, NCI. I am visualising these virtual time-lapse datasets of germinating seeds and projecting the resulting animations in immersive stereoscopic installations.

Because of the fantastic opportunity provided by VCCAFS I have been able to further experiment with my time-lapse data of mung beans and alfalfa through 3D printing. The Department has a Z-Printer 650 which prints exactly as a colour inkjet, but over fine layers of chalk powder. The resulting 3D colour objects are then sealed with resin.

The first experiments I have created are the beginning of thinking about how this project might progress. Printed objects immediately become static, but by using the transfer functions in Drishti and experimenting with overlaying the data volumes, I am starting to see some unusual results.



Erica Seccombe, *Bean Stack*, work-in-progress, 2013
3D print of mung beans in a sequential stage of germination.
Image: Dr Ajay Limaye.

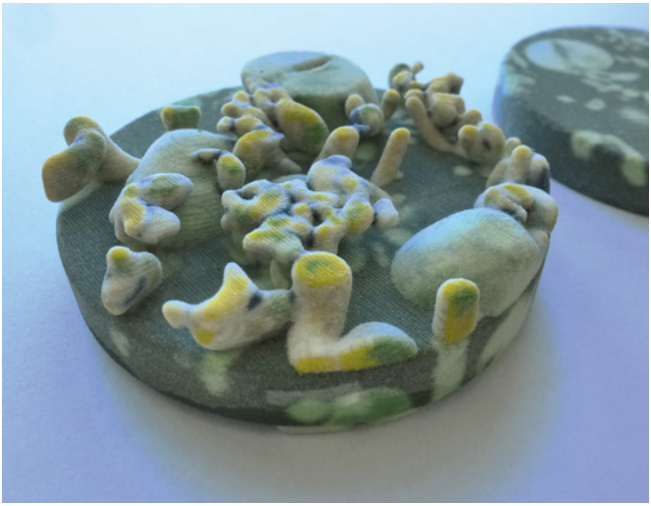
In my first print, the time-lapse stack, [opposite page], each sequential moment of the mung bean sprouting is printed on top of another. This is a very simple model and orders each timeframe in a very linear structure, but it made me think about how to push these experiments in less conventional forms.

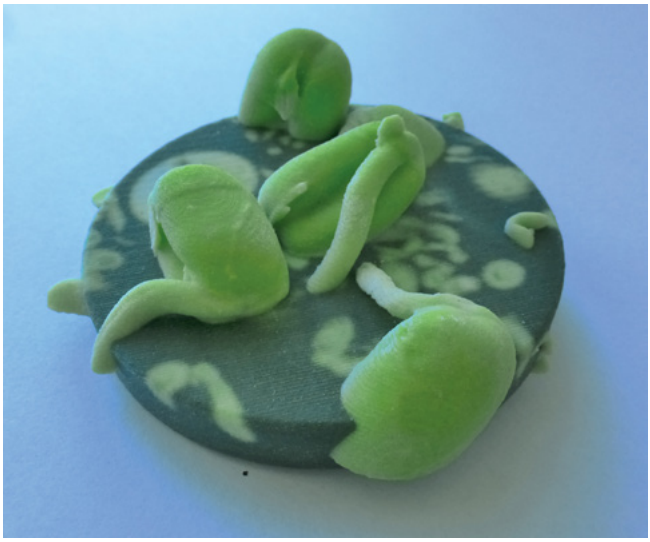
Because the datasets I am using are not created with conventional mesh framing, the virtual data is extremely organic. The beans and alfalfa sprouts are very fragile so printing them off as small sculptures is problematic as the little leaves and stems break away. To contain the structures, I started implementing disks of solid data [opposite page]. It was only when I printed them out that I realised they had started to take the shape of culture dishes. This was not intentional but I like the effect.

The colour is also an additional element that I apply in Drishti before printing. I would like to see how the data translates in a range of colours but to start with I selected a lurid green to highlight the artificial quality of the prints, rather than trying to pretend to be realistic.

The beauty of virtual data is that multiple volumes can be overlaid before they are prepared for printing. This way the data becomes fluid and I can overlay various time sequences in different stages of development at various angles. I can see how through this process time-lapse data can be visualised back into physical 3D models in very different ways. The possibilities are endless

Erica Seccombe is the 2018 winner of the Waterhouse Natural Science Art Prize, a 2010 Synapse recipient through ANAT, and was awarded a 2011 Australia Council of the Arts London Studio Residency.





Erica Seccombe, *Germinating seeds*, work-in-progress (detail), 2013, 3D prints of mung beans and alfalfa in various forms depicting time-lapse of germination

CAROLYN YOUNG - 2015 FELLOWSHIP

FENNER SCHOOL OF ENVIRONMENT AND SOCIETY
COLLEGE OF MEDICINE, BIOLOGY AND ENVIRONMENT, ANU

Over a period of 10 years I documented native grasslands and their farmed descendants. The three photographs exhibited here feature plants, animals and artefacts collected from places that closely represent the pre-European state of grassy woodlands. In making the artworks, I consulted with woodland ecologists Dr Sue McIntyre and Professor Adrian Manning from the ANU, and Ngunawal Custodian Wally Bell.

Collaborator Statement - Dr Philip Barton,
Research Fellow, Australian National University

I am researching the ecology of animal decomposition. This line of research began in 2010 when I was curious about the kinds of insects found at a decaying kangaroo carcass. Through the research that followed, I made new discoveries about the amazing diversity of beetles and flies found at animal carcasses, some of which are shown in Carolyn Young's image. Different insects colonise the carcasses at different stages of decay, and then quickly disappear again. From an insect's perspective a decaying carcass is a rare resource in a landscape, and a brief opportunity to complete its life cycle.

The carrion insects vary in size, some only made visible through a microscope. Carolyn and I discussed the technical difficulties in photographing small insects. Scientists commonly take photographs of insects through microscopes, but this produces a very harsh light and limits how the insect can be positioned. To pursue a higher quality photograph I suggested Carolyn use a camera macro lens, even though this meant selecting bigger insects from my preserved collection of insects for Carolyn to photograph.

Carolyn Young, *Reflecting on Ngunawal plant use in November, 2015*
archival inkjet print
93.5 x 109 cm

I think the simplicity of the grid on black really highlights the insects' colours and shapes. I hope that the image Carrion Insects from a Kangaroo Carcass shows to others some of the natural aesthetics and beauty that I see every day in my work on insects, death and ecosystems. It's wonderful to see my topic brought to life in this way.

Collaborator Statement - Professor Adrian Manning,
Research Leader, Mulligans Flat–Goorooyarroo Woodland Experiment

I have been the Research Leader of the Experiment since its establishment in 2005. For over 10 years, we have been developing Mulligans Flat and Goorooyarroo into an 'outdoor laboratory' at the interface of research and practice. The site is increasingly playing a national role in engaging the community about woodland restoration. This is possible though the innovative Woodland and Wetland Trust—formed to support and communicate conservation action at Mulligans Flat and Goorooyarroo and work in partnership with the ACT Government and the community. In this context, working with Carolyn Young has been a valuable experience for my team. There are many ways to communicate science, but the more traditional approaches are often not accessible to the broader community. Carolyn's focus on using art (photography) to communicate the fundamentals of our research, and of restoration, provided a different angle how our work can be viewed. Art can affect and connect with people in a way that dry science often can't. Personally, through my discussions with Carolyn, I found it enlightening to think of the different ways to portray what we do in a less literal, but potentially more affecting, way. I also find it interesting to reflect on the complementarity of the information we gain from data, reported in academic journals, and the beauty we see in Carolyn's photographs of beetles. Both communicate to us the astonishing diversity and wonder of nature in grassy woodlands, but in very different ways.e
complementarity of the information we gain from data, reported in academic journals, and the beauty we see in Carolyn's photographs of beetles. Both communicate to us the astonishing diversity and wonder of nature in grassy woodlands, but in very different ways.

Carolyn Young, *Reference grassy Woodland (Bookham Cemetery) 19 October*, 2014
archival inkjet print, 93.5 x 109 cm

ABOUT THE SCHOOL OF ART & DESIGN

The ANU School of Art & Design is one of Australia's premier visual art and design teaching institutions. Its reputation has been developed and maintained through a hands-on teaching program that emphasises excellence in studio practice in combination with a critically informed approach to the field of art and design. The School has an excellent success rate in graduating highly skilled professionals who make a significant contribution as exhibiting artists, curators, art historians, writers, scholars and arts administrators. Graduates have achieved national and international recognition and are successful in gaining competitive scholarships and awards.

Undergraduate, combined degree, flexible double degree, Honours and an extensive postgraduate program are offered, all taught in the School's specialised facilities by highly skilled staff. A highlight of all of our programs is the access provided to visiting artists and scholars both within the School of Art and Design and through the University's broader teaching and research areas. A special feature of the School of Art and Design is the International Student Exchange Program. Through this program students have the opportunity to study at university schools of art and design in Asia, Europe and North America.

Programs are enhanced by the School's proximity to national cultural institutions, and a strong network of local and regional arts organisations. Close by are the National Gallery of Australia, the National Film and Sound Archives, the National Library of Australia, the National Museum of Australia, the National Portrait Gallery, Canberra Museum and Art Gallery and the Drill Hall Gallery; in addition the School has close bonds to Canberra's well established not for profit art and community organisations.

CONTACT INFORMATION
SCHOOL OF ART AND DESIGN OFFICE

T + 61 2 6125 5810
E enquiries.visualarts@anu.edu.au
W http://soad.cass.anu.edu.au

COURSE INFORMATION
W http://programsandcourses.anu.edu.au

VCAFS INFORMATION
W http://soad.cass.anu.edu.au/artist-fellows

ADDRESS
School of Art and Design
ANU College of Arts & Social Sciences
105 Childers St
The Australian National University
Acton, ACT, 2601, Australia

CREDITS
Australian National University
College of Arts and Social Sciences
School of Art and Design
http://soa.anu.edu.au/

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