

THE INSIDE STORY

Issue 38, October 2019



Govt funding will boost research into possum control & marine ecosystems

Left to Right: Dr Michael Knapp, Dr Tim Hore and Dr Melanie Laird

Researchers in the Department of Anatomy are involved in research projects that have been awarded funding from the Government's Ministry for Business Innovation and Employment (MBIE) Endeavour Fund.

Dr Tim Hore and Dr Melanie Laird will receive \$1M over three years for their project on possum fertility control and eradication. Dr Michael Knapp is a key researcher on a project led by Associate Professor Chris Hepburn from Marine Science. They have received \$1M over three years for their project looking at cultivating resilient marine forests to rebuild productive coastal ecosystems.

"Enabling possum fertility control and eradication"

Dr Tim Hore and Dr Melanie Laird (Anatomy)

Possums are a serious economic and environmental threat to New Zealand, making eradication a national priority. Tim and Melanie's research aims to deliver the first ever method to disrupt brushtail possum fertility through germline modification. If successful, this work will result in a pathway for the development of genetic biocontrol technologies for possum eradication in New Zealand. Using the germline modification strategies that Tim and Melanie will develop, genetic changes affecting possum fertility (such as making females sterile) could be engineered to spread through a population in a self-sustaining way, ultimately resulting in local eradication.

"Cultivating resilient marine forests to rebuild productive coastal ecosystems"

A/P Chris Hepburn (Marine Science), **Dr Michael Knapp** (Anatomy) et al.

Kelp-forest habitats are in decline along New Zealand's coastlines, echoing global patterns of loss. A key symptom of kelp-forest decline is a collapse of valuable coastal fisheries that are reliant on the services they provide. This project will develop the infrastructure and methodology to genetically select and reseed climate change resilient strains of *Macrocystis pyrifera* (giant bladder kelp) into areas where kelp-forests have been lost or are threatened by warming.

Nessie the Loch Ness ... Eel?

The wait is over. The results are in. Turns out, Nessie of Loch Ness is less of a monster and more likely to be a giant eel.

[Professor Neil Gemmell](#) has released his findings of the environmental-DNA sequence testing of 250 samples of lake water taken in June 2018.

DNA from all of the samples has been extracted, sequenced and compared against global DNA databases to get a comprehensive picture of all living species in, around and beneath the dark waters of Loch Ness.

The results confirm evidence of creatures such as fish, dogs, sheep, rabbits, humans and eels, including European eels, but no traces of monster DNA, Jurassic or otherwise.

"There is a very significant amount of eel DNA. Eels are very plentiful in Loch Ness, with eel DNA found at pretty much every location sampled – there are a lot of them. So, are they giant eels? Well, our data doesn't tell us anything about the size of the eels. We cannot discount the possibility that there may be giant eels in Loch Ness, but no freshwater eel of the sizes sometimes reported (4 metres plus) has ever been caught. Therefore we can't discount the possibility that what people see and believe is the Loch Ness Monster might be a giant eel, but it seems unlikely," Professor Gemmell says.

While this news may not be a surprise for many, those who still believe in monsters must surely find it difficult to argue against the science of e-DNA testing, which is a powerful new way to document, understand and protect our environment.

[World media coverage of the story has resulted in over 2600 articles in mainstream media outlets such as NBC, ABC (USA), the New York Times, BBC, the Guardian, Time, Yahoo and MSN; 45% of the coverage has been from USA media, followed by Germany (10%) and the UK (9%); the total potential audience of this international media coverage is a staggering 5.4 billion people! And that's just in mainstream media. In Social media, the story has been shared nearly 60,000 times on Facebook and featured in over 3,000 tweets.]



Professor Gemmell with some of the media outlets covering the story

On average, about ten sightings of unexplained objects in Loch Ness are reported every year.

Chris Taylor, of VisitScotland, said *"This scientific investigation led by Professor Gemmell into the inhabitants of one of Scotland's largest lochs has once again shone a spotlight on the Highlands. Its findings will provide further insight into what lies beneath but questions still remain, and visitors will no doubt continue to be drawn to the loch to seek the answers for themselves."*

Visit the [University of Otago](#) website or the [Loch Ness Hunters](#) website to read more on Professor Gemmell's findings.



The University of Otago has named Professor Neil Gemmell as one of its inaugural Sesquicentennial Distinguished Chairs. Visit the [University of Otago](#) website to learn more.

Voted New Supervisor of the Year



Research Fellow [Dr Charlotte King](#) has been named New Supervisor of the Year by the Otago University Students' Association.

Charlotte, whose research looks at migration, health and dietary changes in prehistoric populations, says she was surprised when she heard the news, but also thrilled that her doctoral students would think enough of her to nominate her for an award.

"I get to work quite closely with my students when we're out in the field, and I am quite interested in their lives and how they are progressing with their research. It's important to me that they know they can approach me about any problems they may have. I'm very excited about the work my students are doing and what they are going to achieve in the future."

Postgrads showcase their research

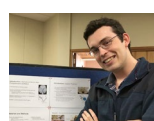
This year's Poster Day was a huge occasion for our 400-level postgraduate students as they presented the hypotheses, methods, and results of their year's work to staff and fellow students in the department. Sixteen students took part in the event, which also doubled as an assessment component for those taking the ANAT 458 paper as part of their 400-level programme.

The prize for best poster was awarded to Honours student Jacob Bond for his poster on the clinical anatomy of the extradural neural axis compartment in the jugular foramen. The judges commented that Jacob presented his poster with clarity and enthusiasm, and made the content completely understandable for the audience.

Congratulations to all our students who contributed to a fabulous day of learning.

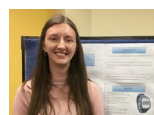


BSc(Hons) students and poster titles



Jacob Bond

Clinical anatomy of the extradural neural axis compartment in the jugular foramen.
Supervisor: A/P Ming Zhang



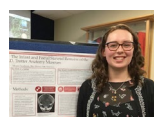
Katie Galvin

The effect of prostate cancer treatments on sleep quality: A pilot study.
Supervisor: Dr Erik Wibowo



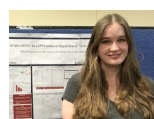
Ruby Parker

Hair today, gone tomorrow: Investigating arsenic, mercury and opiates in hair samples of Otago early settlers.
Supervisors: Prof Hallie Buckley, Dr Charlotte King



Megan Southorn

Forgotten children: The infant and foetal skeletal remains of the W.D. Trotter Anatomy Museum.
Supervisor: A/P Siân Halcrow



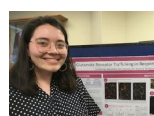
Elizabeth Southward

Role of microRNA in sAPP α -induced regulation of gene expression.
Supervisor: Dr Margaret Ryan



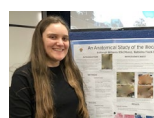
Catherine Spicer

Human-computer interactions: Is there more than meets the eye?
Supervisor: Dr Yusuf Cakmak



Courtney Westlake

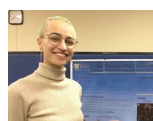
Glutamate receptor trafficking in response to sAPP α .
Supervisor: A/P Joanna Williams



Ashleigh Williams

An anatomical study of the iliocapsularis muscle.
Supervisors: Dr Natasha Flack, A/P Stephanie Woodley

PGDipSci students and poster titles



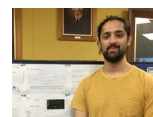
Toni Hoeta

Are tanycytes adult neural stem cells?
Characterizing the expression of NF-1 transcription factors.
Supervisor: A/P Christine Jasoni



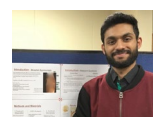
Karmilla Jaafar Amsak

Expression of anti-müllerian hormone and anti-müllerian hormone receptor 2 mice uterus during pregnancy.
Supervisors: Dr Jane Girling, Dr Mike Pankhurst



Simon John-McHaffie

Activin C in prostate cancer: A potential treatment?
Supervisors: Dr Karen Reader, Prof Helen Nicholson



Ryan Johnson

The origin, insertion and configuration of the bicipital aponeurosis.
Supervisor: A/P Ming Zhang



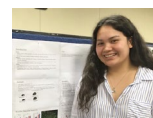
Tilda Leleai

Ethnic differences in demographic and clinical characteristics of cardiac surgery patients at Dunedin Hospital.
Supervisor: Prof Lisa Matisoo-Smith



Sinead Liddicoat

Degenerative joint disease in early medieval Ireland.
Supervisors: Dr Jonny Geber, Prof Hallie Buckley



Nitah Rungroungkul

Effects of comorbidities on vasculature, astrogliosis and neurogenesis after stroke.
Supervisor: Dr Andrew Clarkson

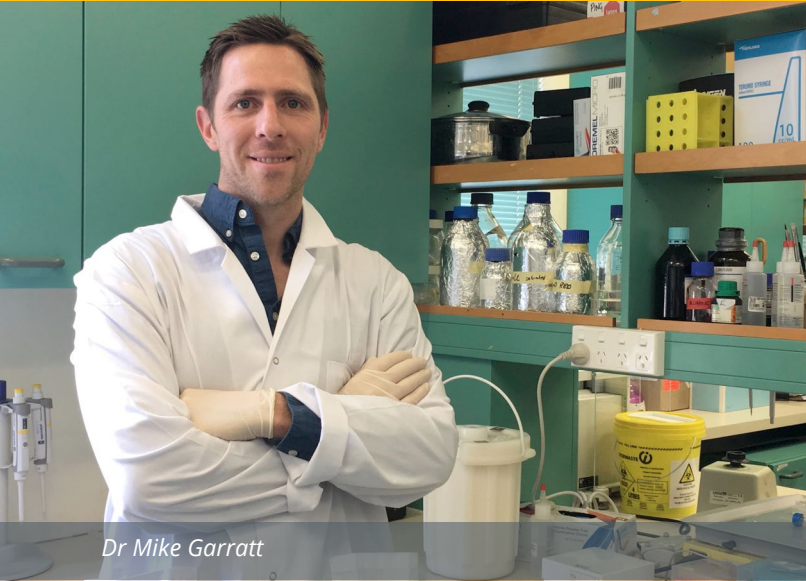


Lucy Wales-Earl

Changes in CaMKII expression after treatment with sAPP α .
Supervisor: A/P Joanna Williams

Staff Profile - Dr Mike Garratt

Researcher, lecturer and outdoors man



Dr Mike Garratt

[Dr Mike Garratt](#) joined the department in September 2018 as a Lecturer in Anatomy. He has been busy setting-up his own research in the department, focusing on how reproduction influences life-history, health and ageing.

Mike has always had an interest in wildlife and animal behaviour. As a child he dreamed of studying animal behaviour in the wild. However, over time he became more interested in the physiology that influences how animals function across life, particularly in relation to reproductive behaviour. These things are easier to study and manipulate in a laboratory environment.

His research takes a broad approach to reproduction, focusing on areas such as the effects of sex hormones, consequences of mating, and responses to pheromone

perception, all of which are important for successful reproduction and production of offspring in animals.

There are some major scientific questions which Mike wants to address with his research. *"We still don't know why males and females age at different rates. I think these differences are linked to sex-specific hormone production and ultimately the way each sex reproduces, so making some tangible progress in this area would be a real achievement,"* he says.

Prior to joining this department, Mike was part of a large research group at the University of Michigan (USA) studying the biology of ageing and lifespan extension in mice. That team recently completed several mouse ageing experiments, which took 3 – 4 years to complete.

"Conducting experiments on this scale has been a highlight for me, although the work is not yet published so I am hesitant to get too excited about the results until they have been through the peer review process!"

He hopes to apply his work to humans in some way, either in the context of improving health during ageing or understanding the health consequences of childbearing in women.

When he saw the Lectureship position at Otago advertised, he was excited because he was aware of the quality of research within the Anatomy Department, and he knew the department would have researchers that would complement his own research. *"I also really like the diversity of the research groups in the department, with interests in evolutionary and basic science."*

This year Mike has taught in the ANAT 241 (Human Biology: Cells to Systems) and ANAT 332 (Cell Biology) papers which he says have been a great experience. *"I have been lucky to work alongside Dr Rebecca Bird and Dr Joe Yip who have both provided some excellent guidance as I develop my own teaching skills."*

Mike grew up in a small village in the Forest of Dean in England, an area of natural woodland beauty (Harry Potter fans will know the Forest of Dean as scenes for The Deathly Hallows were based there.)

When he was looking to move on from his position at Michigan, he was also seeking a place which would provide a good quality of life for him and his family, with good access to the outdoors. He has a keen love of tramping, rock-climbing and running.

"Dunedin has been the easiest place I have ever moved to," he says. *"It's amazing how many friends we have made in a short period of time. And after living in America it feels so much more like England."*

"Dunedin is an amazing location. I love that I can get outside and do something fun in a beautiful setting straight after work."

Visit Mike's [webpage](#) to learn more about his research.

Giving thanks to our donors



The Department held its annual Thanksgiving Service in Dunedin on Wednesday 11 September. The service was attended by about 150 family and friends who supported their loved one's decision to donate their body to the department. Many staff and students also attended the service, including the Vice-Chancellor and Deputy Vice-Chancellors of the University.

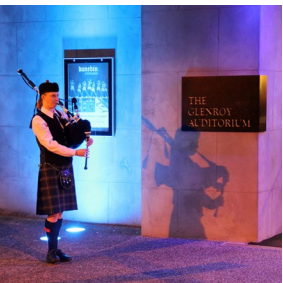
Orthopaedic Specialist and Clinical Senior Lecturer Mr Simon McMahon gave the key address. He spoke of his own experiences as a young medical student learning anatomy, and the important role the bequest programme plays in the ongoing training of our surgeons and specialists.

Our students played key roles throughout the service providing music and singing, and reading their own heart-felt words of thanks to the families. The lighting of candles in memory of our donors was especially moving for everyone present.

This annual service is an extremely important event for the department as it is our only opportunity to get together with the families to thank them for supporting their loved one's wish to donate their body. We hope the service provides them with a sense of closure for their loss, and an assurance that their loved ones bequest is truly valued and respected.

A similar service will be held in Christchurch next year. Anyone wishing to receive more information can contact the department at anatomy@otago.ac.nz

Photos: Chris Smith



Aspire to be ...

Around 24 enthusiastic Year 7 and 8 pupils from local Otago schools visited the W.D. Trotter Anatomy Museum as part of Aspire, a campus-based mentor programme run jointly by UniCrew, the Otago Community Trust, local partner schools and Otakou Marae.



The programme aims to inspire intermediate school children to broaden their horizons, exposing them to different career opportunities.



A group of third year Medical students hosted the visit to the museum. The children learnt how the body works, how the brain functions, and even got to listen to their own hearts.

Postgraduate Student Profile

1. Jacob Bond - discovering something new

The opportunity to research an area of anatomy in detail, and to potentially discover something new, was so appealing to Jacob Bond that he decided to change the focus of his study from an undergraduate degree to a Postgraduate Honours degree in Anatomy. And he is loving the new challenge.

Jacob hadn't previously considered undertaking research as part of his study at Otago, until he attended Associate Professor Ming Zhang's first head and neck lecture in the ANAT 331 (Functional Anatomy) paper.

"That was when I discovered that clinical anatomy was something I got really excited about, and I was fascinated to learn more about the clinical and surgical applications of the research being done in Ming's lab," he says.

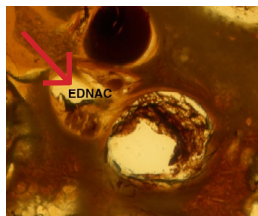
He approached Ming Zhang towards the end of last year to talk about undertaking a research project.

This year, Jacob has been busy running experiments in the lab, researching literature and attending small group lectures and tutorials as part of the department's Honours programme. His research project focuses on the extradural neural axis compartment (EDNAC) in the jugular foramen.

The EDNAC is an extradural space in the outermost part of the spinal canal containing fat, small blood vessels and nerves. It is an area that has not received much research attention, particularly in relation to the jugular foramen, which is found at the base of the skull. Jacob says the foramen is an important anatomical structure because it is a conduit where major blood vessels and several cranial nerves pass through.



The image above shows the jugular foramen (indicated in green) at the base of the skull.



This plastinated slice shows the jugular foramen (the large 'hole') and the EDNAC (indicated by the arrow).

"I am analysing the configuration and volume of the EDNAC space within the foramen, as well as classifying new subdividing zones using E12 plastination slices."

"The outcomes of this research will be useful for clinicians planning operations in this region, and will clarify our



Jacob Bond is studying a compartment in the jugular foramen, an area located at the base of the skull.

understanding of tumour growth patterns in the jugular foramen," he says.

It's not just the research he is enjoying this year. He is also relishing the structure of the Honours programme, and the opportunity to organise his own days.

"The best thing about life as a postgrad student is that you're given the freedom, resources and supervision to extensively study a topic that you find interesting and are passionate about researching," he says.

"Every day varies between office work and lab work, and can involve reviewing literature for a particular topic, analysing plastinated slices of the skull base, examining dry skulls in the Anatomy Museum, taking confocal or dissecting-microscope images of key anatomical regions, or dissecting cadaveric skull bases."

He has applied to study Medicine at Otago next year, and, if accepted into the programme, he says he will also seriously consider taking a year out of his medical studies to complete further research on some of the anatomical regions within the EDNAC which he has discovered in his research.

"This year has taught me to be more self-motivated. It has helped me learn how to work independently and has fostered a more efficient and concise style to my writing."

"I have thoroughly enjoyed the opportunity to be hands-on in a real research lab and definitely want to build on the research I have done in my Honours project. There is so much still to learn about Anatomy."

Postgraduate Student Profile

2. Toni Hoeta - from small town girl to Scientist

Why did you choose to do a PGDipSci in Anatomy?

Most postgrad students choose what they want to study based on their interests from their undergrad degree. I chose mine because of my supervisor, Assoc Prof Christine Jasoni, and her ANAT 334 (Developmental Biology) labs. I was already interested in the brain, and she provided the tools to spark that interest and keep it lit.

Was research always in your focus as a career option?

I came to Dunedin with a one-track mind – to get into Medicine, and be a Paediatric Doctor. Although this is still a beautiful goal, I've realised how amazing being a little optimistic can be. Research was never my focus, but I fell in love with it.

How did you decide what area of research to work in?

I didn't know where to start. I did know one thing though. A certain lecturer spiked my interest. She was confident, passionate and loved her work, and I found myself eager to go to her ANAT 334 labs.

What is your research project about?

This year I am studying an area of the brain called the Hypothalamus, known to maintain and regulate homeostasis within the body. In the centre of this structure is the third ventricle, part of the ventricular system of the brain, surrounded by ependymal cells and tanycytes. Tanycytes are known to regulate entry of circulating molecules into the brain and ventricular system but they are also proposed neural stem cells. Tanycytes and their potential neurogenic properties are the focus of my project.

What's the best thing about being a postgrad?

Postgraduate life is bliss. It is the year when you truly find yourself. Especially if prior to this you don't think you know who you are, what you're going to do or who you're going to be. If there's one thing postgrad life has taught me, it's that you don't need to know and you're in the best place to find out. Do a year of Reproductive Biology with Greg Anderson, Cells with Stephen Bunn or Neuroendocrinology with Christine Jasoni - passionate, hardworking scientists curious about the world, and you're one of them and you don't even know it yet.

What are the biggest differences from being an undergrad?

1. Time Management. You are your own timetable!!! Yeah you'll have a little sprinkle of third year with some seminars getting you out of bed at 9am. BUT, they're scattered throughout the week, and there's probably only going to be 3 classes a week, MAX! So the rest of the time you need to get up, go to the office by 9am and make a routine out of it.
2. THE OFFICE!!!! I cannot reiterate how much I love the beautiful nerds in my office. Individually amazing people who are on the same train as you, dying with you through tough assessments, making memes, giving you a tarot reading, the list goes on!!! My friend Matt is going to win a Nobel Prize one day. Shout me out when you do bro, cause I called it!



What do you do during a typical day in the Department?

I'll take you through, Hello MTV welcome to my Dept:

- Firstly, breakfast with the crew, bit of yarns, go get a coffee from the machine in the staff room and check emails (this is when I feel hella grown up). "Morning Yugo!!" I see my friend on his way into the lab.
- Head into my lab and set up my experiment/s for the day. Today I'm doing Immunohistochemistry and yarning to more lovely people around the lab, "Hey Uri, I like your hat!"
- Lunch! I love Friday's because the department will give you food while you listen to friends and colleagues present their research. The support is unreal!!! I don't even know this gal that talked today, but man I was proud of her and her work.
- Maybe a meeting with my supervisor or a groovy class with a subject like – "MDMA has amphetamine effects at high doses," or something else buzzy and super interesting. These seminars, along with others the department will email you about, also guide you towards what you may want to study the next year, or the next 10 years.
- Wee bit of study, keeping up with reading and writing.

Sometimes you'll be at a Science conference somewhere like Queenstown or making school visits with a giant inflatable brain, teaching children, and you'll stop and think ... Wow ... I'm a Scientist and just smile.

What does the future hold for you?

I still want to be a children's doctor, but I possibly want to do more research, once that curiosity sparks up its hard to put it out. BUT, I have realised how young I am and how much I can do. My supervisor has taught me so much about myself, I don't think she realises how much she has truly helped me. I can do anything.

Coming to the end of my first postgraduate year I am confident, I have grown in so many ways and I am excited for whatever happens next. Who would have thought that a small town girl from Raetihi would be a Scientist. Not me!?!?!?! Thank you Otago!

NEWS FROM THE RESEARCH GROUPS

Biological Anthropology...

Preserving archaeological human remains



[Associate Professor Siân Halcrow](#) has been invited to co-organise a workshop at the Silpakorn University in Bangkok for biological anthropology students and emerging researchers. The workshop, to be held in 2020, will focus on the preservation and curation of human remains from archaeological sites in Southeast Asia. There has been an increasing level of archaeological excavation in Thailand, much of which has been carried out by New Zealand teams, but little to no provisions for the ongoing care of this cultural heritage has been made. The training of students and academics in curation practices with human skeletal remains is therefore vital for maintaining the integrity of the heritage for future work.

The workshop will also contribute to strengthening cultural relationships between Thailand and New Zealand by exploring cultural heritage and ethics of practice. Talks will also be held on New Zealand and Thai approaches to cultural heritage management and the ethics of dealing with human remains from the past.

Siân has received a travel grant from the Leadership Network of the Asia New Zealand Foundation to travel to Bangkok. The workshop is partly sponsored by the Asia New Zealand Foundation.

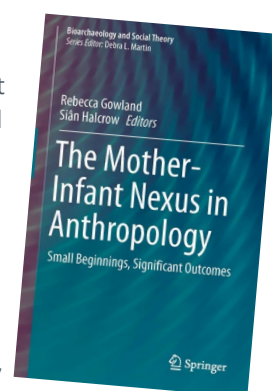
Mother-infant interaction the focus of book

Associate Professor Siân Halcrow is a co-editor of a book that looks at the relationships of mothers and infants across different societies and cultures. *The Mother-Infant Nexus in Anthropology* brings together cultural and biological anthropologists and archaeologists to examine the infant-maternal interface from past societies, show-casing innovative theoretical and methodological approaches towards understanding societal constructions of foetal, infant and maternal bodies.

Siân says the book is particularly topical because there is a burgeoning awareness within anthropology of the centrality of mother-infant interactions for understanding the evolution of the human species, infant and maternal health and care strategies, epigenetic change, and biological and social development.

Over the past 20 years there has been increased research in the anthropology of childhood, however infancy, the pregnant body and motherhood continues to be marginalised. *"This book emphasises the interconnectivity of the mother-infant relationship and explores the broader significance of this connection for overall population well-being."*

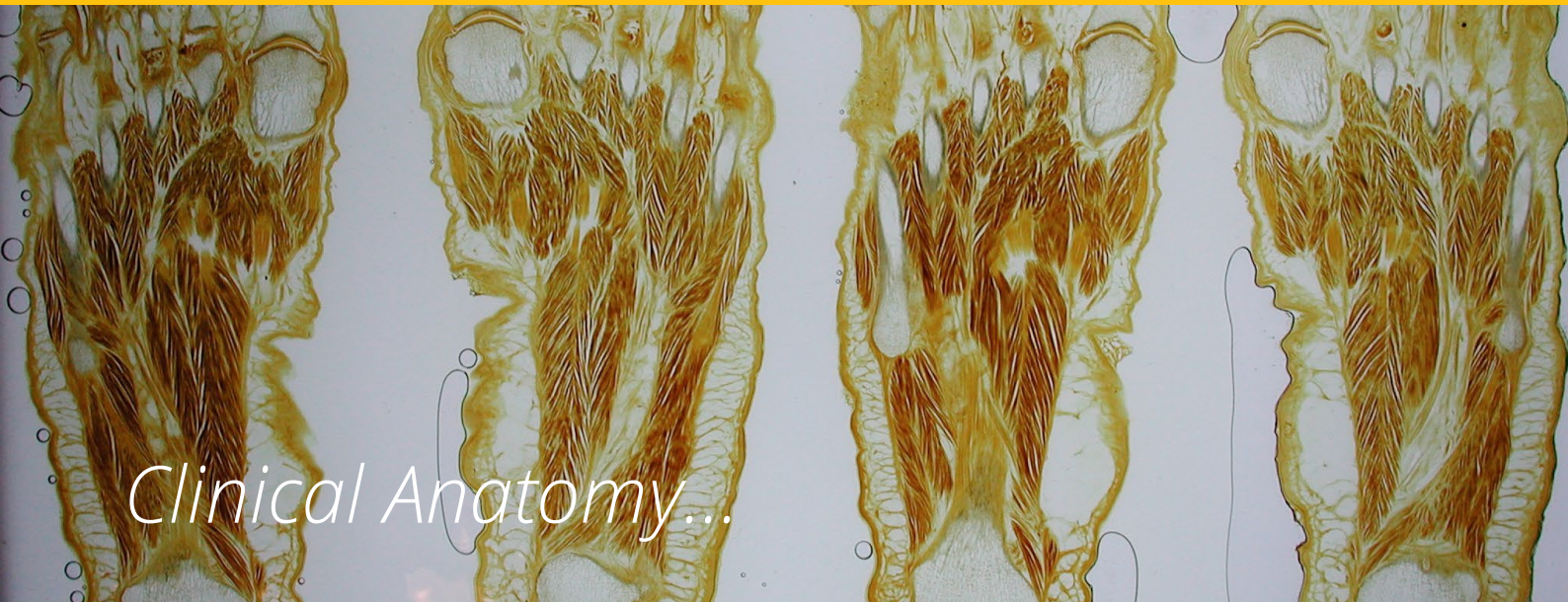
This book is part of a series of books entitled *Bioarchaeology and Social Theory*, and is printed by Springer.



University of Otago grant success

Congratulations to the following researcher who has received a 2020 UoRG funding grant from the University of Otago:
Assoc Prof Siân Halcrow - \$10,000 toward her research project *Unwrapping the life story of the Egyptian Mummy, Tash pen Khonsu: New technologies to inform past life ways*. (Ruth Warren and Louisa Baillie are Als on this grant)

NEWS FROM THE RESEARCH GROUPS



Inaugural Professorial Lecture



From left to right: Malkanthi, Asela, George and Rohini

[Professor George Dias](#) gave his Inaugural Professorial Lecture at the University of Otago on Tuesday 10 September. His lecture was entitled "Anatomical adventures with making faces, bone building, woolly foods, and corroding plates."

Those who attended were treated to an entertaining journey through George's life. From his early years in London (sadly he could not find a photo of himself sporting a 1970s afro, however an image of a young bearded George did delight the crowd), to his career as a consultant maxillofacial surgeon in the Sri Lankan air force, and his transition to an academic research career in Anatomy.

George was supported on the night by his wife Rohini, son Asela, and sister Malkanthi who travelled down from Wellington for the special occasion.

Gamification - the new game in town

[Mr Vivek Perumal](#) is developing a novel approach to anatomy education - called Gamification. He has received two grants to support the development of the on-line games which will aid student learning in 2nd and 3rd year Medicine - \$6,500 from CALT and \$10,000 from an Otago Medical School medical education grant.

Vivek says there are currently no educational games that meet the standards of the undergraduate medical curriculum. *"The major challenge in making medical education games is translating anatomy concepts to the game developers. They find it crazy hard to understand the anatomy of the brain, which our students also find difficult, so I had to make a prototype animation of the game scenes and challenges for the developers, to give them a basic outline of the game concept."*

He has now completed two games, one on the brain and the other on the upper digestive tract. They are currently available for the medical students to use, and feedback from them has been very positive.

The art of anatomy

Art classes held in the W.D. Trotter Anatomy Museum continue to be popular. Around twenty people attended the latest series of classes with artists keen to sketch the models, bones and specimens that are part of the museum collection. They were also given a guided tour of the museum by Dr Louisa Baillie.

We hope these classes will become regular Autumn and Spring fixtures in the department's outreach calendar.

NEWS FROM THE RESEARCH GROUPS

Neuroscience...

Neurological grant will aid brain injury research



[Associate Professor Dorothy Oorschot](#) has received \$258,686 in funding for two years from the Neurological Foundation of New Zealand to investigate whether specific treatments rescue the brain injury of extreme prematurity. She and her co-investigators will ascertain if the treatments prevent myelin loss and the loss of ADHD- and hearing-related nerve cells in the midbrain, and if these treatments prevent memory deficits, hearing deficits, and ADHD-like hyperactivity. Dr Steve Seo (right), a Postdoctoral Fellow in Associate Professor Oorschot's laboratory, is a co-investigator.



The project will use an innovative, clinically relevant model developed at the University of Otago by Associate Professor Oorschot's research team and published in the prestigious journal *The Journal of Neuroscience*. A positive outcome will drive clinical trials to develop effective treatment for the brain damage and behavioural deficits of extreme prematurity.

Manipulating rewards to treat brain disorders

[Professor John Reynolds](#) has received close to \$1.2M in funding from the Health Research Council for a three year project focusing on manipulating rewards to treat maladaptive brain disorders. Tinnitus, chronic pain, depression, obesity and addiction are common neurological and neuropsychiatric conditions that impose significant negative impact on individuals and society but lack effective treatments.

Certain brain networks can be modulated in conditions such as Parkinson's disease using deep brain stimulation. John's research group will set out to develop a novel deep brain stimulation approach to reverse the abnormalities in the reward network of the brain, focusing on tinnitus.



University of Otago grant success

Congratulations to the following researchers who have received 2020 UoRG funding grants from the University of Otago:

Dr Gina Forster - \$71,279 for her research project *Development of an Optogenetic Tool for Specific Manipulation of Neurotransmitter Reuptake*.

Dr Laura Gummy - \$56,417 for her research project *Improving nerve regeneration through microtubule acetylation by α TaT1*.

Dr Sharon Ladyman - \$44,416 for her research project *Role of pregnancy-induced changes in the small intestine in mediating long-term weight retention following pregnancy*.

NEWS FROM THE RESEARCH GROUPS



Reproduction, Genomics and Development ...

Gene drives: a solution for pest control

Masters student Anna Clark recently spoke at TEDxYouth@Christchurch: Tūrangawaewae - A Place of Belonging . She spoke passionately about gene drives, a species-specific tool that is humane and efficient in the way it can control pest populations. Gene drives have the ability to change the DNA of a species so that each individual off-spring passes a specific gene on to the next generation.

Anna's postgraduate research focuses on finding candidate genes for mammalian gene drive pest control. She hopes her research will contribute to finding a long-term solution to aid conservation here in New Zealand and overseas.

Click [here](#) to watch Anna's talk on YouTube.



Conservation paper named Best Paper



PhD candidate Natalie Forsdick was awarded the Society for Conservation Biology Oceania Best Student Paper award at the 2019 International Congress for Conservation Biology. The paper, co-written with PhD student Stephanie Galla (University of Canterbury) and Dr Michael Knapp details how resource-limited conservation projects can make use of existing genomic resources of other closely-related species to identify genome-wide markers.

Visit the [genes website](#) to learn more about this paper.

University of Otago grant success

Congratulations to the following researchers who have received 2020 UoRG funding grants from the University of Otago:

Dr Mike Garratt - \$35,846 toward his research project *Neuroendocrine reprogramming of life-history in response to mating*.

Prof Neil Gemmell - \$60,000 for his research project *Investigating the genetic orchestration of sex change cell by cell*.

Dr Jane Girling and Dr Rebecca Bird - \$15,944 for her research project *The Learning Repro Study: Understanding of reproduction and reproductive health in undergraduate university students*.

Assoc Prof Christine Jasoni - \$52,867 for her research project *Love's Labour's Lost: Is aberrant oxytocin signaling the missing link between maternal obesity and off-spring autism risk?*

Dr Michael Knapp - \$18,565 toward his research project *Beyond biodiversity: Can environmental DNA cut it as a population genetics tool*.

Remembering Professor Lance Nash

Many staff and alumni will remember Professor Lance Nash from his days as a PhD student in the Department of Anatomy. Sadly, Lance passed away on 14th September 2016 at the young age of 55.

An obituary, written by Associate Professor Ming Zhang, Professor Gareth Jones and Professor Dave Grattan, was published in the December 2018 edition of *The Journal of Plastination*. The following snippets have been taken from this publication:

"Lance devoted his life to clinical anatomy and plastination."

"His PhD work ... resulted in high impact publications and was included in the 40th edition of Gray's Anatomy."

"He was a genuinely selfless person, who would offer support and assistance to friends and colleagues in whatever way he could."

Visit the [Journal of Plastination](http://www.journalofplastination.com) website to read the full obituary.



Image: The Journal of Plastination Vol 30 (2); December 2018

Stepping up for a good cause



Sunday 13 Oct 2019

Stadium Climb Dunedin

On Sunday 13 October members of Team Anatomically Correct will climb, step, crawl and pant their way up and down the steps of Forsyth Barr Stadium to help raise money for Leukaemia and Blood Cancer New Zealand. Each team member will step on over 5,200 steps which equates to approximately three laps of the Stadium!

The team has been busy fundraising through bake sales and donations. To date the team has raised over \$1500 ... go Team!

If you would like to contribute to the team's fund you can do so through the team's [fundraising website](http://www.stadiumclimb.co.nz).



It's a bit of a puzzle really



Usually the long winter days at work can be a bit of a drag. The days are cold, morale can be low, and you'd rather be at home sitting by the fire. This winter however, the department has been the benefactor of a range of jigsaw puzzles donated for staff to enjoy.

A core group of puzzlers have been diligently working their way through the collection of puzzles. At the start they were so proficient that some puzzles only lasted a day or two before being completed. The example top left took only 24 hours to complete!

The latest puzzle is proving to be the most challenging. The team has been working on this 2014 piece scene of Anne of Green Gables for over a month now. But progress is slowly being made, and the picture of Anne running through the forest is emerging. Congratulations to the team on their dogged determination not to give up. Only 1037 pieces left to go!



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www.otago.ac.nz/anatomy