
INTERN REPORT

INSIGHTS FROM THE 2022-2023 COHORT



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INTRODUCTION

01

Above: The Mātai Whanau

The Mātai internship provided a unique and enriching experience for us as interns. We were fortunate enough to have the opportunity to listen to and learn from renowned international speakers who shared their knowledge and expertise with us. In addition, the weekly scientific workshops were a highlight of the program as they allowed us to delve deeper into various research topics and engage with our peers in meaningful discussions. Moreover, we could work with and experience cutting-edge technology, which provided us with valuable hands-on experience.

Throughout the ten weeks of the program, we also participated in weekly workshops to foster community engagement and conduct scientific research through a Māori perspective. Furthermore, being a part of community-focused research projects was a rewarding experience as we got to see the tangible impact of our work on the local community. The Mātai internship deepened our understanding of the importance of community engagement in research and its critical role in shaping a more inclusive and equitable society.

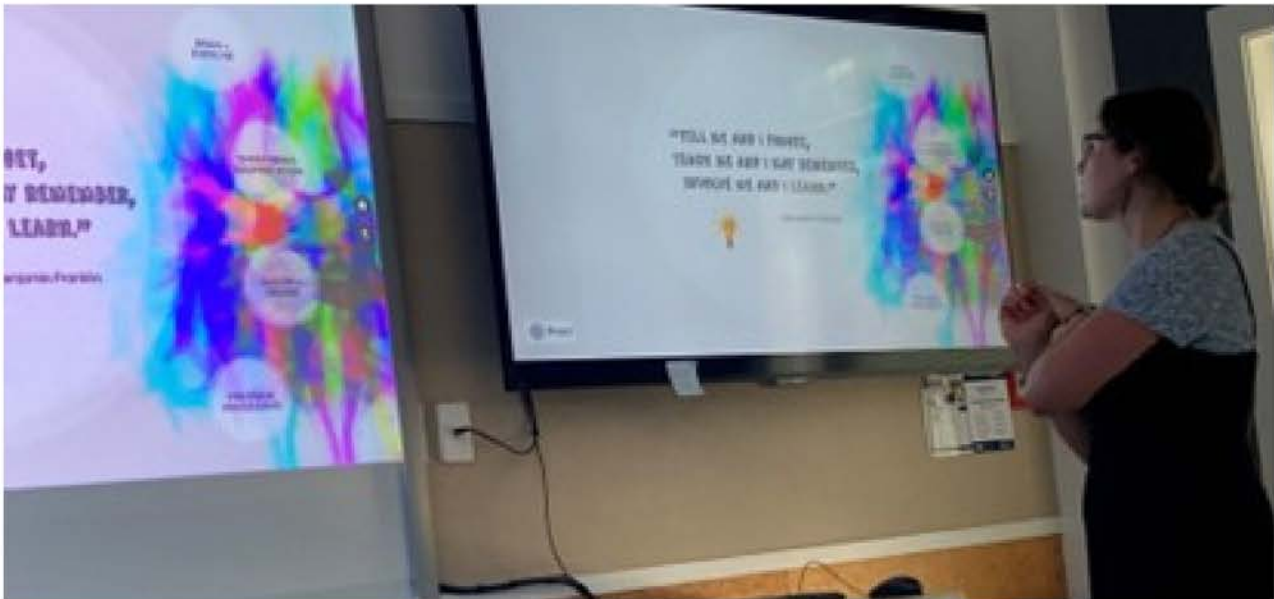
In this report, we will reflect on our experiences over the summer and share the insights we gained from this wonderful journey with our peers.

Ngā mihi nui.

SCIENTIFIC SESSIONS

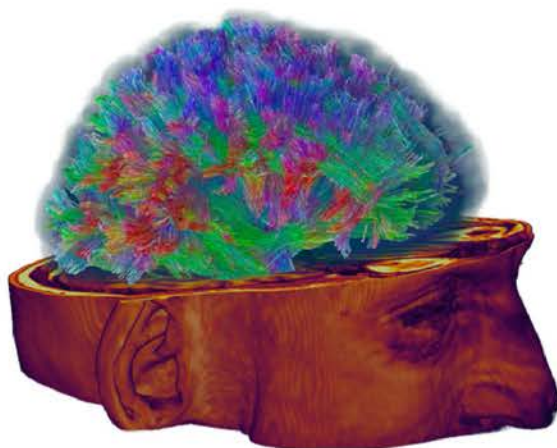
02

SCIENCE COMMUNICATION



Above: Sabine Lapointe delivering a scientific presentation to the Mātai staff, students and members of the community

Josh facilitated the Science Communication lecture where we learned both the value and challenge of effectively communicating academic research to a lay audience. Through this, we have developed skills that are vital to carrying out good research and which will translate well into any chosen study or career path.



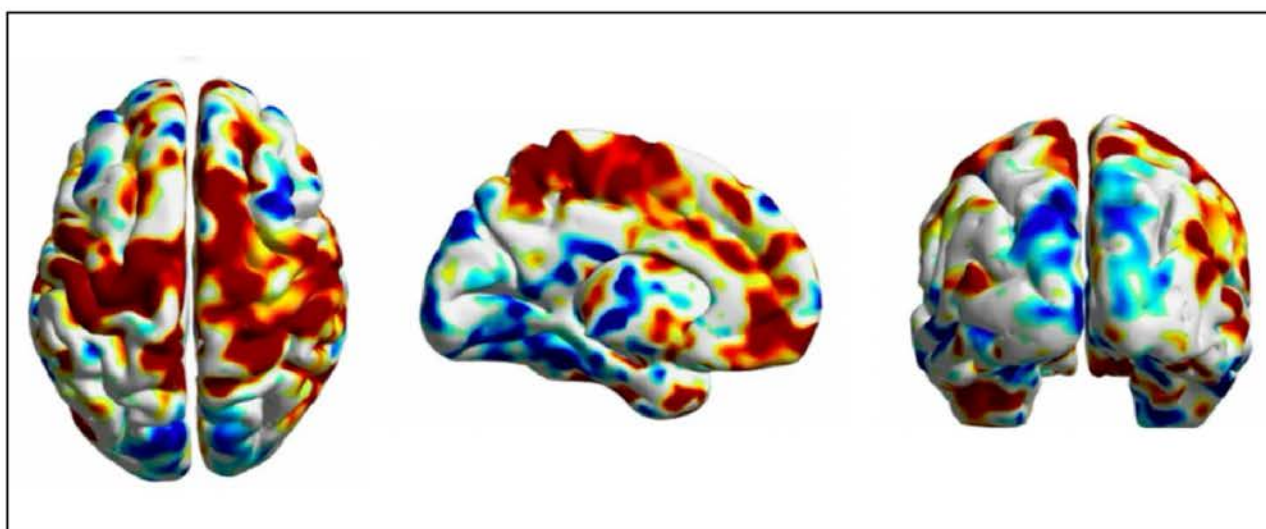
Left: Data of the 'brain wiring' reconstructed from Diffusion Tensor Imaging data acquired from the Mātai 3T MRI scanner based in Tairāwhiti-Gisborne.

“
 As a group of young people heading into careers where communicating effectively is so important, having someone take us under their wing like Josh and teaching us how it's done was awesome.
 ”

Grace Cleland-Pottie, 3rd Year Data Science Student

HOW AN MRI WORKS

Another key feature of the internship was the fundamental MRI physics taught by Samantha and Dan from the Matai team. Although MRI is a daunting and complex topic, it was conducted in a relaxed environment, encouraging questioning and conversation participation. Many of us had little to no background knowledge of MRI. Introducing these topics in such an environment helped many of us to further our understanding and build the confidence to pursue this field further. The lectures were supplemented with a hands-on experience at the scanner. We had an opportunity to be scanned and process our scans, something many students never get a chance to do in undergraduate study. We were also privileged to attend lectures and talks by world-renowned researchers who introduced and discussed recent breakthroughs in the field of MRI. These discussions inspired us to pursue our passions and persevere through the unknown in research.



Above: Functional MRI (fMRI) brain scan showing the resting-state default mode network that is a subject of investigation in many of Mātai and collaborators' research projects. Interns were taught how to process fMRI data, however, the task proved to be more challenging than anticipated. Mātai research fellows are working on a more streamlined fMRI workshop to teach the next cohort of interns.

RESEARCH METHODS

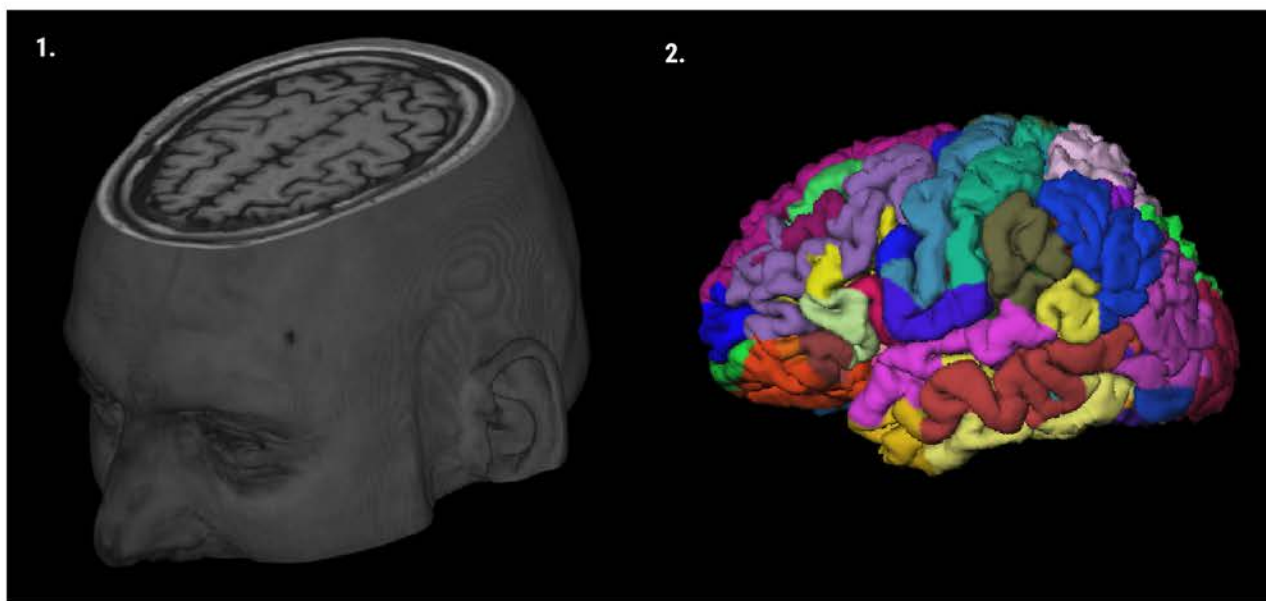
Throughout our academic journey, we have experienced one stage of the research journey, that is, the data collection or community engagement or analysis. This limitation can often leave us with a fragmented understanding of the research journey as a whole. The weekly Research Methods lectures by Josh was designed to bridge that gap and provide a comprehensive overview of the entire research journey. From the critical first step of asking the right research question to the final presentation of findings to a general audience, we were equipped with the knowledge and skills to tackle any research project with confidence. Through a series of engaging and interactive lessons, we learned about picking the right study design, critiquing scientific papers, engaging with community and clinical stakeholders, ethical considerations, fundamental statistics, data interpretation, and effective communication. By the end of the internship, we have developed a well-rounded understanding of the research process and are confident to tackle any research challenge that comes our way!

GENOMICS AND BIOINFORMATICS

William's lecture on "An Introduction to Genetics" was thoroughly enjoyed by all the interns. Typically, genetics is a complex subject matter. His approach to the subject was simple and straightforward, making it easy for everyone to follow along and understand the basics of genetics. We appreciated the effort William put into making the lecture engaging and interactive, which kept our attention throughout the session. Overall, it was a great learning experience for all the interns and sparked our curiosity to learn more about genetics.

NEUROPSYCHIATRY AND IMAGING

Gil Newburn is a true expert in the field of brain and behavior correlations. During his lecture to the interns, he showcased his clinical interests in this complex and fascinating subject matter. Each week, we were privileged to attend Gil's sessions, where he delves into the issues arising from brain injury, including changes in behavior, cognition, emotions, and social function. Gil has a remarkable ability to make complex information accessible and understandable, even for those interns who do not study neuroscience. He carefully breaks down the content and provides insights into how our brains react to and change with stressors. We were in awe of Gil's knowledge and ability to simplify complex information, making his lectures a truly valuable and enlightening experience.



Above: 1. A screenshot from a video of an intern's brain modelling. 2. A 3D rendered anatomical MRI model of the brain.

INNOVATION

The Science and Innovation lecture was delivered by Kate de Ridder, Managing Director at Bridgewest. Kate shared her extensive experience and skills in bringing investment opportunities to the market. She also shared examples of current companies in their portfolio and highlighted their journey from lab to market. This was an eye-opening session as it helped broaden our perspective of science by introducing us to innovation and product research and development. It was a fantastic opportunity to learn about entrepreneurship and the potential to commercialise research.

INTRODUCTION TO BIOENGINEERING

Eryn's lecture provided a comprehensive introduction to the field of bioengineering. The lecture was designed to provide a surface-level understanding of what bioengineering is and what research in the field could encompass. Eryn covered the basics of the field and gave us a glimpse into the exciting world of bioengineering and the various research opportunities available. This lecture was a great starting point for anyone looking to learn more about bioengineering and what it has to offer.

JOURNAL CLUB

The Journal Club sessions at Mātai played a crucial role in our internship experience. The design of the internship required us to engage in the interpretation and discussion of scientific journal articles of our choice with Mātai staff. The sessions provided an opportunity for experiential learning, where we applied the skills and techniques taught by Josh in his lectures.

Journal Club helped us in presenting our findings and understanding in a clear and concise manner, tailored to our audience. This experience allowed us to develop our presenting skills and capabilities, and enhance our ability to efficiently use appropriate search engines to find and critique journal articles. These sessions also encouraged us to actively participate as listeners, asking questions and further refining our understanding of the scientific concepts discussed.

“

At Mātai, learning skills like performing a literature review will come in very handy. Also in our internship, we learnt about how to read research papers and how to formulate a research question. These are quite essential skills to have when writing a research paper.

Nusrat Ahmad, 2nd Year Optometry Student



Above: Sam leading the way with a presentation.

INTERNATIONAL GUEST SPEAKERS

03

Experiencing lectures from internationally renowned researchers and leaders in their fields is extremely valuable for students as it provides them with a unique opportunity to gain insight into cutting-edge research and advancements in their field. Such lectures offer students the chance to hear from experts with extensive knowledge and experience, and to learn about the latest breakthroughs and developments in their field. Moreover, it also helps to broaden their horizons and exposes them to new perspectives, ideas, and approaches that they might not have been exposed to otherwise. Additionally, attending these lectures can also provide students with valuable networking opportunities and help them establish connections with leading figures in their field. Overall, attending lectures from internationally renowned researchers and leaders can play a crucial role in shaping the future careers of students and providing them with the knowledge and skills necessary to succeed in their field. We are grateful for these opportunities which Mātai provided for us.



Professor Terry Peters:

- Expert in medical imaging, researcher at Robarts Institute.
- Contributed significantly to advancing our understanding of medical imaging techniques and their applications.
- Recognized for his expertise in the field and widely respected among his peers.



Dr. Flavio Dell'Acqua:

- Translational neuroimaging scientist at Kings College London.
- Known for expertise in using advanced imaging techniques to study the brain and develop new treatments for neurological conditions.
- Helps to bridge the gap between basic neuroscience and clinical applications, making a significant impact in the field of neuroimaging.



Dr. Thomas Foo:

- Chief Scientist in the Biology and Applied Physics group at GE Research, focused on developing advanced technologies.
- Works across a variety of fields, applying cutting-edge research to develop innovative solutions.
- Reputed for his expertise and dedication to advancing technology for the betterment of society.

**Emeritus Professor Graeme Bydder:**

- Researcher at the University of California, San Diego.
- Known for his work in medical imaging and radiology, making significant contributions to the field.
- Considered a 'godfather' of MRI: respected among his peers and widely recognized for his expertise.

**Professor Ian Woodhead:**

- Chief Scientist and Group Manager of the Lincoln Technology Group at Lincoln Agritech, focused on developing sustainable agricultural technologies.
- Works to improve the efficiency and sustainability of agricultural practices, with a focus on using technology to achieve these goals.
- Regarded as a leader in the field of sustainable agriculture, making significant contributions to the industry.

**Professor Ian Platt:**

- Senior Research Scientist at Lincoln Agritech.
- Offers insights and expertise on how to bring innovative ideas to market, contributing to the growth of the venture capital industry.
- Respected and well-regarded in the field of innovation and entrepreneurship.

“

Having the opportunity to listen to researchers who are world leaders in their field is incredible and speaks to the level of work that's going on here at Mātai.

Katie Blackburne, Neuroscience PhD Student

”

INTERN PROJECTS

04



Above: Interns presenting the Tairāwhiti Child Health Study at whānau evening.

Tairāwhiti Child Health Study

Throughout the 10-week internship, we organised and successfully executed a whānau night for the participants, their families, children, and anyone specifically interested in the Tairāwhiti Child Health Study. The purpose of this event was to present the findings and insights from the pilot study to the community, and an opportunity to co-design for future studies.

With Leigh's insight, it became evident that many community members were unaware of how their participation and support had been invaluable to Mātai and their community. Leigh guided us in our event preparations to ensure that we were bringing our extended Tairāwhiti community along on our research journey. It was essential to bring everyone together by hosting a whānau evening.

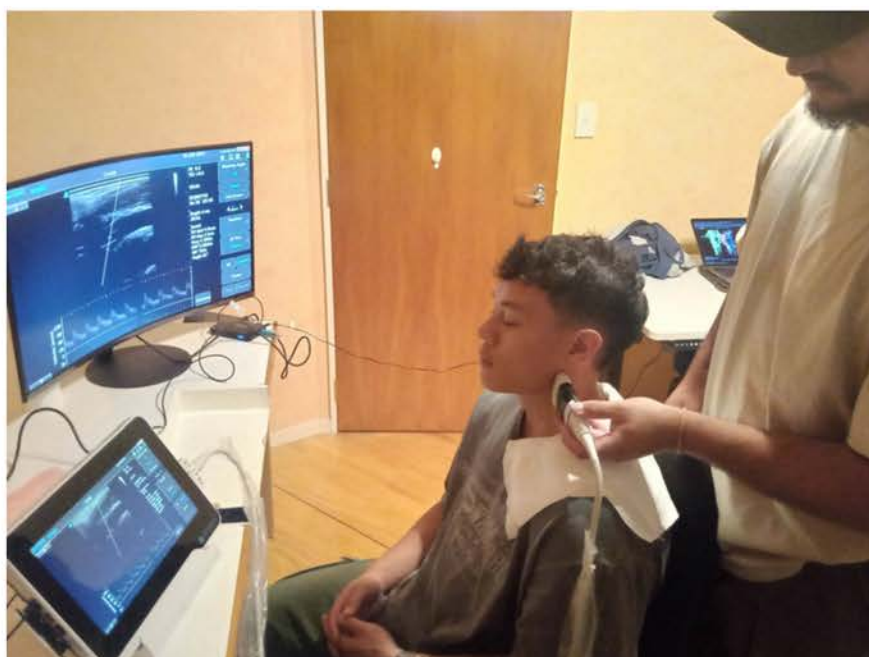
This night yielded several key learnings, including the importance of giving back to the community in a way that reached both children and families. This required us to exercise the science communication skills and tools Josh and Leigh taught us and tailor our presentation to parents/guardians and young children. From start to finish, we believe that this experience provided a valuable framework for approaching community engagement in future Mātai studies.

Finally, the study also emphasized the importance of predictive medicine, moving away from reactive approaches to a more personalized and preventative approach based on data derived from a rural New Zealand population.

Exercise Study

One of the projects some of the interns worked on was the Heart Rate Variability study. This study looks at the effect of exercise and changing heart rate on brain motion and cerebral blood flow. The interns worked on beginning a literature review as well as taking part in the practical study. We took part in familiarisation sessions to understand what we would be required to do in the MRI scanner.

We were also lucky enough to be introduced to the doppler ultrasound scanning technique to trial correlations between what the MRI was able to pick up and see if this matched the findings of the ultrasound scanner. This is so that, hopefully, the ultrasound machine can be used in a more clinical sense, such as on the rugby field, to diagnose concussions and head knocks quickly. We also worked to organise and collate previous data sets into a manageable system.



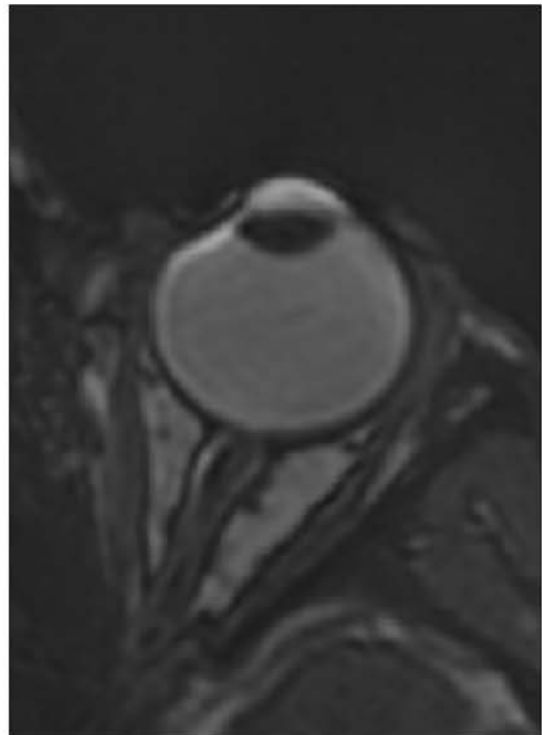
Top: As part of the exercise study, interns practised using a doppler ultrasound to locate the inner carotid artery.



Bottom: An intern getting reading for a scan!

Optic Nerve Study

This study looks at using MRI to find potential biomarkers for diseases of the optic nerve. In the study, Equinox goggles are used to stimulate negative and positive pressures on both eyes and that's done all while the patient is in the MRI machine. During my internship I did a literature review and read through several papers regarding the role of IOP and optic nerve diseases. I was also a participant in this study as part of the control group and experienced being in an MRI machine for the first time. Once all the data had been collected, I took measurements of the optic nerve and optic nerve sheath diameters. Being part of this study as helped me gain insight into what healthy optic nerves can look like in different individuals. Also, this study has given me exposure to how research is conducted and this can help me in the future if I were to do post-graduate research. (Right: Image of intern's eye)



Brain Reconstruction


During my 10-week internship at Mātai, I had the opportunity to participate in a truly unique and exciting experience - reconstructing my own brain through fMRI and DTI. With the help of MRview and Python software, I was able to bring my vision to life. Although the process was challenging, Maryam and Josh were there to provide guidance and support throughout the coding process. The end result was a visually stunning representation of my brain, with the different neurological pathways represented by vibrant colors. This experience provided a deeper understanding of the transverse and longitudinal channels within my brain and was a definite highlight of my time at Mātai.



Above: Interns Sabine Lapointe and Paige Richter, the winners of the Mātai 'Art in Science' award.

Concussion Resource

This project aimed to design a resource to hand out to patients, Mātai volunteers and whānau of people with a concussion to provide them with information in a digestible and efficient manner. This resource includes information regarding what a concussion is, symptoms, things to avoid, expected recovery, and referrals to Gisborne clinicians. This resource will be distributed to healthcare sectors throughout Tairāwhiti.



Acute concussion recovery advice

Concussion is a form of **mild traumatic brain injury**. Make sure to see a doctor if you suspect you have had a concussion. Concussions are termed "mild" injuries because they are not immediately life threatening. However, if **not treated appropriately nearly half** of concussion patients can experience severe symptoms and **take up to 6-12 months to recover**. This sheet provides you with information that will help you recover.

Concussion facts:

- Concussions happen when a sudden jolt to the head or body causes the brain to shake inside the skull. Concussion symptoms are not always obvious right away.
- This shaking injures brain cells which disrupts how the brain normally functions.
- 95% of concussions occur **without** being knocked out (loss of consciousness).
- Even if you recovered quickly from a previous concussion, it does not mean you will recover quickly again. So the current injury needs to be taken seriously.

Recovery expectations:
New Zealand data shows that with early education and the right treatment(s):

- About **50%** of adults **recover by two weeks**
- About **77%** of adults **recover by four weeks**
- About **96%** of adults **recover by eight weeks**

Children tend to recover more slowly than adults because their brains are still developing.

People with more severe symptoms in the first few days post-injury tend to recover slower and need more support.

Te Whatu Ora
Health New Zealand
Tairāwhiti

Common concussion symptoms:

Each concussion is different. Meaning the symptoms and time it takes to recover are different from person to person and injury to injury.

Thinking

- Confusion
- Trouble remembering and concentrating
- Feeling "in a fog"
- Feeling slowed down

Emotions

- More emotional than normal
- Irritability
- Sadness
- Nervousness

Physical

- Headaches
- Sensitive to lights and sound
- Dizziness
- Balance problems
- Vision problems
- Difficulty exercising

Sleep

- Fatigue
- Trouble falling asleep
- Sleeping more than usual but still feeling tired

Take control of your symptoms

During the first 48-72 hours after a concussion the best thing to do is to **take it easy** by limiting activities that worsen your symptoms. This gives your brain a head start healing itself. Stay home from work or school if necessary. Prioritise sleep and rest (including naps if required). Drink lots of water and eat healthy foods.

✗ Avoiding everything

✗ Slows recovery

Controlled progressive loading

✓ Assists recovery

✗ Toughing it out

✗ Continuing to rest and avoid activities after the first few days will not help your recovery, in fact it may slow it down. Similarly, trying to tough it out and go fully back to normal activities before you are ready will also slow recovery.

Now the goal is to **progressively reintroduce activities** to your routine that have been affected by concussion **day by day until you feel 100% back to normal**. An example of what this looks like are provided on the back of this sheet.

What causes symptoms?

When brain cells are injured during a concussion the body immediately starts trying to heal these cells, but this requires lots of energy. Unfortunately, a concussion temporarily interrupts how the brain produces energy. We experience symptoms like fatigue, sleepiness, feeling "in a fog" etc. because all of the available energy is going towards healing and not much is left over for other jobs like work or school.

This energy issue typically returns to normal within the first 2-4 weeks post-injury.

Symptoms that last beyond 2-4 weeks might be due to more specific pathways in the brain being injured by the concussion. This is where the support of a multidisciplinary team including a doctor, physiotherapist, occupational therapist, and/or psychologist might be needed.

Above: The Concussion Resource designed to give clear advice to patients.

Methamphetamine Study

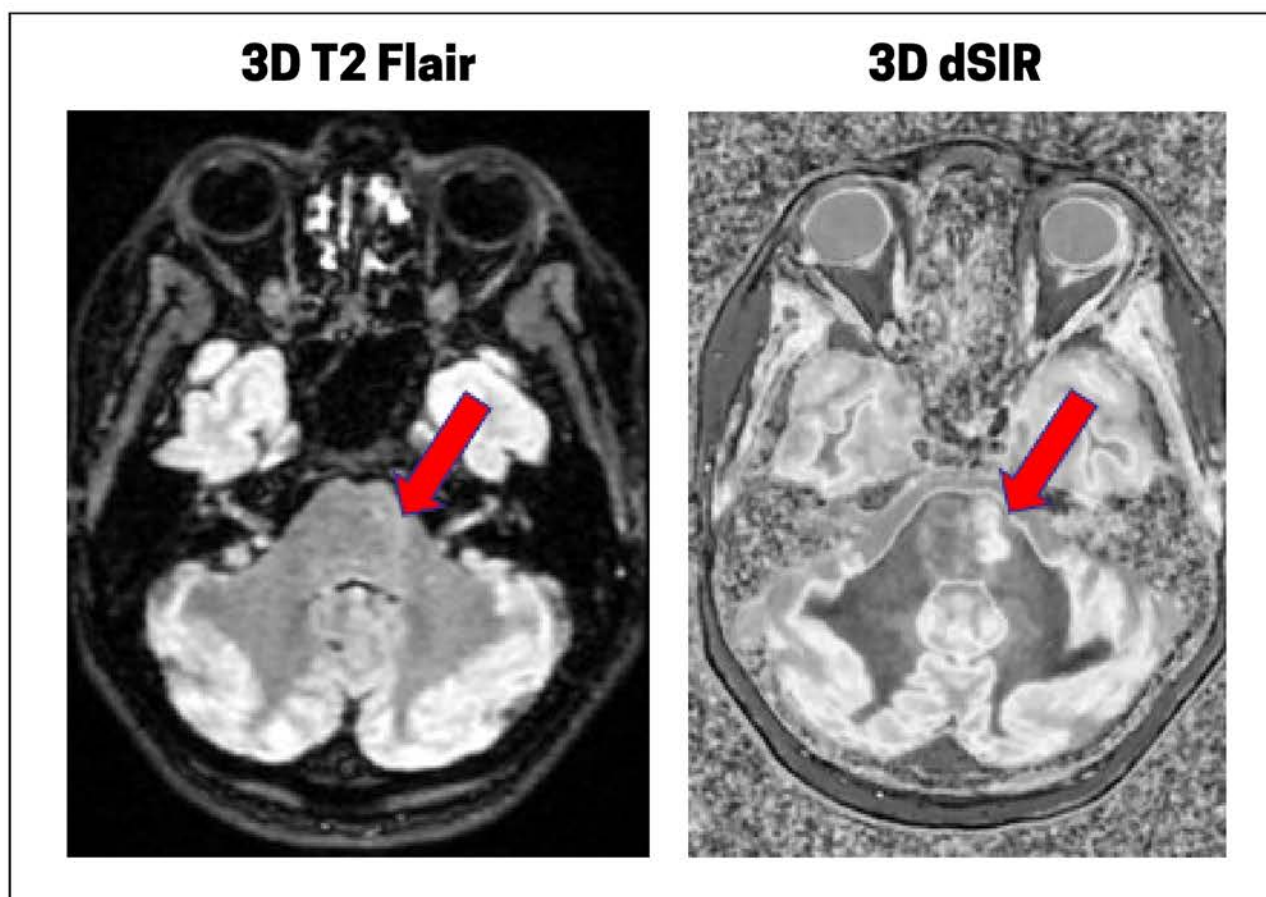
During his internship, one intern was a part of the Methamphetamine study team and had the opportunity to delve into various aspects of research. He developed experience in data collection and analysis, as well as literature extraction and appraisal. He also learned about the importance of ethical considerations in research design. Excitingly, he will be continuing this project in his PhD and exploring the brain changes in methamphetamine-abstinent participants through the use of longitudinal multi-modal imaging techniques including DTI, fMRI, MASDIR, and Myelin Mapping.

“ Diffusion MRI was one of my favourite learnings throughout this internship. I learnt how to use code and show creativity by making art of my own brain!

Paige Richter, Health Science First Year Student

MASDIR Project

One of our interns worked on the MASDIR project. MASDIR, which stands for Multiplication, Addition, Subtraction, and Division and Inversion Recovery, is a novel approach to MRI scanning developed by Emeritus Professor Graeme Bydder and his team in collaboration with Sam, Dan, and Paul from Mātai. MASDIR allows for the sensitive detection of small changes in tissue, particularly the white matter in the brain, that may indicate the early stages of a disease. Using basic math, the method selectively chooses parameters for two inversion recovery MRI sequences to accentuate these changes. The results can then be visualized using Dan's specially developed app, which does the math for you. With MASDIR, researchers are now able to see things that would otherwise go undetected, such as inflammation in the brain.



Above: The standard imaging method for multiple sclerosis is the T2 flair, however, the MASDIR scan (right) of the same patient shows a bright lesion (indicated by the red arrow) that is not present on the T2 flair. This suggests that MASDIR may detect early stages of multiple sclerosis inflammation, making it a potentially valuable tool for prompt and targeted treatment.

Vitality Study

The vitality study is a collaboration between Rongowhakaata leaders and Mātai which is currently still in the proof of concept phase. The aim of this study is to create a Kaupapa Māori lens of Māori health and vitality pertaining to our connection as tangata whenua, to our environment, our whakapapa, marae and identities. To achieve this aim, we are seeking to bridge Mātauranga Māori and Western medical imaging technology.

COMMUNITY ENGAGEMENT

05

Manawarū Cafe

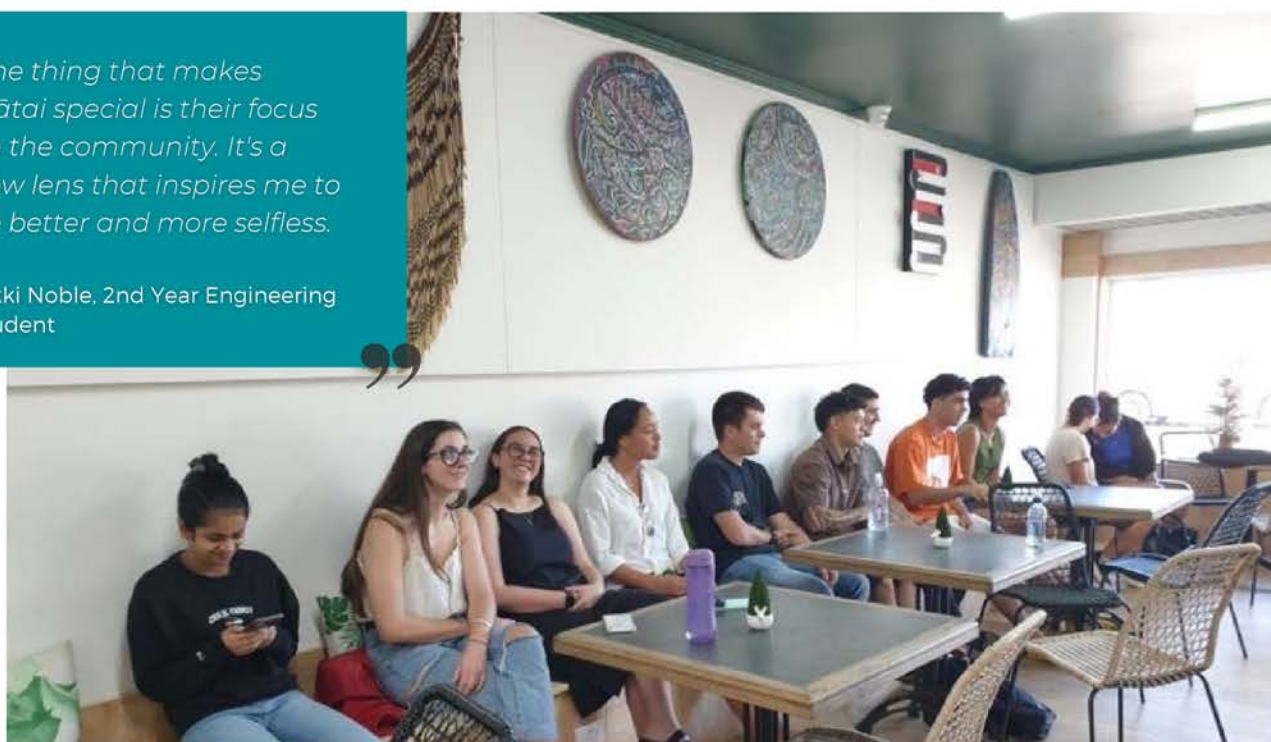
The Mātai internship involved participating in Manawarū cafe, located in a low-socioeconomic community. Our weekly community engagement was greatly enhanced by Erana, who brought warmth and energy to the space and encouraged us to actively participate and broaden our perspectives. Her engaging nature and support for everyone's ideas made the experience even more productive and thought-provoking.

Our visits to Manawarū were part of Tūranga Health's initiative to empower the community of Elgin in Tairāwhiti. Through learning about the 'soft-entry' approach, listening to Pūrākau (stories) about the land, and being educated on the local history of Rongowhakaata, we gained new knowledge and tools that we can apply, share, and integrate into our daily lives.

At Mātai, community engagement is a fundamental aspect of research, making the building of reciprocal relationships with the community even more crucial. For those of us continuing our studies in Gisborne, the connections made through these community sessions will greatly aid in our future research projects. The community cafe also provided a unique platform for interpreting pūrākau and their significance, fostering team building and personal growth.

“
One thing that makes Mātai special is their focus on the community. It's a new lens that inspires me to be better and more selfless.”

Rikki Noble, 2nd Year Engineering Student



Above: Interns waiting to present their pūrākau interpretation to their peers and community members present.

Waiata

Throughout our internship, we attended weekly waiata sessions at Gisborne Hospital, which are facilitated by Hauora Tairāwhiti's pakeke. These waiata sessions provided a holistic opportunity for us to connect with Te Ao Māori, Māori health professionals and kaumātua. In addition, engaging in waiata practice uplifted our wairua as interns, creating the space to reflect on the previous week and re-energise for the coming week.

I really appreciated this internship experience. This new lens fulfilled my desire to delve deeper into medical research and allowed me to explore and refine topics that are typically glossed over - such as community, Mātauranga Māori, and self-development.

Haylea Rodgers, 3rd Year Medical Student

Tāiki e

We were lucky to experience a "Day of Impact" at Tāiki e, where we engaged in a range of activities that fostered teamwork, creativity, and community engagement. The Fishbowl session provided a platform for open and insightful discussions, while the Escape Room team building challenge promoted teamwork and collaboration. The visit to the Haututu HackLab showcased the impact of community development initiatives, and the Youth Entrepreneurship design session challenged the interns to develop a new product offering for a local social enterprise. Throughout the day, we were fueled by delicious snacks, a nourishing lunch, and ample coffee to keep our energy levels high. We are grateful to Tāiki e for hosting this enriching and memorable experience for us.



Above: Our interns engaged in conversation during a round of 'Fishbowl'.

Tūranga Health Sports Day

We kickstarted our internship with the Tūranga Health initiative. This opportunity allowed us to forge meaningful relationships with one another and whakawhanaungatanga with the surrounding community.



Above: A team photo and an action shot! A great turn out for Tūranga Health Sports Day.

Tūranga FM

Some of our interns were invited to speak with the local radio station, Tūranga FM about their educational background, the benefits Mātai provides, and the impact they are making on their community.



You can learn all you want in a classroom or a lab – but that doesn't mean anything if you can't translate that knowledge practically in our communities where the difference is being made.

Braden Fowell, 2nd Year Psychology and Māori Studies Student



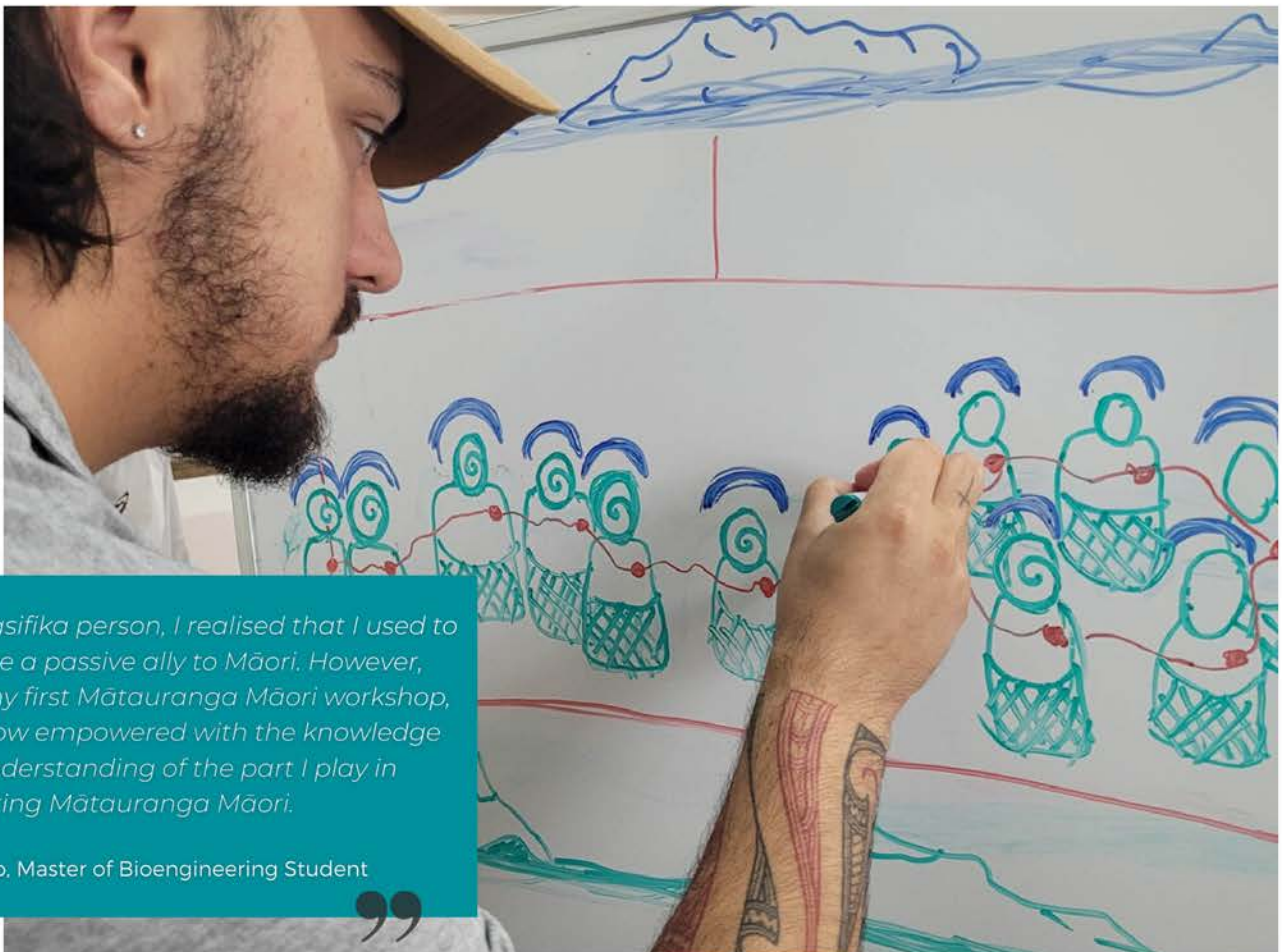
Left: Our interns in the studio!

MĀTAURANGA MĀORI

06

A significant aspect of our internship was our Mātauranga Māori sessions with Leigh Potter and Davidson Taylor, featuring various guest speakers from Tairāwhiti and our pūrākau kōrero with mahiatua at Manawarū. Each Mātauranga Māori session focused on one specific aspect of te ao Māori, which was then translated into the mahi we do here at Mātai, University and beyond into our local communities. These sessions provided a contrasting lens to the westernised outlook of learning we experience at our learning institutes. In doing this, we were able to connect our westernised science-focused ideas to te ao Māori and how we can extend this knowledge into our future work.

Our pūrākau kōrero exposed us to many concepts that were new to many of us. To help us interpret what we were learning, we made and performed waiata, dances, or art, allowing us to express our ideas creatively. These engaging and interactive sessions assisted with learning and retaining our knowledge of te ao Māori.



“As a Pasifika person, I realised that I used to be quite a passive ally to Māori. However, from my first Mātauranga Māori workshop, I am now empowered with the knowledge and understanding of the part I play in protecting Mātauranga Māori.”

Julia Imo, Master of Bioengineering Student

Above: An intern drawing his interpretation of a pūrākau.



Te Aturangi Nepia Clamp

We also had the privilege of meeting with Te Aturangi Nepia Clamp. Te Aturangi Nepia Clamp, ocean navigator and master carver, presented to us about his life journey of navigating the vast Pacific Ocean on traditional waka, learning and using ancient techniques such as celestial navigation, following animal migrations and wind currents. He spoke about our rich histories of navigation and migrations as Pacific peoples and that the Mātauranga of waka voyaging is a refined science. Te Aturangi uses waka voyaging as an analogy to the journey of understanding one's innermost self and the importance of pursuing your dreams.

Te Aturangi also shared his passion about community and cultural development. With over 40 years experience he took us on his life journey from studying engineering in Wellington, to visiting a tohunga at Parewahawaha Marae where the tohunga revealed his undiscovered talent in carving. We then heard of his renaissance of Polynesian/Māori voyaging, canoe building and voyaging throughout the Pacific. Including, the way they navigated the ocean with the sun, wind, stars and currents, the incredible storms they endured and how he caught a marlin on a handline when sailing back from Hawaii to Rarotonga.

“

Te Aturangi Nepia Clamp inspired me to follow my dreams and believe in myself in whatever I do.

Jovan Potter, First Year Health Science Student

”

In 1983, he was given a dream by his ancestors to carve a canoe prow which now sits at Heipipi in front of the Gisborne Court House and then later his dreams would include the creation of one of the finest waka using everything he had learned from all the other waka he'd helped build. The waka Hourua can be found at the marina in Gisborne and is used for educational purposes.

Leigh also delivered a workshop on data sovereignty and why it is a crucial aspect of protecting Mātauranga Māori. It refers to the right of indigenous communities to control their cultural and intellectual property, including data related to their cultural heritage, traditional knowledge, and biological resources.

Data sovereignty is essential in the context of the Mātauranga Māori sessions because it ensures that traditional knowledge and cultural heritage are protected and shared responsibly and respectfully. Leigh also helped us understand the significance of this knowledge to the Māori community and ensures that it is not misused or exploited for commercial gain.

By incorporating data sovereignty into the Mātauranga Māori sessions, this emphasised the importance of respecting and preserving Māori culture and knowledge for future generations. By learning about data sovereignty, we gained a deeper understanding of the significance of Mātauranga Māori and the role they can play in protecting and promoting it in their future work.



Peter Lucas Jones

We also had the opportunity to meet with Peter-Lucas Jones. He is a prominent figure in iwi (tribal) broadcasting, with a passion for preserving and advancing the te reo Māori language and mātauranga Māori knowledge. He is particularly interested in Maori voice recognition and natural language processing using AI. We were fortunate to hear him speak about his various AI projects and his efforts to raise awareness for the importance of preserving mātauranga Māori. His role as a guardian of Māori data is deeply inspiring. His workshop was the perfect add-on to Leigh's discussion of data sovereignty. It was eye-opening to learn about his experiences balancing the responsibility of protecting iwi and Māori data with the demands of funders and the expectations of the iwi and hapū communities.



Oka Sanerivi

Oka Sanerivi and Elizabeth Moore also presented in the Mātauranga Māori sessions. They began by introducing the concept of sharing a kava bowl, a new experience for most interns and was embraced as a new cultural lens. Next, Oka gave a presentation on the health inequities in the Pasifika community, highlighting that New Zealand's population is becoming increasingly diverse, with Pasifika youth being the fastest-growing population. He emphasised that the health needs of the Pasifika people are diverse and cautioned against treating them as a homogeneous group, as each Pacific island nation has its own unique challenges and solutions.



Elizabeth Moore

Elizabeth discussed her research on using the metaphor of a potluck to reimagine a "third space" for ethical research in Indigenous contexts. A "third space" refers to a social environment between two other spaces, such as the private and public spheres. Elizabeth discussed that the metaphor of a potluck could provide a valuable framework for understanding the dynamics of ethical research in Indigenous contexts. Just as a potluck is a communal gathering where people bring different dishes to share, ethical research in Indigenous contexts involves multiple perspectives and voices coming together to create a shared understanding.

Overall, the Mātauranga Māori sessions were a highlight of our experience. The insights and perspectives gained through these sessions will be invaluable to us as future researchers and leaders in our field. By embracing the importance of Mātauranga Māori in our education, we are better equipped to address the challenges and opportunities in our field with sensitivity, empathy, and respect.

If we are to serve our communities it's important that we appreciate how culturally diverse they are becoming, and therefore learn a bit about each of them - earning a mutual respect.

Jakob Teneti, 4th Year Medical Student

LEADERSHIP DEVELOPMENT

07



Above: Our final Leadership Development workshop for the year - time to take a team photo!

It was inspiring to learn transferable skills beneficial in various areas of life in Stu's leadership workshop. In addition, his workshops were fun and creative, providing opportunities for self-development. One intern highlighted Stu as a natural leader with real-world experience and praised the workshop for teaching effective leadership styles and problem-solving techniques.

These weekly sessions were collaborative and inventive and covered valuable skills around leadership and what it means to be a leader in the 21st century. For example, we learned about Maslow's Hierarchy of Needs; the different needs a person can have, and how to communicate. Stu also taught us how to make meaningful changes in our careers and surround ourselves with like-minded people.

In addition, Stu also emphasized the importance of values in an organization. Stu taught us that as leaders, it is crucial to lead with our values and make decisions that align with them. This not only ensures that the organization runs smoothly, but also sets an example for others to follow.

In conclusion, the weekly leadership workshops were one of the most valuable parts of the internship. These workshops taught us how to be a modern leader, an innovator who knows their values, identifies behaviours and self-reflects, and knows how to communicate. By combining practical skills and self-reflection, Stu helped us understand the importance of values and how to lead with them.

“

Stu always pushed us every session, really made us think. It was great fun and creative.

Jackson Clarke, 2nd Year
Engineering Student



”

Stu, you would have to be one of the most natural leaders I've ever encountered. It helps when you see that the person who is running your leadership workshop is someone with real experience. It is important for us to know about effective leadership styles in our modern world, as well as how to tackle problems and coach others when we are in a profession that requires that skill set. Thank you for your time!

Jet Wright, Neuroscience PhD Student

”

CONCLUSION

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FROM THE MĀTAI STAFF

The interns have successfully completed all of the modules of their learning course with a medium-high level of proficiency and understanding. However, one particular module (the fMRI and DTI brain processing task) proved to be more challenging for some, with only 4 out of 16 interns successfully completing it. The difficulty of the task posed a challenge for the interns, but the team is actively working to streamline the task and make it more approachable. The goal is to ensure that all future interns are able to complete this module with ease and continue to excel in their learning journey.

The interns have all expressed a strong interest in and inspiration to continue their careers or pursue further studies in medical research, science, technology, engineering, and mathematics. Their passion for these fields was evident through their eagerness to participate in hands-on projects and their desire to learn more about the latest advancements and breakthroughs. The interns consistently demonstrated their curiosity and drive to make a difference in these fields, and their commitment to lifelong learning. Their enthusiasm has been contagious, and their dedication to their chosen paths is inspiring. The team is confident that these interns will go on to make significant contributions to their fields and make a positive impact in the world.



Above: Our interns were featured in the Gisborne Herald!

WHERE TO FROM HERE?

Our interns are embarking on a mission to educate young people about STEM fields and the valuable opportunities they present. By visiting high schools and sharing their personal experiences, they are inspiring the next generation of scientists, engineers, and technology experts. This initiative has enormous value as it provides students with a glimpse into the exciting world of STEM and the many ways they can use their skills to make a positive impact on society. Our interns are also role models, demonstrating that young people with a passion for STEM can achieve great things and make a difference. Through this program, we aim to spark an interest in STEM and encourage more young people to pursue careers in these fields, helping to ensure a bright future for our communities and the world.



Above: Part of the Mātai Intern Program is to help inspire youth in STEM.

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My internship experience gave me the confidence to pursue a career in neuroscience. Medical imaging and neuroscience are daunting fields but first-hand experience helped reduce any doubts I had.

Ben Bristow, Neuroscience PhD Candidate

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Te Puni Kōkiri
MINISTRY OF MĀORI DEVELOPMENT



HUGH GREEN FOUNDATION

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Our peers for creating an encouraging learning environment. May we continue to journey together.



Mātai
Te Mata Mātai Hura

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