



INSECTA: Illustration, Conservation & Curation – 2 Day Masterclass Workshop Program

When: Friday and Saturday 9th and 10th October 2020, 9:00am – 4:30pm, 9:30am – 5:00pm

Cost: \$220 – 2 days includes all materials, morning tea for Day 1 and afternoon tea for Day 1 and 2.

Places available: 15

Where: UNE Agricultural Education Building W077; Natural History Museum & the New England Regional Art Museum – Galleries and Packsaddle Studio.

The University of New England and the New England Regional Art Museum (NERAM) have partnered to offer an exciting 2-day masterclass for attendees to engage and learn from entomologists, ecologists, artists and museum staff about insect ecology and conservation, identification, pinning and curating; as well as the artistic techniques of natural history illustration.

This workshop is for anyone interested in how insects shape our planet, our lives and our narratives.

Day 1 offers an engaging program at UNE that will begin with an introduction to insect ecology, conservation, significance and taxonomy. This will then be followed by an introduction to collecting, pinning, curating and identification. Throughout the day, attendees will learn about the integral and complex role and relationship insects have with society and our planet through workshops on insect behaviour, depictions in art, culture and media, as well as entomology in Australia and citizen science.

Day 2 takes you to the art museum, where the interplay of insects and art are explored in discussion with Paper Conservator and Collections Manager Jennifer Taylor-McRae, followed by a 4-hour natural history illustration workshop with artist Dr Deirdre Bean and exploration of the Black Gully Nature Reserve with Dr James O’Hanlon.

Facilitators:

Dr Manu Saunders

Dr Jean Holley



Dr Kirsti Abbott

Dr James O’Hanlon

Mr Steve Tremont

Prof. Nigel Andrew

Deirdre Bean

Jennifer Taylor-McRae

Alexis Rickards

DAY 1 PROGRAM – UNE

Time	Activity	Facilitator	Notes
8.45 - 9.00	Arrival & Registration		
9.00 - 9.20	Welcome to Country & Program	Oorala rep Assoc. Prof. Karl Vernes Narelle Jarry	We acknowledge that we are on the land of the Anaiwan people
9.20 – 10.30	Introduction to insects <ul style="list-style-type: none"> • Ecology & Conservation • Significance • Taxonomy 	Dr Manu Saunders Prof. Nigel Andrew	General overview and summary, plus opportunity to look at the insects in the NHM both front and back of house
10.30 – 10.45	Morning Tea		
10.45 – 12.30	An introduction to collecting, curating & identifying insects	Dr Jean Holley Steve Tremont	Opportunity to either collect your own insects, or start to pin out an already dried specimen
12.30 – 1.15	Lunch		Continue pinning and identifying
1.15 – 2.00	<ul style="list-style-type: none"> • Insect behaviour • Depiction in art & culture • The Insect Apocalypse 	Dr James O’Hanlon Dr Manu Saunders	



2.00 – 3.00	Continue with pinning & identifying specimens	Dr Jean Holley Steve Tremont	
3.00 – 3.15	Afternoon tea		
3.15 – 3.45	Entomology in Australia <ul style="list-style-type: none"> • Biosecurity • Bees in backyards • Learning more 	Dr Manu Saunders Prof. Nigel Andrew	
3:45 – 4:15	Citizen Science <ul style="list-style-type: none"> • Participating in research • Monitoring local populations 	Dr Kirsti Abbott Dr Manu Saunders Dr James O’Hanlon	
4.15 - 4.30	Opportunity for questions & discussion		

DAY 2 PROGRAM – NERAM

Time	Activity	Facilitator	Notes
9.30	Arrival & Registration		
9.50	Welcome to NERAM and Acknowledgement of Country	NERAM Staff	
10.00 – 10:30	Insects and Art Collections: Discussion with Paper Conservator Jennifer Taylor-McRae	Jennifer Taylor-McRae	Attendees will be required to wear face masks for the duration of this session. Disposables will be supplied.
10.30 – 12.30	Introduction to Scientific Illustration – Session 1	Deirdre Bean	
12.30 – 1.30	Lunch		NERAM Café may not be operating at this time



1.30 – 3:30	Scientific Illustration Continued – Session 2	Deirdre Bean	
3.30 – 4.30pm	Afternoon tea and Discussion with Dr James O’Hanlon in Black Gully Nature Reserve		Located outside Packsaddle Studio
4.30 – 5.00	Opportunity for finish up and pack up workshop.		

Session Overviews

Day 1 –

An introduction to insects

As members of the Class Insecta, in the Phylum Arthropoda, there are many commonalities among insects. However, their diversity, distribution and abundance outweighs any other animal on earth. Their roles in our ecosystems include pests and disease carriers, pollinators and seed dispersers, nutrient cyclers, indicators of environmental change, and sources of novel bioactive compounds used by humans in medicine, agriculture and food. This introduction will give you an overview of the insect Orders, their roles, iconic species, and significance in ecology and evolution on earth.

An introduction to collecting, curating & identifying insects

A properly prepared insect collection can last for hundreds of years. The preparation of an insect specimen will depend on what Order (i.e. major group) it belongs to. Most insects are pinned and dry mounted, with the exact technique dependant on the Order. We will explore simple collecting techniques, use a taxonomic key to identify insects, and learn the important reasons why entomologists are so fussy about where the pin goes! We will practice pinning specimens and work together to create some scientific collections and beautiful art.

Bees in Backyards



The common golden honey bee that most of us see in our gardens is an introduced species. There are around 2000 species of native bee in Australia. Most of these are solitary bees, while about 11 species are social stingless bees. Most solitary bees nest in the ground, by digging holes in patches of bare sandy soil. The rest nest in cavities above ground, like holes in dead wood or in brick walls. Regardless of their nesting habits, they all need floral diversity throughout the year to survive!

Insect Behaviour

Insect behaviour covers a very wide range of activities, including locomotion, grooming, feeding, communication, reproduction, dispersal, flight, learning, migration, host or [prey selection](#), [diapause](#), and various responses to [environmental hazards](#) such as temperature, humidity, parasites, and toxins. In this session you'll learn some common behaviours of important insects, as well as how to recognise unusual behaviours as indicators of environmental change. Discover the orchid mantis, seed dispersing ants and how to avoid an angry wasp.

Depiction in Art and Culture

Insects have been used as symbols in human art and culture for centuries. Butterflies represented immortality, grasshoppers were associated with fertility, ants were a symbol of patience, and scarab beetles were sacred emblems in ancient Egypt. Honey bees, one of the most well-known of insects, represented social order and organisation. Classical and Romantic painters often snuck insect symbols into paintings. Indigenous people associated insects with food resources and natural processes, using them in art and as totems. In contemporary times, insects have appeared as symbols, cameos and main characters in movies and TV shows. Are these depictions ecologically accurate?

The Insect Apocalypse

Recent media stories suggested that insect populations around the world were on the brink of collapse. The Insect Apocalypse has become embedded in popular lexicon, but how accurate is the story? Insects face a multitude of threats globally, particularly from habitat loss, pesticide use, and climate change. However, there is very little data available from most countries and for most insect species. Where



there is long-term data, trends appear to be variable: some species are in decline, some species are increasing, others show no change.

Biosecurity & Invasive species

Insects can be friends or foes, not only to people, but to our environment, agricultural endeavours and other insects. When populations of insects increase to a point where they dominate a system, shifting the ecological balance, they are considered pests. Queensland is battling red fire ants through a 10 year, \$411 million eradication plan. Yellow crazy ants threaten our Wet Tropics World Heritage Area, the oldest continuously surviving tropical rainforests on Earth and the most biologically diverse region in Australia. This session will give an overview of some significant insect pests of plants, animals, humans and environment, and present case studies of both successful control and ongoing management of invasive insects in Australia.

Citizen Science

Citizen science is the collection of scientific data by non-scientists by participating in a project facilitated by a scientist, or in collaboration with a scientist. They typically have three elements to them: research, education and engagement. However, often individual projects focus on one or two of these elements, rather than trying to address all three. At UNE, we have several citizen science projects focused on insects. In this session you'll learn about the Wild Pollinator Count, School of Ants, Tiny Gardeners project, and contribute to online biodiversity repositories like iNaturalist.

Day 2 –

Insects and Art Collections: Discussion with Paper Conservator Jennifer Taylor McRae

Most of us are familiar with the impact insects can have on the day to day objects in our homes – moths eating our clothes, or termites chewing through house foundations. Similarly, insects pose many challenges to conservation of museum collections. NERAM Collections Manager and in-house Paper Conservator will take participants through the ways in which insects interact with various materials and mediums in Collections, and how museums and galleries can proactively manage and combat the



effects insects can have on those things we want to look after for years to come. Please note: *Attendees will be required to wear face masks for the duration of this session. Disposables will be supplied.*

Afternoon tea and discussion with Artist and Behavioural Entomologist, Dr. James O'Hanlon.

Combined afternoon of artistic and entomological exploration and discussion in the Black Gully Nature Reserve behind NERAM. Masterclass participants will have the opportunity to break out in the beautiful natural space, ask questions regarding James' research, and his work as both as artist and science communicator. Natural History Museum workshop facilitators will also be present to explore any curiosities participants may have encountered throughout the Masterclasses and wish to unpack.

4 Hour Scientific Illustration Workshop with Deirdre Bean

The aim of this workshop is for masterclass participants to begin developing the essential technical skills of scientific illustration, as well as gain an understanding of methodology, considerations, and how science and artistic expression and practice come together.

The workshop will:

- Discuss the importance of collaborating with scientists
- Utilise microscopes for analysis of specimens, as well as hand outs and reference materials
- Discuss archival materials and mediums i.e graphite pencils, ink pens, paper, film etc
- Demonstrate methods of scientific illustration
- Review the importance of accuracy and measuring.
- Discuss scanning and reproducing the drawing.
- Consider how colour mediums are utilised (although this will not be part of the workshop)

Once the students choose their subject, drawing will begin. Deirdre will give each attendee individual direction and feedback.



At the end of the day, all participants should have at least one drawing to take home.

About UNE:

The University of New England offers opportunities to engage and learn from entomologists, ecologists and parataxonomists working around Australia and the globe on biodiversity conservation, insect physiology, insect ecology, agroecology and STEM education. The UNE Natural History Museum is the only one of its kind within 500kms and holds a substantial entomology collection of both pinned and soft bodied insects preserved in jars. The specimens reflect teaching, research, student and display projects, some dating back to the 1950's, and represent almost all insect Orders.

The recent "Insect Apocalypse" narrative, alongside the rise of popular media stories about the decline of bees and death knoll of mosquitoes, trustworthy and accessible information on insects, their roles, importance, distribution, diversity and habitats, is dwindling. Yet more and more people want to understand the complex world in which we live – with insects.

About NERAM:

NERAM is a leading cultural and arts tourism destination in regional Australia, and home to one of the nation's most significant art collections outside the capital cities, holding a collection of over 5000 works of historical, modern and contemporary art. NERAM presents a dynamic program of exhibitions, educational and public events. NERAM opened its doors in 1983 as a purpose-built art gallery for the Howard Hinton Collection of some 1,300 artworks donated to the Armidale Teachers' College by Howard Hinton ESQ, OBE between 1929 and 1948. This Museum is home to six gallery spaces, the Museum of Printing, The Packsaddle Artist Studio and Residence, the NERAM shop and NERAM café.

NERAM is the custodian of three important collections of Australian art: the Howard Hinton Collection, the Chandler Coventry Collection, the NERAM Collection.

Together they offer a comprehensive overview of Australian art history unmatched in regional Australia. These collections include significant works by Australian and international artists such as Streeton, Roberts, Gruner, Preston, Whiteley, Gleeson, Tuckson and Christo, to name just a few.



Biographies of Facilitators

Dr Manu Saunders is a Lecturer in Ecology at the University of New England, Armidale. Her research focuses on insect communities and ecosystem function, particularly the important role that insects play in connecting humans and nature. She is passionate about natural history and science communication; her blog “Ecology is Not a Dirty Word” is a wonderful resource for academics and ecology amateurs alike.

Find out more at <http://ecologyisnotdirtyword.com/> or follow Manu on Twitter @ManuSaunders

Dr Jean Holley is a UNE Discovery Voyager team member, and an insect ecologist who finds insects utterly enthralling. She’s continually amazed that these little creatures are living, breathing animals that perceive and react to their environment and to each other! If Jean can change just one person’s view from aversion to appreciation for these wonderful critters, it’s a good day. Jean is a strong advocate for the vital role that insects and other invertebrates play in ecosystems across the world, and indeed their importance to our own survival. Jean has worked on a range of insects groups, from investigating what makes a sexy cricket and how locusts survive the cold, to how dung beetles contribute to healthy and productive farming systems, and the impact of climate change on insect mediated ecosystem services.

Dr James O’Hanlon is a behavioural ecologist who studies ants, plants, stick insects, wasps, spiders, praying mantises and more. He is particularly interested in how animals communicate with each other and how they can use deception to their advantage, for example, how do praying mantises mimic flowers to lure in prey, and how do orchids mimic female wasps to lure in unsuspecting male wasps? He is a passionate science communicator and when not doing research he is the Director of the science communication outlet In Situ Science where he helps run local educational events and hosts the In Situ Science interview podcast.

Find out more at www.jamohanlon.com or follow James on social media @jamohanlon



Dr Kirsti Abbott is an ant ecologist, science educator and communicator. After spending many years as a researcher looking at tiny insects on tropical islands she now leads UNE Discovery, a project at the University of New England that aims to attract, engage and inspire children and families in our communities through Discovery spaces, both on the UNE campus and mobile. Kirsti also coordinates the national citizen science project [School of Ants Australia](#); she enjoys talking to ABC radio audiences, Richard Fidler and TEDx listeners, and unwitting school students about how ants changed her life. To get her going on a good rant, ask her about the amount of time primary school kids get outside looking and learning about nature, or the general lack of enthusiasm for bugs these days.....

Steve Tremont has had a life-long love of ecology and anything biological. This combined with his other loves of bushwalking and outdoor adventure could see him be considered as one of those fortunate few who have managed to combine all his loves into one long and varied career.

His specific interests focus on Australian fauna, mainly birds, mammals, reptiles and insects. He has pursued these interests both personally and professionally for more than 50 years, focussing on specific groups at various times throughout his life, including the largest personal collection of New England ants in existence. Since moving to Armidale in 1989, Steve has been researching the distribution and diversity of the ants of the New England Region. His work continues and presently he is still processing and identifying Australian ants from around the country for UNE Discovery, researchers, government and individuals.

Professor Nigel Andrew investigates how insect biology changes along environmental gradients (latitude, altitude, climatic, agricultural): particularly their ecology, physiology and behaviour. His current research at UNE focuses on the impact of climate change on dung beetles, ants and insect-plant interactions. He is the past president of the Ecological Society of Australia and has recently been awarded a Fulbright scholarship to further his research into how dung beetles fare under climate change.

Jennifer Taylor-McRae trained as a Sculptor and Printmaker at The National Art School in Sydney, prior to her professional career as a Paper Conservator where she worked at a variety of institutions internationally. She has been the Registrar & Collections Manager at NERAM since 2013.



Deirdre Bean is an established artist and scientific illustrator from Newcastle, NSW. Deirdre has a BA in Fine Arts and Visual Culture from Curtin University and a PhD in Natural History Illustration from the University of Newcastle. Deirdre has exhibited nationally and internationally over 25 times and has undertaken numerous residencies. During her PhD in Natural History Illustration at the University of Newcastle, Deirdre Bean had access to an extraordinary collection of privately donated preserved insects. Being fascinated with the natural world, she was inspired to draw a selection of them, including the cicada and grasshopper. Drawing from pinned specimens, the illustrator is required to observe closely, measure and draw accurately - essential principles for all scientific illustration.

Please be advised that this workshop is subject to cancellation and changes in accordance with the NSW Government requirements, the New England Regional Art Museum and University of New England COVID-19 response protocols and Visitor Guidelines. On booking attendance, you are agreeing to adhere to COVID-19 hygiene protocols required at the time of the workshop. Attendees may be required to follow registration, physical distancing, hand hygiene guidelines, and may be required to wear a face mask. Attendees are asked to not attend if they are at all sick in anyway - even a simple cold.