



# 2018 Endeavour Round Successful Projects Summary

## SUCCESSFUL 2018 SMART IDEAS

Organisation	Title	Duration (years)	Contract Value (GST excl)
<b>AgResearch Limited</b>	Enhancing early-life development and immune protective function using milk exosome-enriched dairy foods.	3	\$999,999
	Engineering robust nano-protein delivery vehicles for tailored insect pest control	3	\$1,000,000
	High-throughput phenotyping of biological nitrogen fixation and metabolism to improve forage legumes	3	\$999,999
<b>Bodeker Scientific</b>	Inferring city-scale particulate matter emissions sources through inverse modelling	2	\$999,100
	Near real-time assessment of climate change impacts on extreme weather events	3	\$999,932
<b>Cawthron Institute</b>	Rationally designing a 'smart' marine antifouling biocide based on novel synthetic peptides	3	\$1,000,000
<b>GNS Science</b>	Geologic sub-surface modelling of an active fault system: Cape Egmont fault zone	2	\$728,628
	Energy harvesting from ambient heat using transparent thermoelectric materials	3	\$999,999
<b>Massey University</b>	Functional carbon nanomaterials from harakeke fibres for sustainable energy applications	3	\$999,978
	Airborne hyperspectral remote sensing for establishing New Zealand's baseline environmental and mineral indicators	3	\$999,000
<b>National Institute of Water and Atmospheric Research Ltd</b>	A reliable ocean forecast tool for managing marine disasters in New Zealand	3	\$1,000,000
	Machine Learning approaches to downscale seasonal climate forecasts for New Zealand	2	\$740,000
	Drone flow: Aerial monitoring system for better river management	3	\$1,000,000
	Reducing the impact of LED streetlight conversions on cultural and ecological values	3	\$999,000
	Refining the spawning sites and larval dispersal routes of eels using isotopic landscapes	3	\$954,000
	Freshwater bioremediation using native mussels (kāeo) - focussed on shallow eutrophic lakes	3	\$999,999
	Rivers as dynamic transport vectors of plastic pollution to the ocean	3	\$999,000
<b>Scion</b>	New Zealand seaweeds: unique cellulose nanocrystals for use in high-value products.	3	\$987,249
<b>The New Zealand Institute for Plant and Food Research Limited</b>	Are microbial partners the key to bioactive precursor production for high value mānuka honey?	3	\$1,000,000
	Developing an artificial bi-trophic ecosystem maintained in dynamic equilibrium for sustainable control of a serious pest within honeybee hives, and a new paradigm for addressing other intractable pests in productive systems	3	\$1,000,000
	Novel process for making low glycaemic load starch ingredient for healthy innovative food products	3	\$1,000,000



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<b>University of Auckland</b>	Building a sustainable gender budgeting strategy for New Zealand	3	\$859,815
	Photonic Device for Rapid Prostate Cancer Detection and Mapping	3	\$999,999
	Growing NZ optometry device industry, through developing novel technology for screening blindness	2	\$999,757
	Experimental approach for reducing eruption risks in New Zealand Geothermal Fields	2	\$926,000
	Titanium Foam Thermal Shielding - Returning Small Payloads from Space	3	\$999,714
	A Wave and Finite-Element Method for Calculating Sound Transmission in Lightweight Buildings	3	\$999,999
<b>University of Canterbury</b>	Sustainable and cost-effective seismic-isolation foundation-soil systems for medium-density low-rise buildings	2	\$1,000,000
<b>University of Otago</b>	Bees as Biosecurity Biomonitoring - using pollen testing to identify and monitor new plant incursions into New Zealand	3	\$964,620
	Long distance connectivity for superconducting quantum-bits	3	\$999,519
	Highly efficient solar-to-hydrogen energy conversion based on innovative nanophotonic platform	3	\$999,959
	Understanding pollen abortion in female kiwifruit to create bisexual flowers	3	\$999,720
	Superhydrophobic lenses – Merging water droplets for fast surface ejection, preventing ice-formation	3	\$999,677
<b>University of Waikato</b>	Eye on lakes: national monitoring of cyanobacterial blooms	3	\$1,000,000
	An isotopic toolkit for cadmium management: from agrisystems to ecosystems	2	\$999,808
	Reduction of force transmission to buildings from vertical and horizontal seismic motion	3	\$993,612
	Identifying Solutions for Using Personal Monitoring to Support Workers in Hazardous Industries	3	\$999,993
	Harnessing Marine Invasive Allelochemistry to Fast Track Bioactive Applications	3	\$1,000,000
	New approaches to detect invasive freshwater fish using scent and environmental DNA	3	\$1,000,000
<b>Victoria University of Wellington</b>	An engineered RNA ligase system for unbiased sequencing of diverse microRNA pools	3	\$1,000,000
	Novel 3-dimensional sugar-based clusters for the treatment of metastatic breast cancer	3	\$999,953
	Synergistic pathways for remyelination in multiple sclerosis	3	\$999,999
	Enhancing the efficacy of veterinary vaccines by skewing the immune response to a Th1/Th17 profile	3	\$1,000,000
	Handheld, enzyme-based biosensors for monitoring grape quality, wine quality and fermentation	3	\$1,000,000
	Reconstructing Baseline Ocean Data Around NZ for Marine Management and Forecasting Models	3	\$987,366
	Water purification using solar energy captured by natural photonic crystals	3	\$999,992



# 2018 Endeavour Round Successful Projects Summary

## SUCCESSFUL 2018 RESEARCH PROGRAMMES

Organisation	Title	Duration (years)	Contract Value (GST excl)
AgResearch Limited	Mapping the New Zealand Ruminant Landscape – defining variation in the microbiome as a resource for fitness and adaptation	4	\$3,588,899
	Improved weed control and vegetation management to minimise future herbicide resistance	5	\$8,500,000
GNS Science	Optimising water management based on understanding of flow sources, pathways and lags	5	\$9,500,000
Institute of Environmental Science and Research Limited	Impacts of microplastics on New Zealand's bioheritage systems, environments and ecoservices	5	\$12,536,205
Landcare Research New Zealand Ltd	More birds in the bush: large-scale restoration across complex forests	5	\$9,000,000
	Cost-effective targeting of erosion control to protect soil and water values	5	\$9,800,000
	Beyond myrtle rust: Next-generation tools to 'engineer' forest ecosystem resilience to plant pathogens	5	\$13,000,000
Lincoln Agritech Limited	Hand-held high resolution medical imaging using microwave metamaterial lenses	5	\$5,995,000
	Critical Pathways: Unravelling sub-catchment scale nitrogen delivery to waterways	5	\$7,775,000
Livestock Improvement Corporation Limited	Transforming dairy cattle improvement through next generation genomic selection and strategic mating	5	\$7,000,000
Massey University	Milks Mean More: Unlocking the potential of New Zealand's ruminant milks	5	\$11,268,560
MetOcean Solutions Limited	Understanding ocean circulation, connectivity and marine heatwaves to support an enduring seafood sector.	5	\$11,500,000
National Institute of Water and Atmospheric Research Ltd	New technologies to double the effectiveness of on-farm diffuse pollution mitigation	5	\$8,000,000
	Advancing New Zealand's carbon inventory: forest, grassland, and urban environments	5	\$11,455,000
Scion	Bark Biorefinery: Unlocking new hydrophobic polymers and a mountain of wealth	5	\$9,980,000
University of Auckland	Data informed decision making and automation in orchards and vineyards	5	\$16,769,775
	Discovery and nonclinical development of an optimized disease-modifying therapy for type-2 diabetes	5	\$13,036,530
	Microbial conversion of kelp to high nitrogen plant and animal feeds	5	\$6,091,955
University of Waikato	He Waka Eke Noa: Maori Cultural Frameworks for Violence Prevention and Intervention	4	\$2,160,384
Victoria University of Wellington	Efficient Drug Development from Transition State Theory	5	\$7,394,610
	Addressing the need for magnetic memory to enable superconducting computing	5	\$5,971,120
	Tuneable monolithic magnetoresistive sensors for asset management	4	\$4,800,000
	Fungal factories: Synthetic Biology for the Manufacture of High Value Products	5	\$8,861,560