



# Tāmaki Update

June 2011  
A newsletter for  
Tāmaki Innovation  
Campus

## Simulation skills now at Tāmaki

Building activity on the ground floor of Building 721 over the past few months heralds the early July arrival of a new group at Tāmaki; the Simulation Centre for Patient Safety.

The simulation-based research and education arm of the Department of Anaesthesiology is poised to relocate from its existing premises at the Advanced Clinical Skills Centre on the Mercy Hospital site in Epsom.

The Director of simulation-based training, Dr Jane Torrie, who is also an anaesthetist

at Auckland City Hospital, says the move is very timely as the research teams associated with the unit have been highly successful in gaining grants for several new projects.

“Having the new facilities will be very helpful in delivering on these,” she says.

“Our current activities are a great fit with Tāmaki - a research-intensive, academic and innovation campus - and we are looking forward to working right in the middle of a University campus.

“We want to continue being a resource for those utilising simulation to teach healthcare

students and staff, and for research into areas such as education effectiveness, teamwork, ergonomics, and other factors affecting patient safety.

“Our team has a major interest in researching and teaching interdisciplinary teamwork in acute healthcare, so links with psychology, surgery, nursing, intensive and emergency care, and anaesthesia assistants are particularly important.”

Dr Torrie says the new facility will help to accommodate the increasing numbers of healthcare undergraduates coming through. “The simulation team of the Department of Anaesthesiology currently trains undergraduate doctors, nurses and pharmacists, and they will be seen around Tāmaki starting in late July, along with participants on some of the external acute-care courses we provide.”

The simulation centre includes a well-equipped operating room, a ward area which can transform into a postoperative recovery area/ward/emergency department bedspace, an airway skills lab, and other training spaces.

Depending on the objectives of the simulation, “patients” may be trained faculty or manikins, with various capabilities to interact with the participants and respond to their actions.

“We’ve got quite a family of manikins to bring to Tāmaki, from newborn to large adults, with the associated equipment to provide very realistic settings in healthcare. Once they are settled in their new home, we plan to invite Tāmaki staff to visit the facility and get a clearer idea of what we do and what we can offer,” Dr Torrie says.



From left: Dr Magdi Moharib (Director of Resuscitation Training), Kaylene Henderson (Anaesthetic Technician), Professor Alan Merry (Head of Anaesthesiology), Dr Jane Torrie (Director of Simulation-based Training) at their soon to be completed new facility.

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## Message from the Head of Tāmaki Innovation Campus

Dear Colleagues

It gives me great pleasure to welcome new residents to the campus, the Simulation Centre for Patient Safety, a division of the Department of Anaesthesiology. The Centre is involved in researching and teaching interdisciplinary teamwork in acute healthcare, and have a range of students from healthcare undergraduates through to experienced healthcare workers. The Centre staff are very excited about their new facility and about joining us at the Tāmaki Innovation Campus, and they are looking forward to meeting other groups on campus involved in synergistic activities. Once they are settled in, my office will arrange an event to assist with making these introductions.

Having completed phases one and two of the Tāmaki innovation Campus Plan (the relocation of the Library and Information Commons to Building 730, and the establishment of the Simulation Centre for Patient Safety in Building 721), planning is progressing towards the "I" Building consolidation. This phase will move the academic plan closer to fulfilment, with the establishment of the Health Innovation zone clustered around Buildings 721, 730 and 731. This is also the area of the campus where undergraduate students and services is now concentrated, with the relocation of student services and Campus Information to this zone creating a hub for student activity.

Planning is also underway for developments on the south side of the campus, where there will be considerable growth in materials together with manufacturing and other engineering activity. A new building is planned adjacent to the Ray Meyer Research Centre, and this will form the nucleus of the Materials Innovation zone, creating a centre for research in materials, including plastics and polymers, composites, light metals, surface materials, geomaterials, a structural testing hall and other associated goods.

On a sad note, I would like to take this opportunity to acknowledge Associate Professor Allan Easteal from the Department of Chemistry who died recently. The contribution Allan made to his field of expertise was far reaching and significant. His students (past and present) and colleagues from the Faculties of Science and Engineering, cannot speak too highly of him, and his dedicated research and teaching over many years at this University. I know they will all agree that Allan's death is a significant loss to The University of Auckland and to the Tāmaki Innovation Campus.

The articles in this issue of the Tāmaki Update highlight the exciting activities and developments taking place on your campus, and I hope that you will enjoy reading about them.

Best wishes

**Professor Michael C.R. Davies**  
Head of Tāmaki Innovation Campus



## Tāmaki students make an impact

### International stage for summer scholar

Rebecca Allenby is one of only three students from The University of Auckland to be selected to attend the U21 Undergraduate Research Conference at Fudan University in China, as a direct result of her research for the 2010/2011 Tāmaki summer scholarship.

"Rebecca was able to highlight the fact that she has already been involved in research, and given an oral and poster presentation - all aspects they were looking for in applicants but not experiences that many undergraduate students have had," says Rebecca's supervisor, Dr Fiona Pienaar.



Rebecca Allenby (far left) with her fellow Tāmaki Transformation Programme summer research scholars.

"She has been selected for the oral presentation, so will be presenting her summer scholarship once again, but this time in front of an international audience - very exciting!"

The Tāmaki summer scholarships are based on projects around the objectives of the Tāmaki Transformation Programme (a 20 year urban regeneration programme in the Glen Innes, Point England and Panmure region). The students are

continued on page three



## The beauty of Tāmaki

Godfrey Boehnke, the University Photographer, has recently taken some amazing photographs of the Tāmaki Innovation Campus, and one is included here for your enjoyment.

These photographs will be used to promote research and academic activities at Tāmaki in our marketing collateral.

A new Tāmaki website is being developed, along with banners and information for innovation partners, as we re-brand the campus The University of Auckland Tāmaki Innovation Campus.

## Tāmaki students make an impact

*continued from page two*

required to produce a poster and give a presentation of their results, over and above the report that is a requirement of the University's summer scholarship scheme.

Rebecca says that the Tāmaki summer scholarship experience has given her enormous confidence and the insight and determination to want to explore pursuing a research pathway.

Currently in her fourth year of a conjoint Bachelor of Health Sciences and Bachelor of Arts degree, Rebecca's summer scholarship looked at experiences of childhood in the Tāmaki area.

Rebecca found that greater consultation with children is needed along with better communication networks.

## Bugs reign at Stonefields School

Annette Evans has made a big impression on the kids at Stonefields School, just down the road from Tāmaki. She has recently taught them about what insects are and why they are so important, especially in our gardens. According to the kids Annette is an excellent guest speaker, and she rocked!

Annette is studying for a Postgraduate Diploma in Biosecurity and Conservation. "One of the things I enjoyed most when working with the kids was sharing with them my passion for biology and stimulating their own interest in conservation," says Annette. "I thoroughly enjoyed being able to interact with the kids and see their excitement and enjoyment."

As part of her summer scholarship, Annette has developed a wetland monitoring plan for the newly developed Stonefields wetland to provide valuable data on local biodiversity. One of the aims is to maximise the involvement of the local community, and students from

Stonefields School participated by assisting Annette conduct bird counts and check tracking tunnels.

"It is my goal that data from this monitoring programme will continue to be collected indefinitely, to gain insight into the changes in health and diversity of this new wetland area," she says.

"I hope that the involvement between Stonefields School and The University of Auckland continues because I think such connections are valuable and are the foundations for establishing and maintaining relationships with the community."

Once Annette has completed her masters degree, her future goal is to work both in New Zealand and overseas; striving to enhance the restoration of native biodiversity and ecosystems.



Annette Evans presenting to the students at Stonefields School



## Campus residents, good sports

The western side of the Tāmaki Innovation Campus has been home to UniSports Sports Medicine for almost as long as the Campus has been operational.

Although primarily a commercial operation, it also has some strong links with The University of Auckland and fits neatly into the philosophy of combining medicine with innovation, also highlighted elsewhere at Tāmaki.

In addition to its clinical services, Unisports is involved in the Postgraduate Diploma in Sports Medicine run by the University's Department of General Practice and Primary Health Care, both through academic and clinical input into the course.

Orthopaedic and medical divisions provide elective medical student teaching and clinical placements for New Zealand and overseas students. Orthopaedics has established and successfully run post fellowship and fellowship training while the medical division offers registrar placements for the Australasian College of Sports Physicians.

Additionally, undergraduate and postgraduate students from the Auckland University of Technology Physiotherapy School complete clinical placements with the physiotherapy division.

UniSports Sports Medicine began in 1993, bringing together sports medicine, orthopaedics and physiotherapy for the first time. It has expanded its clinical base to include sports podiatry, massage, hand therapy and sports nutrition.

In 2008, it became endorsed as a FIFA Centre of Excellence for the provision of sports medicine services (the only such centre in Australasia).

Graeme White, a partner, explains that a long relationship with



Unisports Sports Medicine is located in Colin Maiden Park at the Tāmaki Innovation Campus.

adidas has ended and the UniSports name and re-branding is now to the fore.

"To get an idea of our size, we reach around 50,000 patients a year, which puts us at the equivalent of a large private practice. We have around 22 professional staff, including sports physicians, physiotherapists and consulting surgeons.

"The concept of a multi-disciplinary approach to the management of sports related problems is one of the strengths of Unisports. The collective input ensures injured athletes have access to immediate and thorough medical treatment of the highest quality and so provides the optimal setting for a speedy and complete recovery. And, a close association with the UniSports Training Centre offers an ideal location for the final stages of rehabilitation."



The team at Unisports Sports Medicine.

## Powerful idea moves to campus



HalolIPT Product Development Engineers, Michael Kissin (left) and Jonathan Beaver

HalolIPT has just moved on campus, bringing with it an astonishing pedigree for a fledgling company.

The high-tech company, in partnership with The University of Auckland and founded by Uniservices and Arup (a global engineering and design consultancy), is the first in the world to commercialise wireless charging technology.

"Tāmaki represents a prime location for an innovative company like HalolIPT," says CEO, Dr Anthony Thomson. "Being proximate to innovative materials groups

such as the Centre for Advanced Composite Materials and the Plastics Centre of Excellence is vital." Dr Thomson hopes the cluster effect will provide innovative solutions and help generate valuable IP.

The technology allows cars fitted with an integrated receiver to charge automatically, using inductive power transfer (IPT) by parking over a transmitter pad in the ground.

Dr Thomson says while the power units will initially provide static charging at home, the company is looking at higher-powered

systems to address public and workplace wireless charging and, eventually, taxi ranks and buses. Other early adopters such as fleets and short-term car hire are also targets.

The company's induction charging technology is part of the Phantom Experimental Electric vehicle developed by Rolls-Royce Motor Cars and launched at the Geneva Motor Show in March this year. It aims to explore alternatives to traditional internal combustion for the first time in the company's 107 year history.

HalolIPT has also just won the CleanEquity Monaco award for 'Excellence in the Field of Environmental Technology Research', selected from over 400 cleantech companies from across the cleantech sector.

Dr Thomson says people traditionally disregarded electric cars because there weren't enough charging points and feared that they would run out of charge or put cars away and forget to plug-in.

However, he likens wireless charging to wireless data: a smart, ubiquitous system that carries power wherever you are and happens automatically, whether parking at home, at the shops, at work, or on the move.

## Tribute to Associate Professor Allan Easteel



Associate Professor Allan Easteel passed away on 6 June 2011. Allan has left an enduring legacy as a key pioneer in polymer chemistry in New Zealand. That legacy embraces numerous masters,

PhD and postdoctoral research students, critical contributions to the development of several materials research centres (Polymer Electronics, Advanced Composites, Materials Accelerator etc) and funded research programmes (Membranes and Micro-pumps, Sustainable Composites, Hybrid Polymers etc).

Perhaps one of his greater achievements has been in establishing strong and productive partnerships with New Zealand industry, and in contributing to a new era of New Zealand based innovation in polymers and composites.

Allan was an inventive, insightful, attentive and supportive supervisor and a very collegial colleague who always demonstrated exceptional humanity. He attracted deep affection from all who worked with him or for him. We all know that in parallel with his love of experimental chemistry was an even deeper affection for his family and especially his grandchildren.

We will all miss him greatly.

Allan completed his undergraduate and early postgraduate studies at The University of Auckland, then moved with his PhD supervisor to the University of Tasmania where he completed his PhD in 1966. He immediately took up an academic appointment in the Department of Chemistry at The University of Auckland. Allan worked initially in molten salt electrochemistry and in the physical chemistry of electrolyte solutions. He took notable periods of leave at Purdue University with Professor Austen Angell and in the Vitreous State Laboratory at the Catholic University of America, Washington DC, before a series of leave visits to the Australian National University (ANU). This culminated in a period of special leave from 1981 to 1987, spent with Dr Lawrie Woolf at the Diffusion Research Unit in the Research School of Physical Sciences, ANU. Following his return to Auckland and through the 1990's Allan moved his research interests into the burgeoning field of polymer science.



## Smashing good research

Dr Mark Battley vividly remembers a childhood hobby of building small model boats and then throwing them out the window into the pool to see what happened.

Although his research at Tāmaki’s Centre for Advanced Composite Materials is considerably more sophisticated, he admits it has the same concept at heart.

The research is investigating what happens to the hulls of composite material boats when they slam into waves (the boy’s game throwing boats out the window grown into a full-blown project). This is currently funded from the USA’s Office of Naval Research (ONR), which is keenly interested in the performance of composites.

One of the features of the research is that it includes substantial collaboration with several major international universities in the USA and Europe (Sweden, France and Switzerland) and also with New Zealand industry.

The team, which includes Mechanical Engineering PhD student Tom Allen, is extending a previous research project initially funded by the New Zealand Government along with support from high-tech marine company SP-High Modulus. The project began during Dr Battley’s 14 year tenure at Industrial Research Limited, where he developed an internationally unique testing facility for controlled impact of sections of



Dr Mark Battley at the Centre for Advanced Composite Materials

boat hulls into a water tank at high speed. Along with the experimental studies, new computer modelling methods are being developed to predict the interaction of the structure with the water.

The current ONR funded project is now three and a half years into its original five years, with a larger contract extension presently under negotiation. Dr Battley tracks the twists and turns of the project through its various partnerships and associations, pointing to the collaboration of Sweden’s Royal Institute of Technology as being pivotal in leading through to the US linkages.

The outcome will be stronger, lighter and more reliable boats made from composites. Although traditionally used on small or

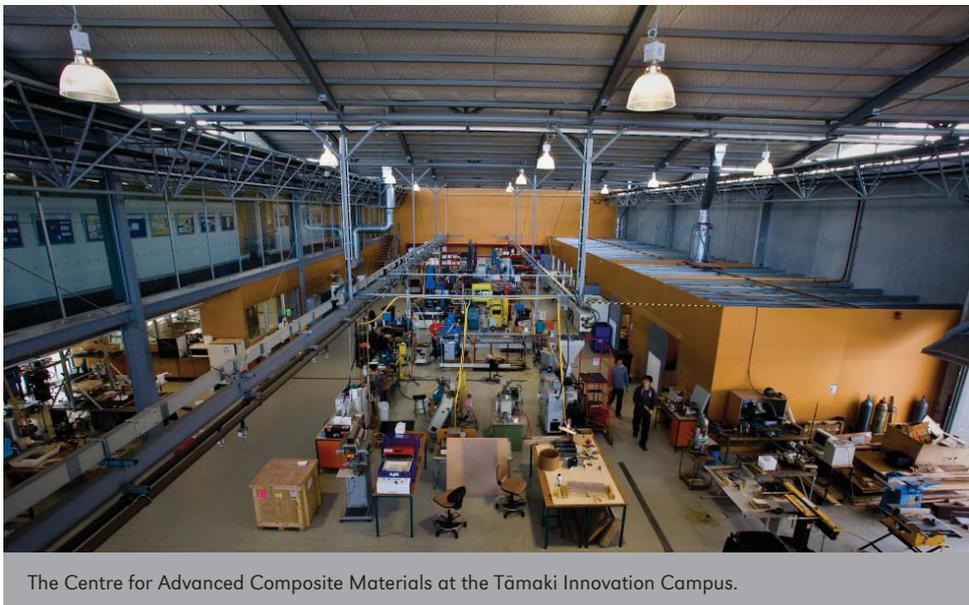
medium sized boats, composites have significant potential for use in fast patrol craft and larger ships.

“It will allow boat designers and builders to have more confidence in how strong a hull should be, in varying sea conditions,” he says. “At a technical level, hulls change shape when they hit waves and that then changes the pressure load, which we need to understand to build stronger and lighter.”

The work has been applied to full scale measurements on boats, recently including a New Zealand built round-the-world racing yacht. Dr Battley says while it is both high profile and an ‘at work’ real life measurement, it doesn’t have the scientific advantages of the controlled environment of the tank testing.

Other projects arising out of the research and its collaborative partners include on-going interaction with SP-High Modulus, a commercial materials characterisation job for a Swiss material supplier, and also a project looking at highly flexible structures for racing yachts, with Switzerland’s leading technical university EPFL. The ongoing relationship with the Royal Institute of Technology in Sweden (which dates back to Dr Battley’s time as a PhD student) continues to be an important part of the work, with exchanges of staff and students.

It is, he says, precisely these links and collaborations that are a significant benefit arising from the research. It also positions the University as a leader in the field and raises its profile internationally.



The Centre for Advanced Composite Materials at the Tāmaki Innovation Campus.