20

ANNUAL
REPORT

fara

FRIEDREICH
ATAXIA
RESEARCH
ASSOCIATION

22

# Our Mission is to support research into treatments and a cure for Friedreich Ataxia.

## WHO IS FARA?

The Friedreich Ataxia Research Association (**fara** Australia) is a not-for-profit organisation that supports research into treatments and a cure for Friedreich Ataxia (FA).

Our priorities are to:

- Identify and fund the most promising research and cutting-edge therapies
- Raise funds through corporate partnerships and community fundraising
- Engage with and support the FA patient community and their families
- Raise awareness of FA within the community and scientific and medical professions
- Promote knowledge sharing and collaboration within the scientific community and medical profession

Since its establishment in 2003, **fara** has funded over $4.7m in scientific research. Although there has been significant progress, today there is no cure for FA. But we have hope.

# WHAT IS FRIEDREICH ATAXIA?

Friedreich Ataxia (FA) is an inherited genetic condition that causes progressive damage to the nervous system resulting in symptoms which include muscle weakness, loss of balance and coordination (ataxia), speech problems and heart disease.

Friedreich Ataxia is the most common form of hereditary ataxia, affecting about 1 in every 30,000 people in Australia. Friedreich Ataxia is also referred to as Friedreich's ataxia and abbreviated to FA or FRDA.

**How do you inherit FA?**
FA is inherited in an autosomal recessive pattern, which means that in order for a child to be affected, they must inherit two abnormal copies of the FXN gene, one from each parent. The parents, who each have one abnormal copy of the FXN gene are known as carriers. They do not have any symptoms of FA and usually don't know that they are carriers. If both parents are carriers, they have a 1 in 4 chance of having an affected child.

**About 1 in 90 people of Caucasian background is a carrier of the FA gene. FA can be diagnosed via a genetic test.**

# WHAT ARE THE SYMPTOMS OF FA?

Symptoms usually begin between the ages of 5 and 15 but can appear as early as 18 months or as late as 40 or 50 years of age. About a quarter of people have what is considered late-onset FA with symptoms appearing after the age of 25. There is a great deal of variability from person to person in the age of onset, severity and range of symptoms experienced. The main symptoms include muscle weakness and ataxia which is a loss of balance and coordination. FA does not affect a person's cognitive ability.

The first symptom is usually difficulty in walking which may be noticed as frequent tripping or an unsteady walk. Before diagnosis, people with FA are often considered "clumsy". Balance and coordination continue to decline over time, and muscles in the legs are easily fatigued, making it increasingly difficult to walk. Most people with FA will need the aid of a wheelchair sometime between 10-20 years after symptoms begin.

As FA progresses, problems with speech and swallowing may start to appear due to tongue and facial muscle weakness. Everyday tasks like writing, dressing, cooking and eating become more difficult. FA can also lead to hearing loss or visual impairment for some. Foot deformity is also a common problem and about two-thirds of people with FA develop curvature of the spine (scoliosis). Other possible serious complications include heart problems and diabetes.



# WHAT CAUSES FA?

Friedreich Ataxia is caused by changes (sometimes called mutations) in the FXN gene which contains the instructions for making frataxin protein. Normally, the gene contains five to 30 repeats of a three-letter code but in people with FA, the gene contains hundreds of these repeats.

The frataxin protein has an important role in energy production in the energy factories of the cell, which are called mitochondria. Iron is essential for energy production in the mitochondria and it is thought that frataxin acts as a storage vessel for iron and releases it only when it is needed. If frataxin is missing or defective, excess iron is left floating around which stresses and damages the mitochondria. This stress is known as oxidative stress – the build-up of harmful oxygen-based free radicals.

Mitochondria act as an essential energy source for nearly all of the cells in our bodies, which probably explains why FA affects many different parts of the body including the muscles, nervous system and heart. It is also thought that these parts of the body may be particularly susceptible to damage by free radicals.

**the FXN gene.**

## CHAIRMAN'S MESSAGE

On behalf of the Board, I am delighted to present the 2021 – 2022 Annual Report.

The year was very much one of two halves concluding in grand style with the return of our core fundraising program in 2022 after the last of the pandemic impacts continued to restrict us during the final six months of 2021. Across the last 24 months, we have learned a great deal about building a resilient program and will carry these lessons forward in our future planning. **fara** has emerged from the Pandemic ready for growth!

After an extraordinary ten years of service to **fara** including six as Chairman, Peter Evans retired in February 2022. Peter's tenure spanned a period of exceptional growth in fara's activities and fundraising. He was also present to guide us through the COVID Pandemic. We wish Peter all the best and thank him for his selfless commitment to the FA community and **fara**.

In September 2021 Andrew Brockway joined our Board. Andrew quickly made his mark filling a skills deficit we had with his professional experience working in implementing clinical studies and managing research programs within the pharmaceutical industry.

Our thanks to the **fara** executive team now lead by Brad Hyde as CEO with the support of Sam Jackson and Dorota Sosnowski. In a year of transition, we farewelled CEO Sherelle Fyfe in February. Thank you to Sherelle for leading **fara** and committing her energy and enthusiasm to a challenging period in our history.

To our many donor's & commercial partners, many of whom come from within our own FA community, we offer our deepest gratitude. In a crowded giving environment and during difficult economic times, we continue to be astounded by the generosity we witness each week. Thank you for your support and kindness.

We closed the year with an all-team Strategy Day which resets us for an exciting year ahead with clear priorities for 2022 – 23 and a clarified focus on our long-term goals as we rebuild from the Pandemic.

Mason Allamby
Chairman



## CHIEF EXECUTIVE OFFICER'S REPORT

The year proved to be one of great change for **fara**.

As we emerged from the COVID-19 Pandemic, the **fara** team quickly and professionally responded with a return to face-to-face events and fundraising. In a jam packed five months, both the Melbourne and Sydney GALAs were held and Lend Us Some Muscle closed out the financial year.

The much-postponed GALAs were a major boost to a fundraising year severely impacted by the pandemic, but as importantly, were a great way to bring our community back together to share and connect.

Our team also transformed with Sherelle Fyfe concluding her tenure as CEO in March following a wonderfully committed six years serving **fara** and driving our cause forward.

In late April, I joined **fara** as the new Chief Executive Officer. My early observation is this is a very special community; the care, commitment and shared purpose I have encountered are extraordinary. These are characteristics that can't be acquired and have no doubt contributed significantly to the success of **fara** across our history.

I am incredibly keen to learn more about the many people who have contributed to our success and hearing your stories. I see it as a great honour and responsibility to be in this role and look forward to rebuilding **fara's** capability and growing our presence in the years ahead.

Brad Hyde
Chief Executive Officer

# THE BOARD

The **fara** Australia board is made up of dedicated volunteer non-executive directors, who all have a passion to find a cure for FA.

In February 2022 we farewelled Peter Evans as Chairman. Peter's contribution to fara across ten years on the Board including six as Chairman is immeasurable. The legacy Peter has created is to be applauded and he retires from official fara duties with our thanks and congratulations.

Mason Allamby was elected Chairman in June 2022.

**Peter Evans – Chairman (retired 21st February 2022)**
Peter is an Equities Adviser at Bell Potter Securities and has over 35 years experience in the financial sector across a broad range of asset classes. Peter has a strong interest in philanthropy and had been on **fara's** board since 2013 being appointed Chairman in 2016. Peter has 2 nieces living with FA.

**Mason Allamby – Director / Chairman from 24th June 2022**
Mason has a Commerce Degree, Diploma of Superannuation Management, Diploma of Financial Planning and is a Certified Financial Planner. Mason is a Partner and Co-Founder of Escala Partners, a leading Australian wealth management business and also a Partner and Co-Founder of 2nd Chapter, a business management company. Mason was recently ranked 3rd in the Barron's Australia Top 100 Financial Adviser List, published in the Australian Financial Review 2020. Mason has a son with FA.

**Jason Coffey – Secretary**
Jason Coffey (B. Com, G. Dip.AF) is a Principal at Morgans Financial Limited. He has over 20 years' experience in wealth management, providing professional investment management and strategic financial planning advice. Prior to joining Morgans Jason was a Director with JBWere. He is currently a Board Member of the Friedreich Ataxia Association Victoria. Jason's sister has FA.

**Richard Steer – Treasurer**
Richard Steer (B. Bus, Grad Cert Acctg) is a manager at NineSquared, a Brisbane based economics consultancy. His expertise includes financial management and analysis, program and portfolio management and policy development. Richard's husband has FA.

**Emma Hampton - Director**
Emma is the Director of Sydney Educational Tours, providing study tours with English language tuition at leading Australian universities and private secondary schools. Emma's expertise includes tourism, marketing and events. Emma's father, Professor Peter Rousch co-founded fara in 2003 and her brother Nick has Friedreich Ataxia. During her spare time, Emma is a keen runner, having run the New York Marathon for fara, and completed a number of half marathons and fun runs to raise funds and awareness of Friedreich Ataxia.

**Andrew Brockway - Director from 23rd September 2021**
Andrew is the Head of Business Development ANZ for IQVIA, a global contract research organisation. He has >20 years research and pharmaceutical experience and has held local and global roles in R&D in large pharmaceutical companies as well as local research institutions. Andrew has expertise in the development and operational delivery of global clinical studies across Asia Pacific, Europe, Africa, and North America. He is passionate about the development of new medicines for diseases with inadequate treatments and spent many years working on clinical trials for malaria and tuberculosis vaccines. Andrew's nephew has FA.

## THE STAFF

During the year **fara** Australia underwent a period of team transition. After two years as CEO and six with fara, Sherelle Fyfe departed the team in March 2022. We thank Sherelle for her dedication and commitment to **fara** during her tenure, particularly during the difficult Pandemic years. In April 2022 Brad Hyde joined **fara** as our new Chief Executive Officer.

**Sherelle Fyfe - Chief Executive Officer (Resigned March 2022)**
Sherelle Fyfe (B. Com) has worked in the not for profit sector for most of her career with the Starlight Children's Foundation, Cancer Council Victoria and advocacy organisation Research Australia which promotes the importance of investment in Health and Medical Research in Australia.

**Brad Hyde - Chief Executive Officer (Commenced April 2022)**
Brad Hyde (B. Eco) has had a career in Senior Marketing & Strategic Management roles with Australian and International companies where he has worked to define and differentiate organisational purpose and brand positioning and used this to drive engagement. He is an enthusiastic storyteller with a love of simple, clear communication. With a passion for volunteering, Brad has been involved in local education and sporting groups for more than a decade where he applies his professional experience to help support the community.

**Sam Jackson - Marketing and Fundraising Coordinator**
Sam Jackson (B. Bus) is an organiser and has vast experience in a variety of industries. She has found great satisfaction in searching out new possibilities and working hard to connect and build new relationships that benefit from what the brand delivers. She has worked in media, business administration, and the entertainment industry, as well as undertaking several volunteer roles within her community.

**Dorota Sosnowski - Finance and Accounting Advisor**
Dorota (B. Com, FCCA) assumed the Financial Controlling responsibilities at **fara** in 2017 by establishing a robust accounting and reporting system. Dorota is a Fellow of Association of Chartered Certified Accountants (FCCA) and prior to joining **fara**, has been in public practice for over two decades, mainly with KPMG in the Cayman Islands, and Poland in areas of financial services and assurance.

## OUR STRATEGY

We are guided by four strategic areas:

**01. Research**
- Co-fund the most promising research studies
- Collaborate with government, advocacy groups, researchers, clinicians and pharmaceutical companies
- Ensure Clinical trials and resulting treatments when available are accessible to all FA patients in Australia

**02. Governance**
- Ensure best practice in compliance and corporate governance
- Ensure efficiencies are prioritised to maximise money invested in research

**03. Community**
- Raise awareness of Friedreich Ataxia and the work of fara Australia
- Connect and educate FA patients, their families and friends
- Provide support and hope to newly diagnosed patients and their families

**04. Fundraising**
- Invest in fundraising activities which yield a high return
- Cultivate and support partnerships with companies, trusts and donors
- Support community fundraisers

# FINANCIAL PERFORMANCE

**fara** Australia's net income for this financial year was $257,379, a 21% decrease from last year. This decrease in income was due to the ongoing impact of the COVID-19 Pandemic on Community Fundraising as well as the positive impact of Government Subsidies in the prior year. **fara** Events began to rebuild the income base in the final quarter.

Our operating expenses of $91,403 enabled us to report a net operating profit of $165,976.

**fara** Australia was pleased to be able to co-fund a further seven research grants with just over $244,000 invested.

This financial performance summary is extracted from the audited annual general report for the Friedreich Ataxia Research Association, ABN 74156394973. A copy of the report is available in full from the Australian Charities and Not-for-Profits Commission www.acnc.gov.au

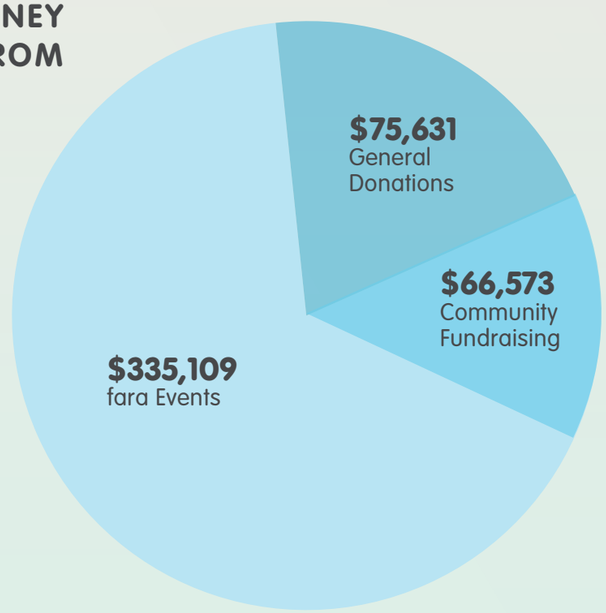
**fara's** auditor is Prospect Accounting.

| **STATEMENT OF PROFIT + LOSS AS AT 30 JUNE 2022** | **2021-22** | **2020-21** |
|---|---|---|
| **NET INCOME** | | |
| EVENTS | 170,108 | 133,330 |
| COMMUNITY FUNDRAISING | 74,967 | 147,330 |
| OTHER INCOME | 12,304 | 44,900 |
| **TOTAL NET INCOME** | **257,379** | **325,560** |
| **OPERATING EXPENSES** | **91,403** | **65,359** |
| **OPERATING PROFIT** | **165,976** | **260,201** |
| **RESEARCH INVESTMENT** | **244,304** | **319,059** |
| **NET EXCESS/(SHORTFALL) OF INCOME OVER EXPENSE/INVESTMENT** | **(78,328)** | **(58,859)** |

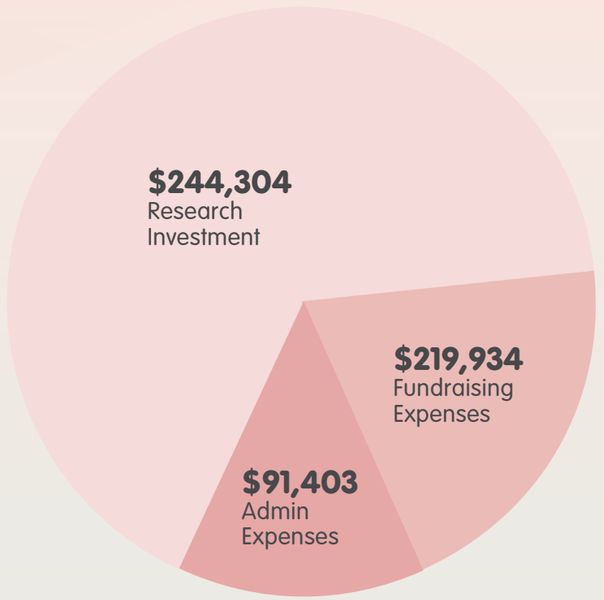
| **STATEMENT OF FINANCIAL POSITION AS AT 30 JUNE 2022** | **2021-22** | **2020-21** |
|---|---|---|
| **ASSETS** | | |
| BANK | 92,603 | 136,006 |
| CURRENT | 249,471 | 329,747 |
| FIXED | 1,300 | 568 |
| **TOTAL ASSETS** | **343,374** | **466,320** |
| **LIABILITIES** | | |
| CURRENT LIABILITIES | 26,208 | 68,390 |
| NON-CURRENT LIABILITIES | - | 2,436 |
| **TOTAL LIABILITIES** | **26,208** | **70,827** |
| **NET ASSETS** | **317,166** | **395,494** |
| **EQUITY** | | |
| CURRENT YEAR EARNINGS | (78,328) | (58,859) |
| RETAINED EARNINGS | 395,494 | 454,352 |
| **TOTAL EQUITY** | **317,166** | **395,494** |

# FINANCIAL PERFORMANCE

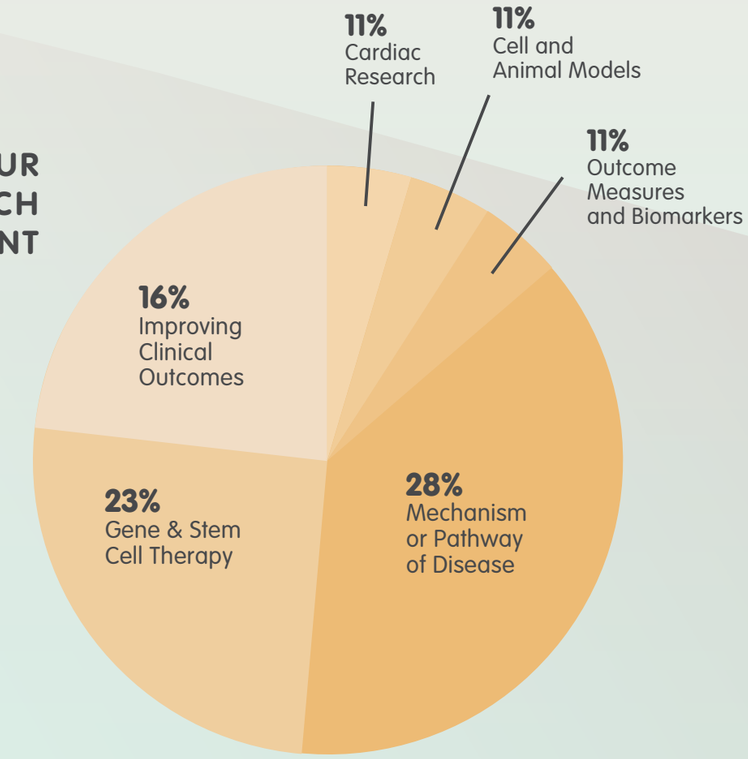
## WHERE OUR MONEY COMES FROM




## WHERE OUR MONEY GOES




## OUR RESEARCH INVESTMENT



# LEND US SOME MUSCLE

FA community members from across the globe flexed their muscles in this year's Lend Us Some Muscle campaign raising more than $85,000 for FA research. In Australia alone, nearly $56,000 was raised!

In 2022 we took inspiration from the 15,000 people globally with a confirmed FA diagnosis and challenged flexors to do 50 bicep curls for 30 days…1,500 curls each! As well as this, our amazing community ran their own themed fundraisers and challenges.

We would like to acknowledge and thank our international advocacy partners FARA US and FARA NZ who supported and promoted LUSM 2022!

As well as this we were supported in Australia by numerous local celebrities and sports starts flexing and posting to their social media accounts. These included former Socceroo Archie Thompson, Western Bulldogs AFL star Bailey Smith, heavyweight boxer Joseph Goodall and Port Adelaide AFL champion Charlie Dixon.

With social media playing the core role in promotion with flexors and supporters driving awareness particularly with video content, we were also supported with Community Service TV placements of 'When We All Flex – incredible Things Can Happen' on Network 10, SBS and Prime.

Thanks to everyone who flexed…no matter how, and those who supported them with their generous donations!



# GALAS

Following the postponement of our GALA Events during the COVID-19 Pandemic, we returned to these amazing celebrations of our community in February 2022.

Our first gathering was a fun-filled night of fine food, music and of course fundraising at the Melbourne's Sofitel Hotel.

We followed this quickly with a return to Sydney, where Doltone House hosted our mid-March function.

Across the two events, more than 450 guests came together in some of the first face to face functions they had attended in two years.

With spirits high, our guests and supporters raised an extraordinary $114,000 though pledges, silent auction bidding, sponsorships and ticket sales!

Whilst we recognise that these are important fundraising events, we are cognisant that these nights play a significant part in bringing our community together to share experiences, catch up and enjoy each other's company.

GALA FOR FARA

# RESEARCH INVESTMENT

**fara** Australia has continued its support of promising research projects, carefully reviewed and selected by the FARA US Scientific Review Committee to advance nine Research Strategic Initiatives:

- Gene and Stem Cell therapy
- Cardiac Research
- Mechanism or Pathway of Disease
- Improving Clinical Outcomes
- Drug Discovery
- Lead Candidates
- Cell and Animal Models
- Outcome Measures and Biomarkers
- Natural History and Biorepository

This year fara Australia has contributed research funding to the following projects…

**Investigating sympathetic nervous dysregulation in the pathogenesis of cardiomyopathy in Friedreich's ataxia**

Principal Investigator: Jarmon Lees, PhD,
St Vincent's Institute of Medical Research, Melbourne, Australia
**Funding period: 1st October 2020 – 15th May 2023 (Year 2)**

Major hurdles in the development of effective therapies to combat Friedreich's ataxia (FRDA)-associated heart disease include the difficulty of obtaining human heart tissue for study, and animal models of FRDA that do not sufficiently recapitulate the human disease. To this end, disease modelling using human induced pluripotent stem cells (iPSCs) may provide a solution by delivering models that faithfully represent human diseases. iPSCs can multiply indefinitely and be differentiated into any cell type in the body. Hence, FRDA heart tissue which can be made from FRDA-iPSCs, is a promising tool for the study of FRDA heart disease and for the development of new therapies.

Clinical studies of FRDA have reported dysfunction of the heart's autonomic nervous system, the electrical system that controls how fast or slow the heart beats. In FRDA this manifests as a faster resting heart rate, increased noradrenaline production, and a higher incidence of cardiac arrhythmias. It is plausible that both the heart disease and arrhythmias, commonly manifested in FRDA patients, are linked to this dysfunction of the autonomic nervous system. Previous research has focused mainly on the heart muscle (i.e. cardiomyocytes), but has not examined the heart's autonomic nervous system.

In this proposal, we aim to investigate the causes of the heart disease in FRDA by generating cardiomyocytes and autonomic neurons from FRDA-iPSCs to study the development of FRDA-associated heart disease. We will examine the cardiomyocytes and neurons in isolation, and then assess the interaction between the cardiomyocytes and the neurons by growing the cells using our cutting-edge 3D multicellular beating cardiac organoids composed of cardiomyocytes, autonomic neurons and blood vessels. This new model of human heart tissue is a marked improvement over older simplistic models that lack blood vessels and neurons which are essential cellular components in the heart for disease development and the discovery of new effective treatments. This organoid model is an advanced pre-clinical human platform that can faithfully recapitulate heart disease.

This proposal aims to unravel the causes of heart disease in FRDA, with a particular focus on the contribution of dysfunctional autonomic neuronal activity. The outcomes of this study will potentially provide a novel target for therapeutic interventions to limit or prevent morbidity and mortality in FRDA.

**Nuclear frataxin and the regulation of macrophage activation**

Principal Investigator: Marco Carpenter PhD,
Children's Hospital of Philadelphia
**Funding Period: 1st September 2021 – 31st August 2022**

Little is known about the role of frataxin in nuclei or about the mechanisms that control its appearance within the nuclear volume. Key evidence suggest Frataxin has novel DNA repair functions and that this function is important in the pathogenesis of FRDA: 1) Iron accumulation is an inconsistent and late event in FRDA cells and animal models 2) Increased sensitivity to reactive oxygen species and impaired DNA repair appears to be an early event in the pathogenesis of FRDA 3) frataxin isoform expression and proteolytic processing target frataxin protein to the nucleus in some cell-types. These observations encourage a new perspective on frataxin beyond mitochondrial mechanisms, such as a role in the regulation of DNA protection related

to oxidative damage and transcriptional regulation in macrophages. Here in, we optimize methodologies to profile and quantify frataxin interactions in the nucleus. Our approach is the first to investigate nuclear frataxin-mediated gene regulation in response to increased oxidative stress using a combination of classic and novel methodologies. Findings from this proposal will inform the design of novel therapies targeting nuclear frataxin.

**Nanoparticle-mediated gene delivery of frataxin to Neurons**
Principal Investigator: Professor Mirella Dottori PhD,
University of Wollongong, Wollongong
**Funding Period: 1st September 2021 – 31st August 2022 (Year 2)**

Lay Summary:
A major goal for treating FRDA is to identify therapeutic compounds that can (a) increase or sustain FXN protein expression in neuronal and cardiac cells and (b) be easily delivered to brain and cardiac tissue.

Advances in materials science and bioengineering are poised to revolutionize healthcare andmedicine, in areas including drug delivery and diagnosis. Biomaterials in the form of nano and microparticles have the capacity to encapsulate drugs, including protein and nucleic acid drugs, and overcome the challenges free drugs face in complex biological environments, including stability, degradation and poor penetration into tissues and cells.

Through engineering, they can be designed to release their contents inside the cell, thereby essentially serving as a specialized carrier system for delivering therapeutic agents.This project sets to explore the use of nanoparticles as a non-viral strategy to deliver geneticmaterial (plasmid DNA) to increase FXN levels in neurons.

The three specific aims of the project are:
Aim 1: Identify the optimal nanoparticle size, charge (composition) and density to be taken upby sensory DRG-like neurospheres (NSPs) derived from FRDA iPSCs.
Aim 2: Deliver FXN expression vector into FRDA-derived sensory NSPs using optimized nanoparticle types and assess cellular changes in FXN levels over time.
Aim 3: Examine the in vivo capacity of nanoparticles to deliver a GFP-expression vector intothe cerebellar and DRG regions of adult rodents.



**Dentato-Thalamo-Cortical tracts in Friedreich Ataxia: impact of its modulation on Friedreich Ataxia symptoms and brain functional architecture**
Principal Investigator: Naeije Gilles MD, PhD,
Université Libre de Bruxelles
**Funding Period: 1st October 2021 – 30th September 2022**

The cerebellum modulates a wide range of motor and cognitive behaviours thanks to reciprocal connections between the cerebellum and the brain cortex. The main cerebellar output structure is the dentate nuclei that targets the brain cortex through the dentato-thalamo-cortical tracts (DTC). Dentate nuclei progressive atrophy and associated DTC impairment are core to the development and progression of Friedreich Ataxia motor and non-motor symptoms. Cerebellar transcranial direct current stimulation (ctDCS) is a non-invasive and clinically friendly technique that may improve DTC functioning. ctDCS has shown efficacy in improving motor and cognitive performances in degenerative ataxia of mixed origins but its mechanisms of action are poorly characterized. The aim of this project is first to assess the potential efficacy of ctDCS to alleviate Friedreich symptoms and second to understand the relationship between DTC and brain functional architecture in Friedreich Ataxia. To do so, ctDCS and its potential clinical benefits evaluation, will be combined to non-invasive brain functional imaging investigations of cerebral resting state (i.e., in the absence of any explicit task) activity pre and post ctDCS stimulation using functional magnetic resonance imaging and magnetoencephalography. Ultimately, this study may provide evidence for an electrophysiological alternative to drug treatment in Friedreich Ataxia and a better understanding of DTC role in motor and cognitive behaviours.

**Investigating epigenetic silencing in Friedreich's Ataxia**
Principal Investigator: Rucha Sarwade PhD,
Monash University, Melbourne
**Funding Period: 10th January 2022 – 9th January 2023**
**(With possible 2nd year extension)**

Several models have been proposed to explain FXN gene silencing. Two eminent amongst them are; 1. Formation of unusual triplex DNA structures and R-loops that interferes with the RNA pol II processivity leading to transcriptional blockage, 2. Formation of heterochromatin. While research findings are consistent with both possibilities, neither of them adequately explains transcriptional silencing of FXN gene. This project aims to fill this critical knowledge gap and uncover sequential epigenetic events that are crucial to design effective treatment strategies for Friedreich's Ataxia (FRDA). In a parallel universe, studies on plants that have a peculiar growth defect due to an intronic triplet repeat expansion led to interesting

observations. This plant model shares striking parallels at the molecular level with FRDA, suggestive of potential common underlying biology. In the plant model, repeat expansion causes accumulation of specific non-coding RNA species called siRNAs. These siRNAs lead to gene silencing by RdDM (RNA dependent DNA methylation) -dependent epigenetic modifications. Interestingly, repeat expansion-associated plant phenotype was rescued by mutations in enzymes that can cause post-translational modification of proteins. Excitingly, HETEROCHROMATIN PROTEIN 1 (HP1) that has been shown to be associated with epigenetic silencing in FRDA is known to be affected by such post-translational modifications. Dr. Sarwade hypothesizes that RNA -mediated epigenetic changes occurring at the FXN locus are maintained by protein modifications of chromatin modifiers such as, HP1. Through this fellowship, Dr. Sarwade intends to test whether the learnings from the plant research also translate to FRDA, using cell lines derived from patients.

**LEOPARD-FA: Longitudinal Endpoint Optimization to Provide an Assessment of Relevant Drugs in Friedreich's Ataxia**

Principal Investigator: Chad Heatwole MD,
University of Rochester, New York

**Funding Period: 10th March 2022 – 28th February 2023**
**(With possible 2nd year extension)**

Patients with Friedreich's Ataxia (FA) experience a variety of life-altering symptoms. As new therapies and clinical trials are planned for FA, it is important for researchers, clinicians, patients, and regulatory agencies to have clinical trial tools that are capable of detecting meaningful changes in the symptoms and issues that are most important to patients. Dr. Heatwole previously developed two state-of-the-art outcome measures for patients with FA (The FA Health Indices). The first instrument, the Friedreich's Ataxia Health Index (FA-HI), measures symptomatic burden using the perspective of the patient. The second instrument, the Friedreich's Ataxia Caregiver Reported Health Index (FACR-HI), measures symptomatic burden in younger children with FA and is completed by caregivers. Together, these instruments provide a mechanism for a patient's or caregiver's perception of the effectiveness of a therapy to be recorded and utilized during a clinical trial. While these instruments are highly reliable, versatile, multifaceted, and relevant to FA patients, they have not yet been evaluated in longitudinal studies. Such assessments are necessary to complete the validation process for the instruments, satisfy FDA guidance criteria for their use in drug-labelling claims, optimize the responsiveness of the instruments, and prepare them for global use as relevant markers of symptomatic disease burden.
This research will satisfy existing needs by developing, validating, assessing, and optimizing the responsiveness, relevance, performance, and usability of the FA-Health Indices. Dr. Heatwole's group will accomplish this using accepted methodology and the parallel utilization of the FA-Health Indices in: 1) An 18-month longitudinal validation study utilizing the FA Global Patient Registry; and 2) The ongoing Friedreich's Ataxia Clinical Outcome Measures Study (FACOMS). In addition, natural history data in FA will be collected and analysed. These data will: 1) demonstrate how disease progresses over time in FA, 2) identify which areas of FA symptomatic burden progress the fastest, and 3) determine which demographic features are associated with a faster or slower progression of disease. Through this research, these investigators will also generate responsiveness data and performance metrics for the FA-Heath Indices and their subscales to assist in the design of future clinical studies. At the completion of this work, the FA research community will have two fully validated and patient-centred outcome measures to promote the development of meaningful therapies in FA.

**Investigating proprioceptor development and function in Friedreich's ataxia**

Principal Investigator: Professor Mirella Dottori PhD,
University of Wollongong, Wollongong

**Funding Period: 14th May 2022 – 13th May 2023**
**(With possible 2nd year extension)**

A deficiency in proprioception, the perception of the body position and movement, is one of the earliest symptoms observed in Friedreich ataxia (FA). The loss of proprioception is associated with prominent neurodegeneration in proprioceptor sensory neurons and within the cerebellum. A major question in FA research is 'when' does the proprioceptor impairment start and what is the mechanism underlying this in terms of having reduced Frataxin expression. There is some evidence to suggest that the defect in proprioceptor function is genetically determined rather than progressive post symptom onset. Other studies have reported that increased Frataxin levels is associated with proprioceptor/sensory neuronal differentiation, suggesting that low frataxin levels may impact proprioceptor development. This project aims to understand the neurodevelopment and neurodegenerative changes of FA and their implications for pathogenesis and therapies. Specifically, Dr. Dottori will use stem cells generated from FA patients to produce proprioceptor neurons as a model to investigate the mechanisms underlying proprioceptor dysfunction in FA. This is a necessary first step to determine 'when' and 'how' FA proprioception deterioration begins and when and how this can be halted and/or rescued by increasing Frataxin expression and determine the appropriate timing of treatment.

# FARA AMBASSADORS

Get to know our inspiring fara Ambassadors by reading their stories on the following pages.

We would like to thank our Ambassadors for their continued awareness and fundraising, advocacy and support of all things fara and FA. Their positivity and willingness to share their stories and help others in the FA community is greatly admired and appreciated.



# MEET LEAH ALSTIN

Hi, my name is Leah Alstin and I live in Geelong, Victoria. I was born in 1983, and I am married with two beautiful young children. I was diagnosed with Friedreich Ataxia at the age of 17.

When I was around 15, I started to 'slow down' when playing sport, something I loved. At 17 I felt off balance when going downstairs so my mum took me to the doctor and the rest is history.

I went to university and studied primary school teaching.
I partied hard and did all the things that a young girl does. I tried to block FA out as much as I could, however it was there! In my mind all the time. I was afraid of what the future may hold.

I met my partner, got married, had our children and then I started to willingly allow FA into my life. I now use a walking frame and have learnt to be kind to my body. It's been a long process, but I feel I am finally at peace (kind of) with FA and life is so much easier! I am so honoured and proud to be a fara ambassador. The future is exciting!

## MEET
## KERRY BENSON

Hi, my name is Kerry Benson and I live in Adelaide, SA. I was born in 1967, and I am married with two adult daughters, and five grandchildren. I was diagnosed with Friedreich Ataxia (FA)
at 31 years of age.

Those early days of diagnosis were incredibly frightening as I had no idea how quickly things would or wouldn't progress. There wasn't Facebook to reach out and get support from other FA Groups. I tend to cope by ignoring the FA situation as much as I can. I still work full time and although I was using a walking frame at work, I found I had difficulty keeping up with the pace in the office, so now I use a wheelchair in the office and a mobility scooter outdoors.

FA is a constant rollercoaster of emotions each time we realise we're declining a little bit more. It's ok not to be ok, (just try hard not to unpack your bags and stay depressed) but take the time to accept the change and then move on with new gusto!

I'm excited to be a fara ambassador because I'd like to help others who are newly diagnosed realise they can still have a very fulfilling and rewarding life. FA changes things physically but enables us to grow in other ways. I'm not the quiet, shy girl anymore. I stand up for myself and others. I live my life with positivity and try to share this outlook with everyone.



## MEET
## ASHLEE DOLBY

My name is Ashlee, I'm from Melbourne, Victoria and was diagnosed with FA when I had just turned 28. Although it was considered a late diagnosis, I developed symptoms of FA nearly 10 years prior to that. I was clumsy and uncoordinated growing up, needed to use a handrail going up and down stairs and it progressed quite slowly. I saw a neurologist when I was 20 who didn't order any tests or think it was anything to be concerned about. He told me to come back if it got worse.

It took me nearly 7 years to go back after many years of denial. It took a long time to get a diagnosis after seeing a second neurologist; almost one year after numerous tests I was finally introduced to FA.

I currently work part time and try to stay fit and active by keeping up a regular routine of physiotherapy, Pilates and hydrotherapy. Routine really makes a difference! I currently use a mixture of mobility aids and will pick one depending on where I'm going, what I'll be doing and how far I have to travel. I use a walker the majority of the time, have a 2-in-1 chair/walker which is great for travel and 2 different scooters. Having options is great! If you're thinking about getting a mobility aid, get one, they're wonderful tools to access the world.

# MEET
# SAM DWYER

My name is Samantha Dwyer, but everyone calls me Sam or Sammy and I live in Brisbane, Queensland. I was diagnosed at 10 years old following the diagnosis of my older sister. We have no other siblings, so we often say our parents hit the jackpot with the two of us having FA!

At the time of diagnosis, I was showing no symptoms but after investigation we found I had scoliosis and I had a spinal fusion. I started having trouble walking within a few years and by the age of 15 I had to get a walking frame. Dealing with the onset of FA during high school is difficult (understatement of the year) but it shaped me into the person I am today.

I was very stubborn (I think it's an FAer trait…) and refused to use a wheelchair for a long time because I wanted to keep my independence. However, at 19 I finally bit the bullet and started using a wheelchair. It was challenging to get used to and be ok with it, but it allowed me to go to university and start fulfilling my dreams of travelling overseas! After graduating, I worked in my parent's travel agency and then marketing. I started my own business of social media marketing. Now I do content creation – blogging, making videos, etc. I also just finished writing my autobiography. I live independently in the city. I love the gym, my little dog and rock climbing. I am so proud to be a fara ambassador because I know the things we can achieve together are endless.



# MEET
# NICK HEPPER

My name is Nick Hepper and I live in Adelaide, South Australia. I was diagnosed with FA at the age of 21.

I was very active at the time, training to become an outdoor instructor. I was bush walking, kayaking and specialising in rock climbing when I noticed my balance would worsen when I was exhausted from these activities.

I was told upon diagnosis to give up this career and find another career which FA could be a part of. I worked in the outdoor industry for a number of years after my diagnosis and I tried as hard as I could to block out FA in those early years.

As my balance worsened, I had to give up the outdoor work and switch to outdoor retail. At age 25 I decided that I was going to use what physical ability I have to achieve something that I could be proud of and simultaneously help the FA community.

I am so proud to be an fara ambassador. I am very positive about FA's future, and I think we have some very exciting times ahead!

# MEET FIONA LAMOND

Growing up, there was a question that really bugged me – what was it that I was doing differently to everyone else? There must have been a trick to life in general that I just didn't get. The answer stared out at me from every TV show and movie on in the nineties - I was a nerd. I was uncoordinated, I fell a lot, I loved to read, physical effort was something I avoided like the plague.

When I was ten my mum was convinced that I must have had some kind of stress induced asthma. There were doctors' appointments and tests, and then a diagnosis of hypertrophic cardiomyopathy. Aha! That must have been tied to the clumsiness – kinda hard to be coordinated when your heart is making you tired … right? But just before my eleventh birthday I got Guillain–Barrè syndrome, a rare virus that causes the immune system to attack the peripheral nerves. During the recovery process, I was getting a great deal of attention from neurologists. One, in particular, noticed that once I had got back to normal – my normal wasn't actually normal.

Fortunately, earlier that year a blood test had been developed for Friedreich Ataxia. It was revealed that my parents each carry the FA gene, my younger brother didn't get the FA gene from either of them, but I got the FA gene from them both. At 11 and through my teens it seemed so abstract, and now in my 30's - with 2 uni degrees, travelling and volunteering - I'm planning on a blowout 42nd birthday celebration. Having FA has me living a very imbalanced life physically and emotionally. FA can claim the physical wobbles, however I lay claim to how I've reacted to them.



# MEET CAITLIN MAYNARD

My name is Caitlin Maynard, and I live in Sydney, NSW. I was born in Somerset, England in 1995, and have lived all over the world since. I moved to Sydney in 2018 with my parents and boyfriend and immediately loved how friendly and accessible it is here. I was diagnosed with Friedreich Ataxia in 2013, after showing symptoms for a little over two years. The appointment where I was told my diagnosis was the first time me and my family had heard of FA. I was diagnosed a few months after I graduated from high school, and one month after I started university. The shock of being diagnosed with FA stopped me in my tracks a bit and I became unsure about what I wanted to do and study, so I left university and moved back in with my parents.

Before my diagnosis and as I grew up, I participated in sports and drama programs. Most of that has stopped now that I am more wheelchair dependant, but I am still managing to do lots of physio and Pilates and even some writing.

I started showing signs (mainly fatigue and loss of balance) when I was 16 and my family was living in London. We were living in a house with four stories, which wasn't easy for someone who was having an issue with stairs but didn't know why. My sister and I had rooms on the top floor, and the kitchen was sixty stairs away from the bedroom! (Maybe the fact that I always counted how many stairs I had to go up and down was another sign...) I would always text my parents asking about meal times instead of going up and down the stairs. I managed to find little shortcuts like this to try and conserve my energy and possibly conceal how exhausted I was.

I am now living in Sydney with my wonderful parents, my great partner, my sweet cat Magnolia, and my new Aussie pup Mr. Bojangles!

# MEET DAKOTA MEIKLE

Hi, my name is Dakota Meikle and I live in Brisbane, Queensland. I'm 25 years old, was diagnosed with Friedreich Ataxia 10 years ago. I live with my husband of three years and our three fur-babies.

I was diagnosed during high school, which was really hard for me, but I have always kept a really tight community of support people around me to lean on.

When I was diagnosed at 15, I was made to feel that within ten years I would be 'stuck' in a wheelchair and would not be able to achieve anything in my life. I am glad to report that over the past ten years I have been busy graduating with my Bachelor of Education, getting married, beginning my Master of Education while working full time as a teacher.

A big passion of mine is spreading awareness of what life with a disability is really like. Contrary to my 15-year-old self's belief – using a wheelchair does not feel like being 'stuck' in a wheelchair. When I began using a wheelchair a few years ago it was actually a very freeing experience.

My wheelchair has given me the opportunity to stay independent and to continue to work, study and do the other things I love. I also enjoy pushing societal norms of the ideas and expectations that are held of people with disabilities; the things we do and the kind of lives we lead.



# MEET NICK ROUSCH

Hello, my name is Nick Rousch and I live in Wollongong NSW. In my youth, I represented Illawarra soccer, was an A-grade tennis player and similarly fortunate to represent NSW in cross-country running.

Although now in a wheelchair, I have kept myself fit, strong and relatively healthy via the gym five days per week. In addition, I have been able to maintain being ambulatory utilising the treadmill and harness/frame combination. My weight-bearing is also extended to a stand-up hoist at home.

My sporting competitive nature is still on display with Boccia (similar to bowling, though in a wheelchair). I have also been working in the Private Health industry for over 25 years. The chronic, degenerative and progressive nature of the condition is a problem but can instil a sense of empowerment and maturity in you, with words such as positive, proactive, structured, flexible, regimented, timely, organised, disciplined, careful, gym-junkie coming to mind.

My current progression is best described as slow progression. I am hopeful this can be eradicated and reversed!

My father, Peter Rousch is the founder of fara in its old format, while my sister Emma Hampton is a current board member and part of a great team! I'm proud to be associated with fara australia.

# CORPORATE SUPPORTERS & SIGNIFICANT DONORS

We are incredibly grateful to have received in kind support from brand and design agency Nice Monday who assist us with many of our fundraising campaigns and design requirements as well as the fundraising platform Grassrootz and event management & fundraising platform Givergy.

In the wake of the COVID-19 Pandemic, the financial support and commitment of our event sponsors and matching donors has been critical to us achieving our Mission. Our thanks to the following amazing partner organisations:

Throughout the year, in addition to our corporate partners, we enjoy the generous support of individual donors, Family Trusts and Foundations. Those acknowledged here contributed $10,000 or more to FA research in 2021 / 2022:

**Mrs Glenda Bird and Family**
**Bernadette Watson**
**The Ian Watson Foundation**
**Robert Bray**
**TARF>fa**
**FAAV**

# HOW TO GET INVOLVED

There are many ways you can get involved and help improve the lives of those living with FA.

- Sign up to our e-newsletter and keep up to date with the research we fund, national and local fundraising events, how to support our sponsors and hear inspiring stories from our FA community.

- Join us and engage on social media;
  Facebook - @faraaustralia & @LendUsSomeMuscle
  Instagram - @fara_australia & @lend_us_some_muscle
  LinkedIn - @faraAustralia – Friedreich Ataxia Research Association.

- Join the GEM Club and 'Give Every Month' with an automatic donation: https://www.fara.org.au/gem-club

- Set up and run your own community fundraising event with family, friends or work colleagues. Anything from a dinner party to golf day, physical challenge or social club morning tea…whatever you like! https://www.fara.org.au/new-page-1

- Attend a fara GALA held in Brisbane, Melbourne or Sydney.

- Leave a legacy that will benefit future generations by making a bequest to fara in your Will. https://www.fara.org.au/pageb

- Join in one of our annual fundraising events such as Lend Us Some Muscle in May or the November Giving Day For FA. You'll find all the details by staying connected on our social media or through our e-newsletter.

Friedreich Ataxia Research Association
PO Box 210, Elsternwick  VIC 3185
fara.org.au