NEW ZEALAND. NEW SOLUTIONS. BETTER OUTCOMES.

Medtech Delegation to Houston

5-9 MARCH 2018
New Zealand’s Callaghan Innovation and MedTech Centre of Research Excellence (CoRE) are leading a fact-finding mission to the Texas Medical Center in Houston. Their aim is to investigate opportunities for collaboration on medical research and product development and pave the way for New Zealand medtech companies to scale up and bring their innovation to international markets.

This delegation represents some of the most innovative companies and researchers in this dynamic sector in New Zealand. It provides a platform for New Zealand medtech company representatives, academics and clinicians to meet leading experts in their fields in the United States.

The people in this brochure have been selected for their ground-breaking innovation, unique expertise, global ambition and practical combination of R&D and business skills, as well as their passionate interest in connecting with Houston and the US.

Kiwi companies in the health technology sector make a substantial contribution to the economy. The New Zealand Health Technology Review reported that the sector is “highly motivated and capable of delivering new technologies that will bring improved outcomes to health systems and patients, both locally and on a global scale.”

The same review found that “The pipeline of smaller companies innovating in health technologies should be an important focus for further support in the health innovation ecosystem as these are the future stars that will enhance New Zealand’s health and economic performance.”

The health information technology and medical device sector is one of the most exciting innovation sectors in New Zealand. In this small advanced economy, medtech companies alone are turning over US$1 billion.

This visit to Houston takes the relationship between Houston and New Zealand to an entirely new level.
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Exsurgo is a New Zealand based global company formed by medical engineering and clinical rehabilitation experts to alleviate the suffering and improve the quality of life of millions of stroke sufferers and other neurological patients world-wide.

Exsurgo has developed a suite of medical and health devices for neurological rehabilitation in general and stroke in particular, these devices offer unparalleled opportunity for recovery.

The company also runs its own rehabilitation clinics, franchises clinics and licences a cloud-based health and medical rehabilitation system to clinics, clinicians and patients as a subscription service.

Key attributes of Exsurgo technology:

- Stroke Rehab in the clinic or home
- High dosage therapy
- Brain plasticity exercises
- Machine learning targeted treatment
- Patient engagement through gamification
- Clinician and Patient monitoring through the Exsurgo App
- Patient goal setting through the Exsurgo App
- Self & Clinician directed rehabilitation
- Life changing rehabilitation outcomes

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For 20 years MoleMap has been saving lives with our advanced early detection program for melanoma. To save more lives we need to see more people. Our huge database of curated, consented images, along with one of the world’s leading developers of deep learning algorithms for healthcare, has allowed us to develop an artificial intelligence algorithm to classify skin lesions into cancer and not cancer. Combining this algorithm with our custom designed imaging systems and tele-dermatology infrastructure and network of world-class melanoma dermatologists will give us the ability to extend our reach further into the health community. The final piece of this solution is currently underway – a clinical trial to produce the data for regulatory approval.

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MOLTENO OPTHALMIC

MOLTENO Ophthalmic is a family-owned business with a globally recognized name in the ophthalmology world; a leader in the design and manufacture of glaucoma implants. For 35 years the company has been ‘head down’, focused on research to save vision and improve lives. Now is the time to grow, market our advanced glaucoma implants and to diversify.

New Zealand is BSE free. Molteno Ophthalmic has experience manufacturing animal-derived implants. The company is perfectly positioned to move into supplying processed implantable and pharmaceutical grade biomaterials to the world market.

Other promising projects are underway to develop dental bone grafts and veterinary ophthalmic implants.

The company is seeking a partnership, or new owners, to bring:

• business expertise to manage the growing company
• marketing expertise and budget
• capital for manufacturing facilities and quality processes for new products

CEO, Nina Molteno, will be in Houston to meet with potential buyers or partners, in order to leverage our market leader status and execute our growth strategies in an accelerated way.

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Ossability designs and manufactures veterinary orthopaedic implants and instruments. Our products are used to treat canine cranial cruciate ligament (CCL) injury, the most common elective orthopaedic surgery in dogs. We develop patient-specific treatment plans and compliment them with 3D printed implants and state of the art instruments that make the surgery simple. Our people are veterinary surgeons and engineers, and we are here because we love watching animals live healthy active lives.

Ossability is a bootstrapped start-up growing rapidly in Australia after initial success in New Zealand. Now, we are looking to expand into large international markets. We believe in owning the relationship with the end user and engage through a combination of direct service and third-party distributed hardware. Our future is leveraging our growing clinical database to make intelligent diagnostic, planning and product decisions that make it easy for general practitioner veterinarians to do great surgery.

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SAFER SLEEP

SAFERsleep is a leading anaesthetic IT company that designs software solutions which enable clinicians and healthcare institutions to streamline their data management, improve their anaesthetic records and reduce the incidence of anaesthesia drug administration errors. All information collected is then available via SAFERsleep Reporting which is a powerful tool that allows non-technical users such as healthcare executives, managers and clinicians to capture, process and analyse and distribute meaningful reports and dashboards. The SAFERsleep system can fully integrate into your existing hospital systems via standard industry protocols.

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Growing Business KPI’s using Value Based Care and PaaS solution - Go Well Health (GWH).

In the rapidly changing healthcare landscape, payers are asking providers worldwide to shift from volume-based care to value-based reimbursement models such as CMS’s Bundled Payments for Care Improvement. 80% of US providers want to participate in these alternative payment models but less than 40% are reaching their goals because of the complexity and lack of suitable tools to meet the requirements.

GWH provides a practical, cost-effective solution providing strong value propositions for ALL stakeholders (patients, physicians, providers, suppliers, payers and government). Pilots in public hospitals in the UK and private in Australia are using our proprietary software. We believe exponential growth in this sector warrants strong investment. Most health systems have still to find a viable solution.

GWH’s innovative suite of tools means physicians can in a minute, provide their patients with a personalized care program that drives high levels of engagement and better outcomes before, during and after a medical event. Strong, measurable patient engagement reduces costs, variations in care, risk of litigation and avoidable readmissions maximising value-based revenue opportunities. Satisfied patients with great outcomes become persuasive advocates driving new business and improved KPI’s for all.

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Tiro Medical develops tools for the Digital Medicine sector. By leveraging digital information Tiro creates products that enhance the clinical decision making processes, improving the standard of care whilst reducing expenditure.

These tools utilise a core capability of digital physiological analysis: the processing of large amounts of digital data into insightful, clinically valuable metrics. Tiro is commercialising two distinct products:

- A zero radiation, zero pain breast cancer imaging system designed to address the limitations of current modalities.
- An ICU patient dashboard providing previously unavailable physiological metrics, automated treatment optimisation as well as virtual clinical trial capabilities. The system is clinically proven to reduce both length of stay and treatment costs.

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URIGO

 Millions of people worldwide are unable to sense the fullness of their bladder, or control the voiding process. Beyond the personal anxiety this causes, there are also significant social, financial and medical consequences. Urigo Limited is an award winning startup developing a slim, discreet, lightweight wearable device that gives users the certainty of knowing when to go.

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Veriphi is a trail blazing New Zealand medical device company which is using laser verification to prevent injury and death from intravenous (IV) medication error in hospitals. Medical error is the third most common cause of death in the United States and medication error is one of the most common forms of patient harm in hospitals globally. Patients are twice as likely to be harmed by intravenous drug errors than from drugs given via other routes. As drug regimens for an aging population become more complex, new intelligent solutions are required to minimize the risk of patient harm. Veriphi’s device is the solution.

The Veriphi analyzer uses lasers to verify drug identity and concentration whilst fitting seamlessly into existing clinical practice. IV drug doses will be verified in seconds as they are compounded or before administration at the bedside.

Veriphi will sell analyzers and consumables to contribute to reducing the 400,000 injuries and $3.5 - $5.6 Billion medication error costs in the USA.

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At Whānau Tahi, we have a vision of families living healthily, participating fully in society, and who are economically secure.

And yet our core business is software...so how do we achieve our vision? Our software places people’s health and wellbeing first. Whānau Tahi – Family First.

Our technologies bring providers to the people they look after: whānau (family). In the past whānau (family) sat at the end of a long line of providers who knew very little about each other. We changed that!

We saw that the old ways weren’t working. We believed that harnessing technology would help change people’s lives. We looked for software that we could buy — there wasn’t any!

So we defined exactly what we needed and built it ourselves. Our people now have online whānau (family) plans. Families sit at the center of those plans, with tools and knowledge to manage it themselves.
Noel Group Inc. is a Houston-based, ‘smart capital’ investment arm and business enablement layer for NZ Inc. It has a long history with NZ companies, including portfolio investment, with deep roots on both sides of the Pacific as a result. Noel’s beachhead initiative, the Houston Launch Pad (www.houstonlaunchpad.net), is a campus-like environment, located just 10 minutes from George Bush International airport, and with all the facilities needed for NZ entrepreneurs to establish quickly and with minimal risk. A range of professional services are available including colocation & infrastructure, marketing, business development and investment & advisory. Its ‘mission’ is to provide a soft landing and high level connections for NZ businesses entering the US market via Houston > Texas > ‘The South’.

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**Diana Siew | Houston Delegation Co-Lead**

Diana Siew has over 15 years of experience in medtech research management, early stage technology commercialisation and growing the innovation ecosystem. Using her extensive network of researchers, companies, health providers, government and investors, she frequently connects and facilitates collaborations for further research and commercialisation. She is responsible for the MedTech Centre of Research Excellence’s external engagement strategies and stakeholder relationships. As part of this role, she works with Government groups on strategic health research and innovation initiatives to introduce new opportunities to the NZ medtech sector.

Diana co-founded the Consortium for Medical Device Technologies (CMDT), a nationwide medtech research-industry network that supports taking medtech innovations to market. She sits on funding panels and boards - on a formal and informal basis - and mentors research entrepreneurs and start-up companies. Diana is interested in successful ecosystems that facilitate medical technology development. A particular focus is the environments that help grow start-ups into sustainable companies. She is also keen on developing international innovation (including clinical trials) and investment networks for NZ research and companies.

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**Denise Taylor**

I am a researcher, a clinician and an applied neuroscientist. My interest is in bringing new technologies and treatments to people with neurological disorders and vestibular disorders. I work in a multidisciplinary research team of scientists, clinicians, engineers and perhaps most importantly, patients. Our team’s value lies in co-designing and developing technologies with a solid grounding in clinical and patient-centred practice. We currently have work in devices for upper limb rehabilitation after stroke, a novel neuromodulatory brain computer interface device to enhance rehabilitation after stroke, and virtual reality interventions for people with vestibular disorders.

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Geoffrey Chase
MedTech CoRE and University representative. Our strengths are in clinical application of physiological models and computation at the bedside to achieve unique, next-generation clinical outcomes, and have proven these in the areas of glycemic control, and cardiovascular and pulmonary medicine, in intensive care and chronic disease. Outcomes are now used in hospitals in NZ and internationally as standard care. These are areas of unique NZ strength and capacity.

I have been part of 4 start-ups and have extensive experience in identifying innovation opportunities, and feel my record of 30+ clinical trials with partners in 7+ countries demonstrates my record in creating and running multi-disciplinary collaborations with medical professionals leading to improved outcomes.

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Greg O’Grady
A/Prof O’Grady is a general and colorectal surgeon at Auckland City Hospital, and principal investigator at the Department of Surgery (FMHS) and Auckland Bioengineering Institute. He has cross-disciplinary research expertise in surgery, translational GI physiology and medical devices / bioengineering.

He leads the Surgical Engineering Lab, and the clinical / experimental arm of the GI Bioengineering Group, and also collaborates closely with the Auckland Colorectal Research Group. This research is funded by competitive grants from the New Zealand HRC, NIH, MedTech CoRE and the Royal Australasian College of Surgeons. He has published >130 PubMed Indexed Articles and numerous patents.

He is also Director of two medical device spin-out companies arising from his research work: Surgical Design Studio and FlexiMap.

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Jaydee Cabral
My expertise is in the synthesis, physicochemical characterization, and in vitro/in vivo biocompatibility of medical hydrogels; as well as 3D bioprinting, regenerative medicine, and tissue engineering. I am a Biomedical Scientist with a chemistry background and possess the ability to collaborate with different disciplines to perform novel research with an ultimate clinical application. I played a key role in the commercialization of a NZ based FDA-approved medical device, Chitogel™. Being comfortable in both the chemical and biological sciences, I am able to identify opportunities at the interface of those fields. My current research project funded by the Health Research Council of New Zealand is to create clinically relevant 3D bioprinted tissue constructs for regenerative medicine wound healing applications.

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Marcus King
Marcus’ research focus is rehabilitation following neurological injury or disease and the use of computer gaming for rehabilitation or improving quality of life. He has strong focus on end user engagement and works closely with business, academia, clinicians and patients as well as user groups like the NZ Stroke Foundation, the MS & PD Society and Autism NZ. His ability to understand the translation from fundamental research to applied technology enables him to expedite commercial uptake of research findings and has been instrumental in creation or growth of a series of digital health gaming companies in NZ: AbleX Healthcare Ltd., Mtech Games Ltd. and Exsurgo Rehab Ltd. Marcus was NZ innovator of the year in 2011 and was awarded Royal Society Science medals in 2001 and 2010. His role at Callaghan Innovation is to introduce new innovations or technologies to business and to expedite the commercialisation of research.

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Poul Nielsen

The Auckland Bioengineering Institute has significant expertise in the development of anatomically and biophysically based mathematical models of all aspects of human physiology, from genes to individuals, together with the experimental techniques and novel instrumentation required to identify cell and tissue properties and perform model validation experiments. The understanding of biological function gained through this close integration of modelling, bioinstrumentation, and experiment is applied to medical diagnosis, drug discovery, and medical device manufacture.

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Shieak Tzeng

Elucimed’s ultimate goal is to take medical errors – currently the 3rd leading cause of death in the US – out of the top ten. We do this by providing healthcare providers with the information that they need to make individually-tailored treatment decisions. Our platform – called Ensemble – can extract hundreds of unique data features from medical devices, allowing artificial intelligence algorithms to map out with high precision an individual’s physiological state. Our 5-year goal is to have Ensemble out-perform all risk prediction tools used in intensive care and cardiac surgery in Europe and the US.

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The Auckland Bioengineering Institute (ABI) is a research institute at the University of Auckland housing approximately 230 academic and professional staff and graduate students. The primary goal of the ABI is to develop anatomically and biophysically based mathematical models for all aspects of human physiology from genes to whole organs, together with the experimental techniques and instrumentation required to measure cell and tissue properties and perform model validation experiments. The understanding of biological function gained through these models is applied to medical diagnosis, drug discovery and medical device manufacture. Most of the projects undertaken by the Auckland Bioengineering Institute involve a combination of instrumentation development, experimental measurement, mathematical modelling and model validation.

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ABOUT CALLAGHAN INNOVATION

As New Zealand’s innovation agency, Callaghan Innovation works with New Zealand businesses to develop and commercialise their new technology.

Callaghan Innovation connects businesses to the networks, capability and funding they need to make their ideas happen. It challenges both its customers and New Zealand to step up to the challenge of technological change.

It has more than 200 of New Zealand’s leading scientists and engineers dedicated to solving tough technical problems, programmes that help hundreds of companies improve their ability to innovate, and boosts business R&D through grants funding.

CallaghanInnovation.govt.nz

Andrew Clews | Houston Delegation Co-Lead

Andrew Clews is Callaghan Innovation’s principal Business Innovation Advisor supporting Med-Tech and Life Sciences companies and represents Callaghan Innovation as part of the Consortium for Medical Device Technologies (CMDT). As the New Zealand Government’s innovation agency, Callaghan Innovation works with New Zealand med-tech businesses to develop and commercialise their new technology ideas.

Andrew joined Callaghan Innovation following more than 16 years in the US working in complex sectors as diverse as electromechanical devices and biotech/cleantech. He has a background in business internationalisation and the commercialisation of new technology, new products and new brands in complex categories. Andrew has held senior management and leadership team roles in a wide variety of organisations from major corporates to startups and IPO-focused growth companies.

Andrew holds a BA in political science from the University of Auckland, and has done post graduate studies in international business and marketing. He has led global and regional teams in marketing, sales, business development and product development, project management and corporate affairs.

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ABOUT THE MEDTECH CENTRE OF RESEARCH EXCELLENCE

The MedTech CoRE is a research collaboration initiative of the CMDT hosted by the University of Auckland. It is NZ’s translational medtech research platform in developing new medical devices and digital health technologies, expertise and talented graduates to support existing medtech companies as well as new startups.

The CoRE supports five research themes with each having a special focus which NZ contributes to globally.

Diagnostics and therapeutics – new technologies for personal care integrating physiological models for diagnosis and enhanced treatments

Interventional technologies - minimally invasive techniques and multi-scale simulations to predict outcomes and optimize treatment strategies

Assistive technologies – rehabilitation options to support recovery and improve quality of life (stroke, traumatic brain injury)

Telehealth and health informatics – empowering and motivating patients and using data to support clinical decision-making

Tissue Engineering for regenerative medicine – therapeutic scaffold products for bone and tissue repair.

For more information contact medtechcore@auckland.ac.nz www.medtechcore.org.nz
ABOUT THE CONSORTIUM FOR MEDICAL DEVICE TECHNOLOGIES

The Consortium for Medical Device Technologies (CMDT) is a single point of contact to New Zealand’s medical technology and research sector. It promotes collaboration and fosters partnerships in its networks in order to achieve optimized research outcomes and commercial goals.

The CMDT helps to accelerate innovation in the medtech sector by:

- Providing a streamlined approach to the R&D and product development process;
- Contributing expertise and capability: and
- Partnering with other innovation providers to offer complete solutions to clients.

The network is a partnership between Auckland University of Technology, Universities of Auckland, Canterbury and Otago, Callaghan Innovation and Victoria University of Wellington.

The CMDT undertakes strategic projects in collaboration with government organisations, and the Medical Technology Association of NZ and NZ Health IT, the two key bodies in New Zealand’s medtech sector.

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