



**Centre for Biodiversity and Biosecurity**  
***Te Whare Tiaki Koiora | Mo te orangatonutanga o tō tātou Kanorau Koiora***

**Māori Summer Research Scholarships 2019 – 2020**  
**Nature is essential | *He taiao whakahirahira***

**Our Māori Summer Research Scholarships projects**

Please choose your top two preferred projects from the list below and feel free to contact any of the supervisors if you would like more information on their project(s).

<b>Project title</b>	<b>Pollination ecology and animal behaviour</b>
<b>Department(s)</b>	SBS
<b>Supervisor(s)</b>	<a href="#">Anne Gaskett</a>
<b>Contact details</b>	Anne Gaskett: <a href="mailto:a.gaskett@auckland.ac.nz">a.gaskett@auckland.ac.nz</a>
<b>Project description</b>	<p>Kia ora keen future ecologists – I warmly invite you to join my lab for a great summer’s research. Me and my students study flowers, fruit, moss, insects and birds – how they interact, communicate, and change each other.</p> <p>If you choose us as your hosts, you’d be helping with fieldwork (mostly daytrips in the Auckland region) and lab work and analyses including: measuring how insects and animals see flower colours (spectrometry and visual modelling), how being fooled by orchids makes insects’ bodies change (microscopy of insect antennae, digital shape analysis of wings), how moss mimics carcasses to lure flies and how birds respond to lights from fishing boats (fieldwork). We collaborate with colleagues at Plant and Food, so there’s the opportunity to help with pollination research there too.</p>

	<p>It is absolutely no problem if you have not done these things before, or if you are not sure if science is the right career for you. The only essentials for this job are:</p> <ol style="list-style-type: none"> <li>1. you love nature and the outdoors and prioritise kaitiakitanga</li> <li>2. you are patient and pay careful attention to detail</li> <li>3. you like to learn new things and work with diverse people</li> <li>4. you like morning tea and sharing kai with your labgroup (our specialities include chocolate fudge, pear slice and ANZACs)</li> </ol> <p>more info about orchids: <a href="https://www.youtube.com/watch?v=hml-rJuYAjw">https://www.youtube.com/watch?v=hml-rJuYAjw</a>  more info about me and my lab group: <a href="https://annegaskett.wordpress.com/">https://annegaskett.wordpress.com/</a></p> <p>We're a nice bunch of people, and we take inclusiveness, equity, and scientific excellence seriously. Join us and help us make science more diverse, friendly and excellent. Contact me for more information: Anne Gaskett <a href="mailto:a.gaskett@auckland.ac.nz">a.gaskett@auckland.ac.nz</a></p>
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<b>Project title</b>	<b>Drought effects in native forests</b>
<b>Department(s)</b>	SBS
<b>Supervisor(s)</b>	<a href="#">Cate Macinnis-Ng</a>
<b>Contact details</b>	Cate Macinnis-Ng <a href="mailto:c.macinnis-ng@auckland.ac.nz">c.macinnis-ng@auckland.ac.nz</a>
<b>Project description</b>	<p>Droughts are increasing in frequency and intensity under a changing climate. Our ongoing research work is exploring the impacts of drought on plant water use and carbon uptake of kauri.</p> <p>The successful student will contribute to fieldwork, laboratory analysis and data processing. An interest in plants and outdoor work is essential.</p>

<b>Project title</b>	<b>Pukeko anti-predator behaviours</b>
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<b>Department(s)</b>	SBS
<b>Supervisor(s)</b>	<a href="#">Kristal Cain</a>
<b>Contact details</b>	Kristal Cain <a href="mailto:k.cain@auckland.ac.nz">k.cain@auckland.ac.nz</a>
<b>Project description</b>	<p>Pūkeko are native ground nesting birds, making them vulnerable to introduced predators. However, they have a relatively recent history in Australia, where mammalian and reptilian predators are more common. The project will focus on looking at how pūkeko respond to different types of predators near their nests. This research will involve a lot of patience to locate and monitor nests and birds. The field site is a 25 minute drive from city campus (access to a car required) and the research will be carried out alongside a PhD researcher on a known population of pūkeko.</p> <p>No experience required, however a strong interest in ornithology and/or animal behaviour is highly recommended.</p>

<b>Project title</b>	<b>Sex differences in pīwakawaka (fantail) song structure and timing</b>
<b>Department(s)</b>	SBS
<b>Supervisor(s)</b>	<a href="#">Kristal Cain</a>
<b>Contact details</b>	Kristal Cain <a href="mailto:k.cain@auckland.ac.nz">k.cain@auckland.ac.nz</a>
<b>Project description</b>	<p>Pīwakawaka are one of NZ's most widespread songbirds and manage to persist in the face of urbanisation and invasive predators. Both sexes sing and look identical. This project focuses on trying to determine whether there are sex differences in song structure or singing behaviour. This research will involve a lot of patience to locate and monitor nests and record birds. The field site is a 25 minute drive from city campus (access to a car required) and the research will be carried out alongside a PhD researcher on a newly established study population.</p>

	No experience required, however a strong interest in ornithology and/or animal behaviour is highly recommended.
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<b>Project title</b>	<b>Tītītipounamu (rifleman) nesting behaviour</b>
<b>Department(s)</b>	SBS
<b>Supervisor(s)</b>	<a href="#">Kristal Cain</a>
<b>Contact details</b>	Kristal Cain <a href="mailto:k.cain@auckland.ac.nz">k.cain@auckland.ac.nz</a>
<b>Project description</b>	<p>Rifleman are an endemic bird species that occupy a very special place in the avian family tree. We are currently working with populations in the Hawke's Bay region trying to understand more about the vocalisations and sex differences. This research project may support the existing research or, we have contacted the local iwi (Maungaharuru-Tutira) to explore jointly developing a project. The project will be based in the field about 5 hours from Auckland (transport will be provided).</p> <p>No experience required, however a strong interest in ornithology and/or animal behaviour is highly recommended.</p>

<b>Project title</b>	<b>Unseen biodiversity on native plants</b>
<b>Department(s)</b>	Manaaki Whenua-Landcare Research
<b>Supervisor(s)</b>	<a href="#">Zhi-Qiang Zhang</a>
<b>Contact details</b>	Zhi-Qiang Zhang <a href="mailto:zhangz@landcareresearch.co.nz">zhangz@landcareresearch.co.nz</a>
<b>Project description</b>	NZ native plants host a diversity of endemic arthropods, including minute species (e.g. mites) that normally escape the naked eyes. The summer student will work with taxonomists at NZAC and can choose a plant species such as harakeke (flax).

	<p>Learning skills to work in a taxonomic collection or natural history museum, including: 1) fieldwork and sorting field samples; 2) curation and identification of insect groups; 3) DNA extraction of insect specimens, and 4) databasing and geo-referencing specimens for biodiversity and biosecurity research projects.</p> <p>Ability to work in a group or independently, position requires dexterity, care and attention to detail, patience, data entry, and read small labels.</p> <p>Applicants must have an interest in Entomology</p>
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<b>Project title</b>	<b>Mycology, Plant Pathology, and Myrtle rust</b>
<b>Department(s)</b>	Manaaki Whenua-Landcare Research
<b>Supervisor(s)</b>	<a href="#">Maj Padamsee</a> , <a href="#">Bevan Weir</a> , <a href="#">Peter Johnston</a>
<b>Contact details</b>	<a href="mailto:padamseem@landcareresearch.co.nz">padamseem@landcareresearch.co.nz</a> ; <a href="mailto:weirb@landcareresearch.co.nz">weirb@landcareresearch.co.nz</a> ; <a href="mailto:johnstonp@landcareresearch.co.nz">johnstonp@landcareresearch.co.nz</a>
<b>Project description</b>	<p>The Landcare Research fungal systematics group maintains the largest collections of both dried and living fungi in New Zealand, and also delivers data associated with the collections through the NZFungi website. The successful applicants (X2) will provide assistance adding data to the NZ Fungi database and maintaining, tracking, and storing fungal specimens and cultures and associated DNA sequence data. You will gain an understanding of the day to day running of a mycological research laboratory and key techniques you will learn include handling fungal cultures, data capture and management and microscopy. In addition, you will be expected to assist with an ongoing project on myrtle rust in the mycology labs at Landcare Research, Tamaki. These could potentially involve culturing and identification of fungi from field samples, analysis of taxonomic or eDNA data from nanopore sequencing, etc.</p> <p>Requirements. Attention to detail, ability to keyboard accurately, a general interest in fungi, bacteriology or plant pathology.</p>