



POSTGRADUATE



University of Otago

Graduate Research in Psychology

Student Profiles

Postgraduate research within Psychology

Psychology at Otago is a leading research department both nationally and internationally and we are proud of our talented students who work tirelessly to achieve the impressive results of their various research topics. They are mentored and encouraged throughout this process by their equally hard-working academic supervisors.

Strong research ethos

In the QS World University Rankings by Subject, the Department of Psychology at Otago has been ranked in the top 50 internationally three years in a row.

Furthermore, in the latest Performance-Based Research Fund (PBRF) rating exercise, the Department of Psychology received the country's highest score for any nominated academic unit in any discipline,

Being rated the top department at the University of Otago in the same exercise confirms the research ethos employed by academic staff, research staff, and postgraduate students. We are proud of the national and international success our researchers receive.

Research facilities

Research in neuroscience, psychopharmacology, psychophysiology, and behavioural processes is supported by specialised laboratories, and neurophysiological apparatus.

Clinical, developmental, and social psychology laboratories include interview rooms, computer recording facilities for coding behaviour, and audio-visual recording equipment. Research in cognition and perception includes equipment for recording evoked potentials, for measuring eye movements, for investigating hemisphere asymmetry, and a flight simulator.

The technical and administrative staff of the Department provide enthusiastic and skilled assistance over a wide range of areas of research.

Interdisciplinary research with other disciplines

Interdisciplinary approaches are encouraged and there are well-established links with other university departments in the Division of Sciences, the Division of Humanities, and in the Division of Health Sciences.

David Barton

PhD Candidate



David Barton is completing his PhD at the University of Otago, under the supervision of Professor Jamin Halberstadt in the Social Cognition lab. Originally from South Africa, he immigrated to New Zealand in February 1998 with his wife Ruan.

“We touched down in Auckland with just a few suitcases, having sold or given away most of our earthly possessions, landing in New Zealand with just hopes and dreams of a better life. How our lives have changed since then! Now we have three wonderful daughters to add to our number, two born in Auckland and one in Dunedin.”

David considers what he is doing now as his second profession as he has made a complete 180° turn to what he did in South Africa and Auckland. Starting his working career as a technician working in telecommunications, over the ensuing years he has also been a trainee Pastor, a small business owner, Probation Officer and even worked in the mental health sector as a Counsellor. He has always maintained an active role as a Christian, father, husband, athlete, musician and of course student.

“I started my Master’s degree in Psychology at Otago in 2012 and upgraded to a PhD mid-2013. After completing my Bachelor’s Degree in Psychology by distance learning through the Open Polytech, where all my studies were undertaken online, being a postgraduate student has been an extra-interesting experience, as it’s my first time attending a university campus.”

David’s postgraduate research was inspired by what’s commonly known as the bouba/kiki effect.

“This effect demonstrates how people non-arbitrarily name rounded shapes with words like ‘bouba’ and spiky angular shapes with words like ‘kiki’. The effect can be located within the area of sound symbolism which shows how information taken in by one sense is experienced in a similar manner in another sense. For example how the round sound of ‘bouba’ is experienced visually as a rounded shape. “

From this, David wondered if sound symbolism influenced the way people were named. Maybe a round sounding name like ‘Bob’ would be a better name for a person with a rounded face compared to the name ‘Rick’.

“According to bouba/kiki studies it would be. This is because the /o/ vowel in ‘Bob’ causes the mouth to round which consequently

also produces sound with a low tone. Research has found low tones to be linked to large rounder objects. Comparatively, ‘Rick’ causes the mouth to spread due to the /i/ vowel, and produces a higher tone, linked more to thinner, smaller objects. Round faces usually appear larger than more angular faces, so it made sense that ‘Bob’ would make a better match for a round faced person.”

To test this hypothesis David’s lab group ran several studies and found that participants overwhelmingly named rounded faces with names like ‘Bob’ and angular faces with names like ‘Rick’. This was evidence of sound symbolism in action.

However, people did not always follow this naming convention. In several cases they gave a person a name which did not match their face.

“Why did this happen? It turns out that your first impressions of the person can influence what name you give them. If your first impressions are positive then you will most likely give them a matching name, but if they are negative you will most likely give them a non-matching name.”

In further studies the lab group manipulated liking and attractiveness and found the same effect; when first impressions are positive you name a person more congruently, but when they are negative you name the person less congruently.

“To test if the effect had any real world implications we conducted a study which involved 158 political candidates who ran for the United States senate between 2000 and 2008. We found photographs of each candidate online and took subjective ratings for the shape of their face and name. Using these ratings we were able to calculate a matching score for each candidate. This matching score was an indication of how well their name matched their face. We then reduced our sample to 53 candidates which included only the best and worst matched candidates. The naming effect clearly emerged from this sample. The best matched candidates significantly received more votes than the worst named candidates. Candidates with names which matched their faces ended up being more successful.”

“Sometimes it is interesting and surprising what you find doing research. For me, it has been the most enjoyable and exhilarating aspect of being a PhD student – and it’s probably this aspect that will stay with me when I am finished.”

Kate Brookie

PhD Candidate



Kate Brookie is completing a Postgraduate Diploma of Clinical Psychology and a PhD under the supervision of Dr Tamlin Conner in the Daily Experiences Lab. As a clinical psychology student her training has predominantly focussed on the negative effects of ill-health and the factors that contribute to mental disorders such as depression and anxiety. However, health is not merely the absence of illness, but the presence of wellbeing. Kate's PhD research has allowed her to explore just that – the lifestyle factors that lead to psychological wellbeing.

“Specifically, I research the link between what we eat and it's potential to influence how we feel. Much like the way fruit and vegetables protect our bodies from physical ailment, their consumption is becoming increasingly linked to indicators of positive well-being, including greater happiness and life satisfaction, optimism, vigour, and improved self-esteem and self-efficacy. Most importantly, these associations remain significant after controlling for extensive factors – suggesting that something about these foods is directly influencing our emotional wellbeing.”

“Our lab has found that the positive effects of fruit and vegetables go beyond simply being in a good mood. We carry out intensive studies which follow young adults as they navigate their daily lives and we have found some interesting patterns. Days characterised by high fruit and vegetable consumption are not only associated with greater happiness, but are also linked to a greater sense of what we call ‘eudaimonia’ – a type of wellbeing which taps into curiosity, exploration and engagement, and experiencing life as ultimately meaningful. The mechanism of action here remains unknown although it's possible that the vitamins, minerals, and antioxidants abundant in these foods may directly influence the neurochemistry of mood in the brain.”

The majority of research is correlational which cannot establish cause and effect. By conducting a well-designed randomised control trial in 2015, the Daily Experiences lab will be one of the first to investigate whether the relationship between fruit and vegetable consumption and various aspects of psychological wellbeing is causal. They aim to explore these relationships using ecological momentary assessment and intervention (EMA and EMI) methods which utilise mobile phone technology to assess and promote fruit and vegetable consumption in naturalistic environments over time.

“Ultimately, I love the idea of helping people to help themselves – and simple dietary change offers a promising route of self-improvement. As of today, we are one of the most overfed and undernourished cohorts in history and the way we view food has gone awry. More than ever, what we eat is of absolute importance to how we feel both physically and mentally. I am hoping that my research, and research overall, will provide confirmation of a much needed policy change surrounding the health and nutrition of future generations.”

Working with a young adult population (18-25), is something Kate sees as very important.

“This period of time in an individual's life can be seen as reasonably tumultuous. In a matter of weeks we go from having to ask permission to go to the bathroom, to making life changing decisions about what to dedicate our time to at university. As a young adult my research is immediately relatable to me and most of those around me. The potential to uncover useful and practical ways to help improve the daily experiences of emerging adults is extremely rewarding. I feel privileged to dedicate the time to researching something I love.”

“The potential to uncover useful and practical ways to help improve the daily experiences of emerging adults is extremely rewarding. I feel privileged to dedicate the time to researching something I love.”

Kate Brookie

Anna Campbell

PhD Candidate



Anna Campbell's interest in older adults began during her undergraduate years, while working with Professor Ted Ruffman. She loved the experience of research; both conducting experiments and discovering something new – even if it was only a small piece of a large puzzle. Anna found that she really enjoyed the experience of conducting research with older adults.

“The research itself was fascinating, and I enjoyed the process of finding a question to answer and figuring out the tasks to use to answer it. But what I really loved was meeting the older participants and hearing their stories.”

Anna decided to carry on to PhD level, and at this stage Dr Janice Murray joined the team.

“Ted and Janice had already done a lot of research into older adults' emotion processing and it was great to be able to use their knowledge of this area and combine it with something new by investigating the influence of hormones on emotions.”

For her PhD, Anna investigated whether a hormone, called oxytocin, might influence older adults' ability to process emotions. The results showed that oxytocin could improve older males' ability to recognise emotions in other people's faces, but did not change the way older adults' experienced emotions themselves.

“This finding was interesting because oxytocin has been labelled the love hormone by the press. It isn't likely that oxytocin will really make someone love you, but it does seem to influence behaviour in social situations more than situations where we

are focused on ourselves. The exact role of oxytocin in social behaviour is still being determined by a lot of new research.”

Along with her research, Anna has completed the Clinical Psychology Programme here at Otago. During her internship, she spent six months in the Older People's Health department at the hospital. This gave Anna a different experience of interacting with older adults, and reinforced her love of working directly with people. She learned that working with individuals could be just as rewarding as answering questions through research that might influence many people.

“I really enjoyed being able to see the direct results of doing therapy with a person to make changes in their life. I could see the benefits for that person and that was exciting.”

Although Anna can still see the importance and necessity of using research to answer specific questions and contribute pieces to the larger puzzles, she thinks her future research career might head in a slightly different direction. Anna hopes to combine her research and clinical endeavours, with a goal of being involved in research into new therapies that could help people with mental health difficulties.

“I'd love to be able to conduct research that involved both working with individuals to benefit them directly, and working to answer the question of why these individuals are benefitting from that particular therapy, so that others can also benefit from it in the future.”

“I really enjoyed being able to see the direct results of doing therapy with a person to make changes in their life. I could see the benefits for that person and that was exciting.”

Anna Campbell

Andrea Chin

PhD Candidate



As a young child, Andrea Chin was always fascinated by humans – what made humans tick, what drove people to do the things they do, and how consequences can shape further behaviour.

“In fact, that very last statement is a core principle of *operant conditioning*. When I learnt about operant conditioning and what it was in first-year psychology, I knew immediately that I wanted to be a psychologist. Up until then, all I knew was that I wanted to help people in some way. Becoming a doctor was a sensible option, then I discovered that I could combine psychology and helping people - and become a clinical psychologist!”

Andrea is working towards her PhD under the supervision of Dr Richard Linscott whilst concurrently completing a Postgraduate Diploma in Clinical Psychology.

“Studying towards a postgraduate diploma in clinical psychology is wonderful. Every individual has his or her own unique story and life circumstances.”

Andrea explains that clinical psychology involves a lot of detective work – thinking about how pieces of the puzzle fit together to explain the issues people may be experiencing, and to provide a guide on how best to help them move their life forward. And yes, there can be a lot of paperwork required at times, but it is a small price to pay to be able to work in such a challenging and exciting area, she concedes.

Coming to New Zealand from Singapore, where mental illness is quite often swept under the rug, she has found the contrast between the two countries astounding.

“Comparatively, New Zealand has a strong focus on mental illness - that got me thinking - how does culture influence the perception and prognosis of mental illness?”

“Furthermore, there is research suggesting that the personality style of an individual - whether they are more independent or interdependent - can either gel or clash with their external culture to affect their mental health outcomes. Andrea is keen to look more into this area also.

“For my PhD research, I aim to investigate whether a personality-culture clash results in poorer mental health outcomes. I also have a particular interest in the content of positive symptoms (e.g., delusions/hallucinations), which people with psychosis experience. As there are suggestions that people in collectivistic cultures experience more benign voices compared to those in individualistic cultures, I wonder how personality-culture clash may influence this phenomenon. Optimistically, I hope to be able to conduct some of this research in Singapore, looking at the predominantly collectivist culture there and comparing this with the predominantly individualistic culture of New Zealand.”

Apart from her studies, Andrea is also involved with the Department of Psychology in other ways – she is currently a 200-level demonstrator and also involved in the Otago Psychology Student Committee (OPSYC), an amazing group of students who organise social events in the department. They are also responsible for putting together the Department’s magazine, ‘think.’

“As part of the social committee, I help with organising social events for the Department such as the ever-popular quiz night and bowling night. Being involved in these extra-curricular activities gives me the opportunity to interact with a lot of different groups of people in the Department and has enabled me to form strong friendships with like-minded people. The Department of Psychology consists of supportive and amazing people and that makes it really easy to come in and work everyday!”

“Studying towards a postgraduate diploma in clinical psychology is wonderful. Every individual has his or her own unique story and life circumstances.”

Andrea Chin

Jayde Flett

PhD Candidate

When Jayde Flett tells new acquaintances that she studies Psychology, she can be asked a variation of the question “So, are you going to read my mind?” Her general response is “Yes... You are thinking, there is NO way she is reading my mind!”

“I then relish in telling them the same thing I am about to tell you. No, I cannot read your mind, but in psychology we seek to understand and explain how people think, act and feel using scientific principles, observation and interpretation. In my field of interest I am more intrigued by whether your mobile phone can be adapted to provide you with a psychological intervention or assist you to participate in your own healthcare rather than the ins and outs of the corners of your brain.”

While her studies have previously focussed on language, technology, social exclusion and positivity, Jayde’s professional sphere has extended to working with people with a number of health experiences ranging from chromosomal disorders to a case of stroke induced ‘locked-in syndrome’. She has come to appreciate that everyone deserves the opportunity to live what they deem a ‘normal life’, and often this ‘normal life’ is facilitated by technological advances.

“It is for this reason that I am interested in pursuing specialisation within the field of Mobile Health (mHealth). This refers to a growing field in which mobile devices are broadly utilised to provide improved patient care and to strengthen healthcare systems. During my PhD, I hope to better understand the potential uses and strategies of mHealth technology to reduce the effects of depression, stress, and anxiety especially in young-adult, marginalised, and indigenous populations. I also hope to have a better knowledge of how these tools can be utilised by policy-makers to enact a long-term mHealth strategy that benefits both New Zealand and wider populations.”

Jayde’s first research project supervised by *Assoc Prof David O’Hare* focussed quite literally on whether PowerPoint was making people stupid. They posited that because PowerPoint encourages linear thinking, the reduction of complex ideas to bullet points, and doesn’t allow for deviation from a preconceived presentation, perhaps people were unable to formulate their own complex thoughts in relation to something they have learnt using PowerPoint. Using a computer programme created at the *University of Memphis* called *Coh-Matrix* to analyse the complexity of participants’ written responses on a syntactical

level, they found that various complexity measures were reduced following a PowerPoint presentation. Whilst this experiment had its limitations, it sparked Jayde’s interest in the ways in which technology can be used to help or hinder us.

“My honours dissertation was supervised by the late *Dr Tamar Murachver*. We were interested in how social exclusion affected language use. Eventually we found that, like depression, social exclusion imparts a marked effect on language use and this effect can be picked up using basic linguistic analysis software. *Dr Murachver* invited me to apply for a Summer Studentship so that we could explore my research further. This time we incorporated a positive psychology aspect to the previous study to see whether a simple positivity exercise would nullify the effect of social exclusion found in individuals’ language use and wellbeing. It did! At the most basic level this study indicated the possible significance of technology in the detection and treatment of various conditions and also illustrated how simple interventions could have potential positive impacts on individuals.”

Following the completion of her psychology degree Jayde endeavoured to finish her anthropology degree while spending a semester working as a Senior Research Assistant in the Daily Experiences Laboratory for *Dr Tamlin Conner*. She then concluded her undergraduate experience with a semester abroad at *Charles University, Prague, Czech Republic*.

“On my return, I joined the Daily Experiences Lab in the capacity of PhD student under the joint supervision of *Dr Conner* and *Professor Harlene Hayne*. Our research focusses on the correlates of health and wellbeing and uses mobile technology to track and measure some of these aspects; meaning it was a logical starting point for a PhD that focusses on improving young adult wellness using mobile technology. Although it is early days, we have run several qualitative studies examining the benefits and barriers to mHealth uptake and are part-way through a trial of several publicly available mobile wellness apps. Provided the trials run smoothly, we are looking to work in conjunction with *Dr Kim Ma’ia’i* in *Student Health Services* to continue to provide up-to-date services and care to the student populace.

“Studying psychology at the University of Otago has afforded me so many great opportunities to work and mingle with great minds, I feel very privileged to have received this opportunity.”

Bridget Irvine

PhD Candidate



Bridget Irvine has always been interested in two very distinct career pathways: psychology and law. She completed her undergraduate studies at the University of Otago in 2010, graduating with a Bachelor of Science (Honours) in Psychology and a Bachelor of Laws. Her research experience through the Department of Psychology's Honours programme, however, convinced her to embark on a PhD.

“Working with *Dr Rachel Zajac* in the Department of Psychology has provided me with a unique perspective on how psychological science is integrated into legal processes. Unfortunately, these two fields do not always make the best bedfellows.”

Bridget's research focuses on the way in which child witnesses are cross-examined in the courtroom.

“Unfortunately, we know that children can have trouble maintaining consistency when the questions that lawyers pose are leading, complex, and challenging to their credibility. When faced with these types of questions, children are highly likely to change their testimony, irrespective of the truth.”

The focus of Bridget's research has been examining the efficacy of a court preparation intervention that gives children practice at answering the types of challenging questions they could face in the courtroom, albeit about a topic unrelated to their 'testimony'. To date, the Marsden-funded studies conducted in the laboratory have produced very encouraging findings.

In 2013, Bridget was given the opportunity to combine her two interests into one role—as the Research Co-ordinator of Innocence Project New Zealand (IPNZ). IPNZ offers pro bono

legal assistance to convicted individuals who maintain that they are factually innocent. Bridget co-ordinates the work conducted by a group of academics and students from the Department of Psychology and the Faculty of Law at the University of Otago, and from Victoria University of Wellington. IPNZ is a member of the Innocence Network, the international organisation that investigates wrongful convictions. Collectively, the Innocence Network has identified and helped to overturn 330 wrongful convictions.

“Unfortunately, many of the contributors to wrongful conviction — mistaken eyewitness identification, false confessions, bias in forensic decision-making — fall squarely into the territory of psychological scientists, but it is extraordinarily difficult to convince the courts to apply what we know now to old cases. Innocence Projects around the world have been crucial in making that happen.”

Bridget is quick to point out that her life in the Psychology Department isn't all work and no play. She is the founding member of the Otago Psychology Student Committee (OPSYC) and has been actively involved in running the social events held within the Department. Bridget states that a highlight of this role was the production of the magazine *'think'*.

“It was always such a risk for the Department to take a chance on a bunch of amateurs, but I am really glad they gave us the opportunity to create a magazine that really showcased our fantastic department.”

“Psychology has provided me with a unique perspective on how psychological science is integrated into legal processes. Unfortunately, these two fields do not always make the best bedfellows.”

Bridget Irvine

Marijn Kouwenhoven

PhD Candidate



“I have always been fascinated by the forensic sciences, especially the procedures and protocols involved in criminal investigations and *catching the bad guy*.”

In her third year of psychology Marijn took *PSYC325 Psychology in Legal Contexts* with Dr Rachel Zajac. She found the class was a perfect combination of her passion for psychology and her childhood interest in justice and the legal system.

“We learned about factors that influence how jurors make their decisions, why eyewitnesses are some of the least reliable sources of information, and how people can confess to crimes they did not commit. Of particular interest to her was the revelation that forensic investigators are nowhere near as perfect as she once thought! They make mistakes, and unfortunately this can - and has - resulted in many wrong convictions and miscarriages of justice.”

Marijn undertook a PhD in Psychology with the hope that she could aid forensic investigators in improving how they function, and reduce the likelihood of errors because every mistake can have severe consequences. Her research looks at factors that increase the risk of forensic investigators coming to the wrong conclusions, and what can be done to prevent this from happening in the future.

“Recent research has shown that many forensic investigators, including fingerprint analysts, DNA analysts, bloodstain pattern

analysts, and even handwriting analysts, are vulnerable to making biased judgments when they’re exposed to additional information about a case. For example, the knowledge that the suspect has confessed can make the fingerprint analyst more likely to conclude that a fingerprint found at the scene also belongs to the suspect, even if that is the wrong conclusion.”

Dr Rachel Zajac and Marijn are currently involved with a project funded by the National Institute of Justice (NIJ) in the United States where they work directly with forensic examiners to address the problem of knowledge of additional information and how it can influence the perception and interpretation of forensic evidence.

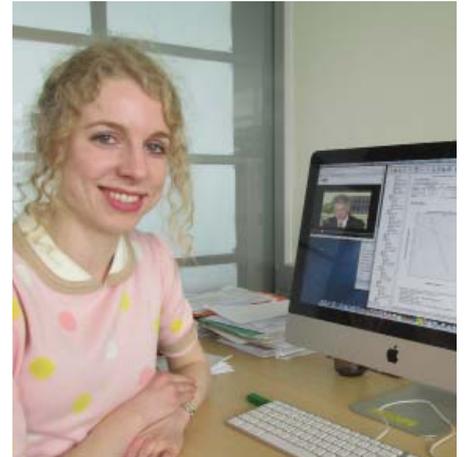
“Despite an increased awareness that forensic investigators are influenced by case information, hardly anyone is trying to develop procedures that remain reliable even when an investigator has been exposed to additional information. One easy suggestion is to simply not give investigators information that could potentially influence them, but due to the nature of forensic investigations, that is not a viable solution. The main goal of the NIJ project is to develop and test several strategies that control for exposure to additional information. I think that it is very important to do what we can to protect forensic examiners from external influences and to help them do their job properly.”

“I have always been fascinated by the forensic sciences, especially the procedures and protocols involved in criminal investigations and catching the bad guy.”

Marijn Kouwenhoven

Helen Owen

PhD Candidate



“As a teenager I was an Arts student at heart; I have always been passionate about writing and language but I didn’t expect to be analysing these aspects from a social cognitive perspective for a PhD.”

As an undergraduate at the University of Otago, Helen Owen took a mixture of psychology honours, French and linguistics papers. She also worked as a Youthline phone counsellor and trainer, where her psychology learning took a more practical, hands-on approach.

However, by her fourth year of study, she was focussed on her psychology honours’ degree, which she completed in 2011 with first class honours. As part of her dissertation under Professor Jamin Halberstadt’s supervision, she examined the negative impact of increased verbosity in older adults on their ability to detect and conceal lies in their speech.

“I wanted to further explore the relationship between language complexity and perceived honesty, but based on a holistic analysis of personality, rather than an analysis of the specific words used when someone is telling a lie versus a truth. So, I was pleased to continue researching with Jamin in the Social Cognition Lab and particularly excited to be awarded a University of Otago Doctoral Scholarship in 2012.”

As part of her PhD research, Helen ran several creative writing experiments in which participants were given specific instructions to simplify or enhance their language on a social or educational topic of their choice. Using the latest online software, they recruited several hundred native English-speaking participants to read a story and make judgements about the writer, such as likeability and honesty, and the readability of the statement.

“The results were quite staggering and contradicted the widely held misconception that complex, sophisticated language is more professional and enhances credibility. Instead, writers of simple statements were more likely perceived as honest because their writing is fluently processed.”

The most difficult part of this research was identifying the markers of coherence, cohesion and syntactic complexity that are responsible for fluent processing. These are all aspects of our language that we use subconsciously and are difficult to manipulate in the writing of others.

“I feel that by actively attending to and modifying their communication style, politicians, professional writers and bloggers can learn much about themselves and how to best engage with their audience. I enjoyed sharing my research and views about this as a guest lecturer in a paper in the English department.”

Working in the Social Cognition Lab has also given Helen opportunities to collaborate on other projects, including fluency and attractiveness of gender and racially ambiguous faces and the relationship between selfie-taking on narcissism.

“I would also recommend to future postgraduates the opportunity of being a lab demonstrator in the department; it’s rewarding, fun and confidence-building” Helen adds.

“Looking back on my PhD journey, it has definitely been one of self-discovery, perseverance, patience, team work, and development of analytical and creative skills that prepare you for the workforce.”

Helen’s research has been cited in numerous media outlets including newspaper articles, TV and radio interviews.

Blake Porter

PhD Candidate



Blake Porter chose a career path in science because he is deeply fascinated by how things work. His childhood was the classic story familiar to many scientists; he would take apart everything he could get his hands on to see how they worked and try to build his own versions, which, on more than one occasion, almost burned down the house, he now admits.

“My passion for finding out how things work led me to the brain, the ultimate black box of mystery. I had to know how it all worked.”

So, Blake went to Boston University and studied Neuroscience. While at BU he joined a Cognitive Neurobiology lab. There he discovered *in vivo* electrophysiology; a technique to eavesdrop on the activity and functionality of neurons in live behaving subjects.

“I had an exceptional undergraduate research experience with passionate post-doctoral researchers who nurtured my curiosity and encouraged me to do an honours research project. After graduating I continued working in the lab in collaboration with Dr Lara Rangel who has been a great inspiration to me. She challenged me to think deeply about the research questions I ask and to form detailed, multi-level hypotheses. I gained an invaluable cellular, local circuit, and network level understanding of the brain from working with her. But, as with Bilbo Baggins, I was ready for an adventure.”

Blake was not entirely sure of starting a PhD and was mainly looking for research jobs in New Zealand. He was elated to find Professor David Bilkey in the Department of Psychology at Otago was looking for a research technician for an *in vivo* electrophysiology project to uncover the neural mechanisms of self-control. Blake was aware of David’s outstanding work in systems neuroscience investigating learning and memory and spatial processing.

“After many emails, a Skype meeting, and some soul searching, ‘we’ decided I was prepared enough to pursue a PhD at the University of Otago. Generous support obtained through a grant to David from the Marsden Fund of New Zealand helped to make it finally happen. The research questions I was looking to uncover fit well into the scope of David’s learning, memory, and

spatial processing expertise as well as that of Dr Kristin Hillman’s (Blake’s co-supervisor) work in how the brain encodes the value of choice options. So, after getting a student visa I was off to Middle Earth.”

Blake’s work in Boston focused on how the hippocampus forms and organises episodic memories by associating experience elements with when and where they occur and how the executive, prefrontal regions of the brain utilise these memories to make context specific decisions. At Otago he’s looking to continue this work but with more abstract elements of experience that may give a better insight into self-control at the neural circuit and network level. For example, what happens in our brains when we decide to put in the energy to exercise rather than sit and watch TV?

“I am particularly interested in how the brain uses memories to better inform these cost-benefit self-control decisions. For example, you may remember the last time you exercised you had more energy the next day and could focus in school more. These positive memories could help motivate you to exercise again in the future. Or, to put it in Hobbit terms; how did Bard’s memories of Smaug’s destruction of Dale motivate him to risk his life to save Lake-town?”

In order to understand how the brain remembers the costs and benefits of experiences and then uses those memories to make decisions, Blake applies his *in vivo* electrophysiology know-how to record cellular and population level neural activity in the hippocampus and prefrontal cortex of rats as they perform effortful tasks.

“Currently I am focused on the cost-benefit memory aspect. I am investigating how energetically demanding experiences are represented and remembered by neural networks when different amounts of effort are expended to obtain a food reward. My rats run on a long track that can be tilted to different inclines to introduce varied amounts of effort. These memory experiments give us insight into how the brain represents and remembers the costs and benefits of different effortful experiences. We can then gain an understanding of how the brain uses these cost-benefit memories to predict the value of future choices and guide decision making.”

Ben Riordan

PhD Candidate



If you had told Ben Riordan a few years ago that he would be doing a PhD he would've laughed at you.

"I was a pretty ordinary undergraduate student. Although I did better than 'just scrape through', I didn't really apply myself during my undergraduate degree in Psychology (minoring in music). It wasn't until my fourth year that I started to seriously enjoy what I was doing and considered doing more research. The Drugs and Behaviour paper in particular was a game changer."

Ben found himself spending his spare time doing extra readings on anything to do with addiction. As fortune would have it, during his fourth year he was also living with 500 first-year students in a residential college where he worked as a residential assistant.

"While in the college I was able to observe how new students interacted with alcohol and recognised the pressing need for interventions to focus on early university life. I was particularly interested in periods of time when students would drink excessively and experience more harm, times like Orientation Week."

So while Ben was writing up his Master's thesis (in something completely unrelated) he was also discussing with Drs Tamlin Conner and Damian Scarf ways they could research some of the impacts that periods of excessive alcohol consumption may have on students and possible interventions to decrease drinking during these periods.

For their first study, they decided to look at first year students' Orientation Week alcohol use, to determine whether the heavy drinking students exhibited during that week would continue throughout the academic year.

"So we tracked 1st-year students living in residential colleges, measuring their drinking just after high school, and then asked them to report their drinking via text messages, first during Orientation Week and then throughout the academic year. We found that the pattern of alcohol use new students exhibited during Orientation Week continued into the academic year -

and this relationship held when we controlled for their drinking patterns before university."

With this knowledge they began to develop an intervention that focused on reducing Orientation Week drinking, in the hope that if they could reduce drinking during that time period, they could also decrease academic year drinking.

"Because students tend to be on the go during Orientation Week we decided to send intervention information to students' mobile phones. In short, the intervention involved sending text messages to students every night during Orientation Week at the times they were drinking."

Ben explains that text messages are a novel way of sending intervention material and allows for intervention in a 'real world setting' (eg, during a night out). While other methods rely on memory of the intervention material, in this case, the interventions are beamed to their phones when students need it the most!

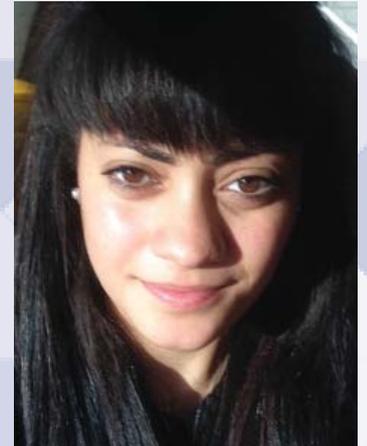
"The messages we send highlight the social impact of alcohol use (which new students seem to find particularly effective). These messages are pretty blunt "Don't be a dick, think about your mates when you drink", but they appear to work! We have trialled the intervention in three different groups of students at two different residential colleges and it seems that those who received the intervention consumed less alcohol during both Orientation Week and the academic year"

This is an exciting finding, Ben says, because the intervention is simple, cost effective, and to date, appears to be successful.

"Our hopes are that we can continue to develop the intervention and implement it on a larger scale in order to reduce new students' alcohol use and alcohol related harm. We are still in the early stages of this research but we are hugely excited with our preliminary findings. I am still not sure what I will end up doing after my PhD, but my hope is that I can find a way to continue this research."

Kimberly Tuitoga

Masters Candidate



Kimberly Tuitoga enjoyed her Psychology papers while completing her BSc in Neuroscience so much, that she took a Postgraduate Diploma in the subject a year after.

“I found the switch from the guided undergraduate environment to the more self-directed world of postgraduate study challenging at first. I feel privileged to be supervised by Dr Mele Taumoepeau. In those moments where I have doubted myself, she has helped me find the strength, hope and faith needed throughout my research.”

“What I have come to learn about ‘Psychology’ is that it is all around us and it touches on every aspect of our lives. The study of human mind and behaviour is fascinating – it’s absolutely amazing.”

Kimberly grew up witnessing the poor health conditions suffered by family members. The tremendous burdens of poor health have been immense - financially, physically, and psychologically - for all those involved.

“This, more than anything, has motivated my sincere empathy towards research into Pacific mental health” she explains.

In addition, her drive to pursue her thesis was also determined from what she had learned as a researcher during her summer studentship in 2014 (jointly with the Departments of Psychology and Biochemistry) on the *Investigation of gene x environment interaction for Pacific teenagers’ mental health and wellbeing* at the University of Otago.

“Through analysing the summer studentship data, provided by Pacific teenagers, I was introduced to the factors they felt influenced their wellbeing, some of which included family interactions, cultural identity, peer and school support, and bullying. Particularly, there were associations between wellbeing and mental health; and family and social environment.”

Kimberly realised she really enjoyed research and community involvement and after recalling a Tongan proverb: *‘the reef of today will be the island of tomorrow’* decided to continue her education. She applied for a Master in Psychology and proudly, received the 2015 University of Otago Pacific Islands Masters Scholarship.

“My Masters research is on *Voices of Parents: Pacific parents’ views on the role of connectedness and teenagers’ wellbeing*. The aim of this study is to identify culturally specific factors that Pacific parents consider for their teenagers’ wellbeing.

Ten Pacific Island parents (including two grandparents) were recruited in a one-on-one interview. I chose to use a qualitative approach because I wanted to find out the stories behind the numbers (quantitative approach). Open-ended questions with the use of semi structured interviews encouraged a storytelling approach, ensuring that the interview focus was maintained and to enable participants to take the story in a direction important to them. A follow up study was performed a week after to build on what was earlier said. The information gathered in these interviews will enable us to create a questionnaire that looks at variations in Pacific parenting style and parent-teenager connectedness.”

Kimberly has found her research - working with Pacific parents and their families - both an eye opener and a humbling experience.

“Being able to capture people’s different experiences and discover the meanings and understandings that people ascribe to certain practices and to their social environment has helped me to better understand myself and people around me.”

Kimberly hopes to further advance her research, so that one day the results from this research can be of assistance in the Pacific community.

“I hope the results of this study will implement a within-cultural framework intervention that uses Pacific ideas and perspectives for use with Pacific teenagers to improve their mental health and wellbeing. The Pacific sense of self is not individualised ‘only in relationship to others’ which is different to Western society.”

Shannon Tumataroa

PhD Candidate



As a first year student keen to get through University and into the corporate world earning big money as soon as possible, Shannon Tumataroa began her University journey studying toward a double degree in Finance and Law. She didn't make the required grade to get through first year law so decided to fill in her Finance degree with a few Psychology papers.

"From there, something just clicked. The way psychology challenges norms, questions facts and theorises new ways of doing things really excited me. Fast forward four years and I've finished a double degree in Finance and Psychology and am half way through a PhD combining the two subjects."

Shannon was always really keen on applying psychology to finance and economics. In 200- and 300-level she would always put an economic spin on reports and essays, applying psychological theories to increase business efficiency and productivity.

"When I discovered PSYC326 (Cognitive Engineering) with Associate Professor David O'Hare I couldn't believe there was a whole field dedicated to efficiency and coming up with applied ways to do things better."

So, Shannon undertook a 300-level honours research project with David into financial decision-making that flowed on to a 400-level honours project then a one year Masters.

"It only took a few months for the Masters project to develop into the makings of a PhD. A PhD is a big commitment, especially when your friends are finishing University, getting jobs, travelling and moving overseas. I don't think work, study, travel and other life pursuits have to be mutually exclusive though. I enrolled in a PhD under the supervision of Associate Professor David O'Hare, and with his support I am now living, working, volunteering and studying in Auckland."

Auckland is a melting pot for diversity and the extremes of wealth and poverty in New Zealand and having access to this kind of diversity has really benefited Shannon's research. Her research looks at how income level affects the way we make decisions, particularly consumer choice decisions. She works with regular, everyday New Zealanders which takes her right into the community and allows her to meet some really interesting people.

"I was lucky enough to receive a University of Otago Maori PhD scholarship which helped to finance my study. Even with this though I've always been a firm believer that part-time employment is a crucial way to develop as a person and bring new ideas to your research. I found that working as a research assistant was an excellent way to develop my research skills, network and see what kind of research is happening in other laboratories and organisations. I've worked on an array of projects from child development, aging, decision-making and mental illness to helping evaluate teaching materials."

Shannon's overall ambition is to combine her passion for economic efficiency and applied psychology by working for the United Nations in social and economic development. This is a competitive route as they look for individuals who have achieved not only a high level of academic success, but who have demonstrated an outstanding level of community leadership and have developed a broad range of skills and experiences.

"By looking beyond a purely academic environment and placing an equal importance on working, volunteering and traveling, I'm hoping to extend myself to become the kind of well-rounded person that could really make a difference in such a large, diverse organisation."

"The way psychology challenges norms, questions facts and theorises new ways of doing things really excited me. "

Shannon Tumataroa



Department of Psychology
William James Building, 275 Leith Walk, Dunedin 9016
Tel: 64 3 479 5049
Web: otago.ac.nz/psychology
Facebook: facebook.com/Psychology@Otago
Student Profiles: [otago/ac/nz/psychology/profiles](https://otago.ac.nz/psychology/profiles)
Email: psychology@otago.ac.nz