

2017 SFTI Challenge SEED Projects

Organisation	Project Name	Description	Science Leader	Total Funding
1. Canterbury University	In-Vehicle Touchscreens: Improving Human Performance and Reducing Attentional Demands	Developing new understanding of touchscreen interaction during vibration, and improving interaction with touchscreens in vibrating environments is the aim of this project.	Andy Cockburn	\$200,000
2. Otago University	Computational Glasses - Head-mounted displays for the visually impaired	The project will develop prototypes for computational glasses that analyse the environment and change it to compensate for user impairment.	Tobias Langlotz	\$199,999
3. University of Auckland	Mechanochemical conversion of biomass into commodity chemicals	Researchers will look to convert suberic acid, a compound present in cork and castor oil, into phthalates, and to transform cyclopentanone, a compound attainable from agricultural waste and forest residues, into adipic acid.	Jonathan Sperry	\$81,917
4. Waikato University	Secure, shared and collaborative: treasure in the block chain	The distributed ledger technology known as 'Blockchain' shows considerable promise for use in secure, distributed systems of collections of information across traditional boundaries.	Steve Reeves	\$198,860
5. University of Auckland	Executable Heart-On-Chip for validating cardiac devices against drug effects	A project to develop technological innovation for pacemaker certification that accommodates drug-induced effects.	Avinash Malik	\$189,281
6. Massey University	Closing the Gaps in Static Program Analysis	Poor software quality and vulnerabilities can be exploited for malicious activities. Static Program Analysis, where bugs and vulnerabilities are detected by models extracted from code without executing the program, will be the focus of this project.	Jens Dietrich	\$197,329

2017 SfTI Challenge SEED Projects

Organisation	Project Name	Description	Science Leader	Total Funding
7. University of Auckland	Womb with a view: Software connecting pregnant women and fetus	Aimed at encouraging pregnant women to quit smoking, this project will develop a 3D model for web pages and mobile devices that demonstrate how smoking impacts their own, and their unborn children's, circulatory systems.	Harvey Ho	\$199,921
8. University of Auckland	Wearable sensors for gait assessment in lower extremity disability population	A project to take a novel approach to address limitations of current 'best practice' rehabilitation for gait disorders by exploiting advances in wearable sensors and computational modelling.	Julie Choisne	\$199,999
9. University of Auckland	Underground wireless data acquisition network using Low Power Wide Area Network	Focussing on ensuring long term, reliable, wireless data acquisition by investigating underground agriculture sensing.	Kevin Wang	\$196,448
10. University of Auckland	Modelling and improving emissions / energy efficiency in NZ's transport systems	This project will look to model vehicle emissions in strategic transport modelling tools.	Andrea Raith	\$199,471
11. Victoria University of Wellington	Machine Learning Based on Rat Brains	Researchers will seek to identify models of learning based on rat-neuroscience to develop new artificial intelligence (AI) algorithms.	Will Browne	\$198,756
12. Victoria University of Wellington	Landscape-scale augmented reality: enhancing public understanding of our cultural heritage	Potential economic and social impacts of this project include enabling increased cultural understanding by augmenting virtual reality.	Neil Dodgson	\$199,586
13. University of Auckland	Deployable Nano-Satellite Synthetic Aperture Radar for Monitoring NZ's EEZ	Developing underlying science and technology needed to provide NZ with an overhead monitoring capability using space-based assets will be the focus of this project.	John Cater	\$198,704

2017 SfTI Challenge SEED Projects

Organisation	Project Name	Description	Science Leader	Total Funding
14. Massey University	Novel Approaches for Impaired-Speech Recognition	Researchers will seek to develop adaptive-personalised speech systems recognising individual impaired speech and generate intelligible speech. The systems are based on a unique music retrieval technique and could be used on mobile devices, like smart phones, tablets and PCs, such as human to robot interactions.	Ruili Wang	\$200,000
15. Waikato University	Acoustic Vector Network Analyser	This project aims to improve measurement of object acoustic properties eg the acoustic permeability of pasture as a function of its dry matter yield.	Jonathan Scott	\$143,953
16. Massey University	Distance and Direction Estimation for Acoustic Bird Monitoring	Estimating population densities by locating bird calls using mathematical and statistical methods.	Stephen Marsland	\$200,011
17. Scion Research	Visual recommender technology for exploratory analytics: predicting forests futures	This project will explore the potential to use visual recommender technology to analyse complex spatiotemporal data sets.	Ralf Gommers	\$199,614
18. Victoria University of Wellington	Data analytics to enable wide-area monitoring of electricity distribution lines	Use of new, automated data-analytics and modelling to extract information from 3-dimensional solid state magnetic field sensor measurements.	Fiona Stevens-McFadden	\$200,000