ROBINSON RESEARCH INSTITUTE DEVELOPMENT PROGRAM

Sustaining and enhancing value

Many serious childhood conditions including autism, asthma, allergy, obesity and some cancers arise in the earliest stages of life. Parents' lifestyle, nutrition and environmental exposures, as well as pregnancy disorders, all affect how the fetus grows, potentially having lifelong health impacts.

At the Robinson Research Institute, our focus is addressing the reproductive and early life origins of health and disease.

Early life research concentrates on conception and pregnancy. As the preconception period is critical for a healthy pregnancy and establishing the health trajectory of the developing fetus, we also consider the health, environment and social circumstances of prospective parents.

Our research is novel in its scope, including the critical period prior to conception. We have found that the greatest potential for lifetime health, free from chronic disease in adulthood, is attainable through preventative approaches, beginning in the earliest stages of life. Our research is novel in its scope, including the critical period around conception. In both parents, the period prior to pregnancy is a top priority for ensuring best outcomes for fertility, healthy pregnancy, and child development.

Research discoveries and clinical trials at the Robinson Research Institute have contributed greatly to health awareness and advancing medical practice, but there is still significant work to be done to improve health and wellbeing of children and families.

To provide all children with the greatest chance to reach their true potential, the Institute is seeking your partnership and investment in our research.

The Robinson Research Institute

VISION

Achieve life-time health for all children and families, through research excellence.

MISSION

To deliver world-class advances in knowledge of human reproduction, pregnancy and child health, and to inform clinical care, policy, and practice that will improve health across generations and global communities.

GOALS

Goal 1: Deliver world-class research advances that collaboratively tackle the big questions in human reproduction, pregnancy and child health.

Goal 2: Communicate and engage to translate discoveries into policies and practices for advancement of health and wellbeing across generations

OUR HISTORY

The Robinson Research Institute has a proud history of delivering world-first research and programs. Today it continues to assimilate tools, expertise and mentoring for our researchers to be internationally competitive and address global health priorities.

The foundations for the Robinson Research Institute were laid down in 1958 when Professor Lloyd Cox was appointed as Foundation Professor for Obstetrics and Gynaecology at the Queen Elizabeth Hospital. His pioneering work built a research department where scientists and clinicians worked in partnership to tackle the most critical problems, and enable translation of research findings into effective clinical practice. By recruiting a number of international leaders in their fields, he and his successors created a world-leading research and clinical hub in Adelaide where many world-firsts occurred. Notable feats include the first sperm donor program and the first department to understand the role of the immune system in pregnancy.

Officially opened in 2008, the Institute was named after Emeritus Professor Jeffrey Robinson, Professor of Obstetrics and Gynaecology at the University of Adelaide from 1996-2006.

The Institute now combines extensive knowledge and achievements from the Department of Obstetrics and Gynaecology and the Department of Paediatrics.

As an interdisciplinary organisation, the Institute includes scientists, medical doctors, nurses, clinical trial researchers, public health specialists and health administrators, who work collaboratively with patients, consumers, governments and industry to find integrated solutions to some of the world's biggest health issues. Spanning discovery research in the lab, clinical research, population health and social science locally and internationally, our work improves lives by building evidence and translating research findings into improved care.

The Institute has 46 research groups and consistently publishes more than 400 peer-reviewed articles and reviews each year. The ranking of Excellence in Research for Australia has consistently ranked Paediatrics and Reproductive Health at the University of Adelaide as 5 out of 5, the only group in the country in this area to achieve this ranking.

We focus on events before birth, and how these impact health and disease in children after birth and throughout life.

OUR RESEARCH GROUPS

The Robinson Research Institute has 46 research groups, working with more than 350 researchers to deliver invaluable outcomes for children and families.

Better Start
Bioinformatics and Computational Biology
Biosocial Approaches to Health
Breast Biology and Cancer
Cerebral Palsy
Cognition, Nutrition and Neuroplasticity
Comparative Genome Biology
Critical and Ethical Mental Health
Cystic Fibrosis
Developmental Genetic Immunology
Diabetes
Early Development
Early Origins of Health and Disease
Endometriosis
Epigenetics and Genetics
Epigenetics Lab
Equity and Healthy Futures
Food, Nutrition and Health
Health of Women and Babies
Intellectual Disability
Life Course and Intergenerational Health
Lifelong Health Research
Machine Learning in Medicine
Medical Machine Learning
Mitochondrial Genetics
Molecular Immunology
Neonatal Medicine
Neural Development
Neurogenetics
Neuroimmunopharmacology Laboratory
Obesity and Metabolism
Obstetric Medicine
Ovarian Cell Biology
Ovarian and Reproductive Cancer
Ovarian Developmental Biology
Paediatric and Perinatal Epidemiology
Placental Development
Reproductive Endocrine and Medicine
Reproductive Biotechnology
Reproductive Cancer
Reproductive Immunology
Reproductive Success
Sleep Disorders
Vaccines and Infectious Disease
Vascular Health in Pregnancy
Vascular Immunology of Pregnancy

OUR RESEARCH

The Robinson Research Institute seeks to improve the life-long health of children and families through pioneering research across four themes, starting from pre-conception.

Theme one: Fertility and Conception

One in six couples are diagnosed as clinically infertile, with nearly 1 in 25 children being conceived by IVF. Demand on IVF services is continuing to grow, costing Australians more than $360 million per year.

The aim of the Institute is to generate new knowledge of reproductive biology and to provide leadership in advancing reproductive medicine. Our research maximises fertility and pre-conception health to reduce the incidence of infertility and related reproductive conditions and diseases, and give greater control and informed choice for individuals to manage their reproductive potential.

Research focus:

- Expanding knowledge of the molecular and cellular biology of each phase of the reproductive cycle;
- Defining genetic and non-genetic mechanisms of epigenetic modification and developmental programming in gametes and embryos;
- Understanding the causes of fertility and subfertility and their relationship with health conditions, lifestyle choices and experiences;
- Reducing reliance on assisted reproductive technology and providing alternative options to IVF;
- Understanding the pathophysiological mechanisms of diseases that affect reproductive capability;
- Developing improved advice, interventions and treatments for infertility and reproductive diseases;
- Developing biomarkers and better treatments for cancers of the reproductive system; and
- Developing non-steroidal contraceptives.

Theme two: Pregnancy and Birth

Pregnancy complications are common for expectant mothers, with a quarter of Australian pregnancies affected by one or more conditions; including preeclampsia, preterm birth, fetal growth restriction or gestational diabetes.

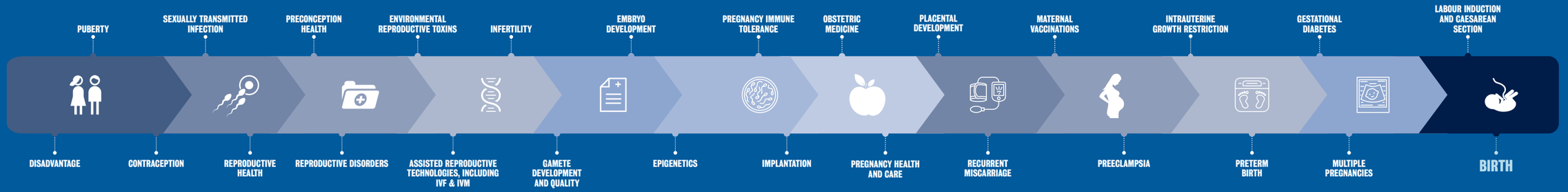
These complications can have serious life-long health implications for both the mother and baby, in addition to significant costs for individuals, families and communities.

Our aim is to improve outcomes and optimise health for mothers and babies by understanding the molecular, cellular and physiological mechanisms involved in placental and fetal growth, and maternal health in pregnancy, so we can devise effective interventions and treatments.

Research focus:

- Defining the biological pathways and processes enabling healthy pregnancy and fetal growth;
- Understanding the genetic and environmental factors and pathophysiological events leading to pregnancy complications;
- Biological and social factors influencing maternal health;
- Indigenous womens' health and the special challenges facing disadvantaged women;
- The maternal immune response to implantation and the immune adaptations allowing placental formation;
- Placental development, its vascular supply and nutrient transport function; and
- The immune and inflammatory mechanisms controlling the timing of birth and disposing some women to preterm birth.

Our researchers are addressing how events before birth...



Theme three: Early Origins of Health

The health of every child is profoundly influenced by events in early life, with environment determining the trajectory of future metabolic and cardiovascular health, immune and reproductive health, and neurological function.

Parental health and well-being prior to conception, during pregnancy and in early postnatal life influences this crucial early environment.

Through our research we seek to understand the biological mechanisms underlying these links. This is essential to developing effective interventions, identifying early prognostic markers of risk and defining optimal parental health and lifestyle. This knowledge is needed to inform pregnancy care guidelines and public health policies and their application.

Research focus:

- Defining the role of factors that affect early development, including poor nutrition, lack of exercise, obesity, diabetes, asthma, infection and inflammation, shift work and stress;
- Developing interventions that can be administered during pregnancy to improve the life-long health of the infant;
- Understanding why even late preterm babies are at increased risk of impaired neurological function in childhood, and developing effective interventions;
- Uncovering the impact of disadvantage in developmental programming and life-long health;
- Investigating how paternal obesity and poor diet programs obesity and impaired metabolic health in the next two generations of offspring;
- Utilising our knowledge to inform pregnancy care guidelines and public health policy; and
- Understanding the early life environments that program asthma and allergy development.
- Defining genes and environmental factors that cause neurological impairment and autism in children.

Theme four: Child and Adolescent Health

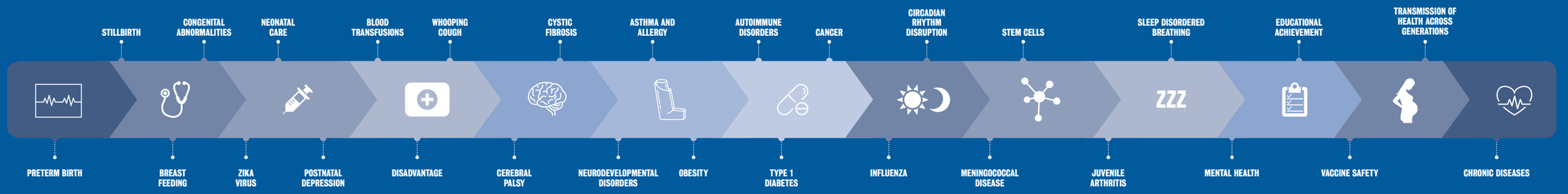
Many chronic physical and mental disorders originate in childhood and some of these, particularly non-communicable diseases, are increasingly prevalent. We need to develop safe and effective interventions that, where possible, prevent disease and can be administered in early life.

The Institute collaborates with world-leading clinicians and researchers who are working to prevent, detect and treat serious childhood diseases, many of which are known to be influenced by early life exposures and experience, to improve the health of all children and adolescents.

Research focus:

- Improving the effectiveness of immunisation to prevent serious infections in children;
- Establishing better treatments for diabetes, sleep and neurological disorders, allergies, joint disease and cystic fibrosis;
- Identifying biomarkers to ensure early diagnosis and treatment of autoimmune disease, allergies and asthma;
- Defining the genetics of intellectual disability, cerebral palsy, and epilepsy to provide targets for new treatment;
- Preventing childhood diabetes and obesity;
- Strengthening the mental health of mothers, young children and adolescents;
- Understanding the serious implications of generational disadvantage and working with government to address these issues; and
- Identifying novel biomarkers of immune function in children to predict and diagnose chronic diseases sooner.

By focusing our united research efforts, the Robinson Research Institute strives to understand how we can best protect current and future generations from disease, and to develop early interventions to ensure all children have the best start to life.



... shape the lifelong health of our children.

FUNDING PRIORITIES

The Robinson Research Institute improves the health and wellbeing of families around the globe through preventative interventions; and reduces health inequality and the economic burden of chronic disease and disability.

Having one of the best research reputations requires secure and stable funding; particularly as government support for medical research continues to decline, with only around one in ten grants submitted receiving funding.

A research endowment fund will enable consistent financial support for the delivery of world-class advances in human reproduction, pregnancy and child health and improved health for families across generations.

Development of high-quality research projects and programs

The Robinson Research Institute supports the implementation of relevant research projects and programs that attract competitive research funding from a wide range of national, international, government, industry and philanthropic funding agencies. However, prior to being competitive for large research funding, research ideas and projects must go through a rigorous process of early development.

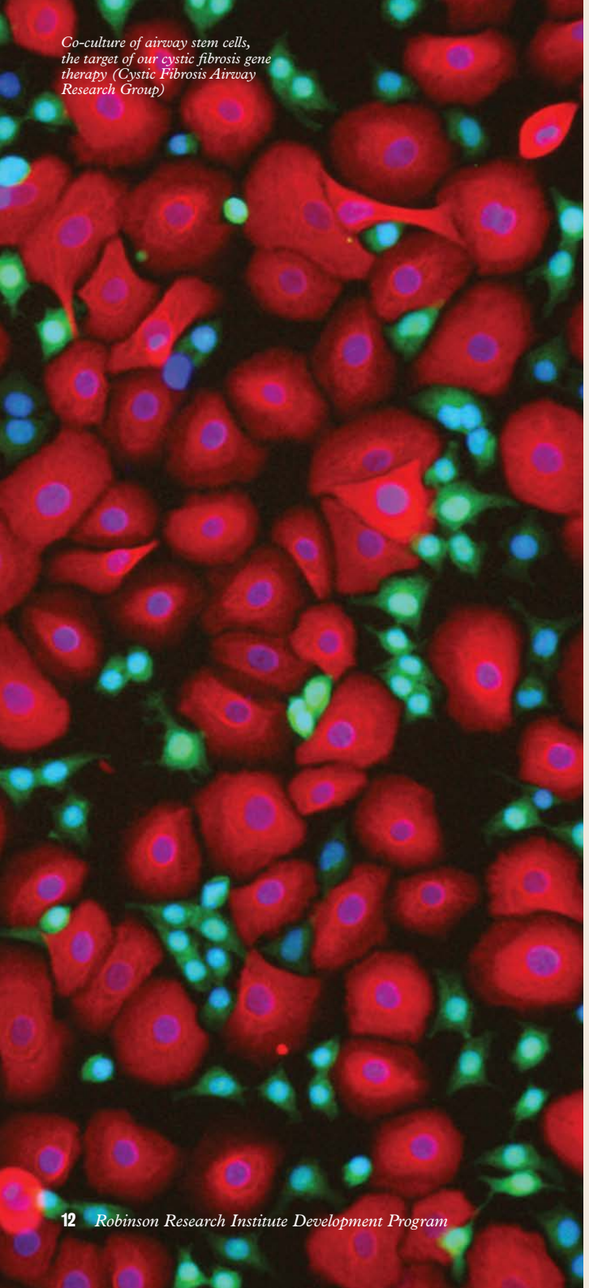
These preliminary activities strengthen the research proposal which is essential for securing large-scale funding in a competitive market. However, with limited funds available, only a small number of new ideas can be supported each year. Consequently, the Institute has developed internal funding programs that support innovative ideas to develop to a stage where they are competitive for larger scale funding. These include:.

- **Innovation Seed Funding:** Allows researchers to pursue ideas and turn into reality, seek expert guidance, establish a track record to secure potential long-term funding. This is achieved through pilot studies, stakeholder engagement, proof of concept studies, and literature reviews. Additionally, rigorous peer reviews are undertaken which challenge concepts, ideas and methodology from suitable Institute members. *Funding: $30,000 to $50,000 per project*
- **Facilitated Project Development:** Support and facilitate the development of research from initial concept to design, planning and writing, iterative refinement, peer review and partner and stakeholder engagement. The grant program ensures the initial ideas and assumptions are of a high calibre, through facilitated workshops, including pitching sessions, before further work is spent on fleshing out methodology and writing grant applications. Additional workshops include persuasive writing, engaging the community and stakeholder analysis. Funding is provided relative to the scale of the opportunity. *Funding: $10,000 to $100,000 per project*

Proposal

To set up an endowment fund of $8 million which will enable the Institute to invest in fundamental research projects that provide insight and advanced solutions for major health conditions ranging from infertility, preterm birth and preeclampsia, through to debilitating childhood conditions including cystic fibrosis, diabetes, asthma, and infectious disease.

Annual cost $400,000



Co-culture of airway stem cells, the target of our cystic fibrosis gene therapy (Cystic Fibrosis Airway Research Group)

Developing quality researchers

The Institute facilitates and supports the development of the next generation of research leaders including PhD students, early career and mid-career researchers.

Relying solely on highly competitive and unpredictable grants to fund research projects makes it challenging to provide a long-term commitment to high performing researchers.

A guaranteed source of funding would support the Institute in attracting and retaining quality researchers at all career stages, allowing them to focus on comprehensively tackling important research questions.

- Career Development Fellowship: Provides the salary of an Emerging Star early career researcher for one year. *Annual cost $100,000.*
- Career Development Program: Supports the development of early and mid-career researchers, particularly towards them achieving independent research fellowship funding. *Annual cost $80,000.*

Proposal

An endowment of $3.6 million would make a significant difference in the Institute's ability to invest in the development of the next generation of researchers and their search for answers to the most pressing reproductive, pregnancy and child health needs.

Annual cost $180,000

Environmental, pharmaceutical, diet, social, household chemical and other exposures before birth and in early life can impact later health and disease. The Robinson Research Institute's research strives to understand the mechanisms by which this occurs, so we can protect future generations.

Building research collaboration and translation

Quality research and research translation is reliant on participating in strong national and international collaborations. With more than 350 members partnering across many disciplines, including biomedical, clinical, social, and epidemiological science, the Institute generates new discoveries that improve reproductive health in parents and tackles and life-long health in children.

An increase in investment will enhance collaborations, enabling the Institute to make greater strides towards improved health for families across generations into the future.

- **Engaging Stakeholders:** These programs support the development of new research projects through partnerships with relevant stakeholders and health consumers. Joint ownership of the problem and solution across a diverse range of relevant groups, ensures projects are innovative, target the needs of those affected by the research outcomes, and findings are more easily translated. *Annual cost: $70,000*
- **Research collaboration:** A series of programs which enable researchers to present their findings at national and international conferences and meetings. This is essential for career development, networking with peers, and the development of collaborations. Additionally, funds are provided for exchanges between research institutions and bringing world leading researchers to Adelaide to build programs of research. *Annual cost: $60,000*

Proposal

An endowment of $2.6 million would support the Institute to implement this range of programs that build engagement and significantly improve the relevance of research projects and careers to key stakeholders and the broader community.

Annual cost $130,000

Your Fertility

One in six couples have difficulty conceiving, with around 35,000 women per year in Australia and New Zealand seeking fertility assistance. This places a significant financial and emotional burden on families.

To help individuals and couples increase their chances of conceiving and delivering a healthy baby without specialist medical assistance, the Robinson Research Institute, as part of the Fertility Coalition, developed the Your Fertility website and interactive tool.

This website suggests modifiable changes individuals can make to improve their reproductive health – thereby reducing reliance on fertility clinics and costly IVF intervention.

Yourfertility.org.au

MAKING A GIFT TO THE ROBINSON RESEARCH INSTITUTE

Any gift to the Robinson Research Institute is ring-fenced to support the development plan as outlined in this document.

Giving to the Robinson Research Institute allows for the opportunity to contribute to world-first life-changing research. Donors can singly choose to underwrite a substantial proportion of one of the Robinson Research Institute Evolution options.

Gifts of $25,000 or more qualify for Board of Benefactors at the point of pledge. They are particularly appropriate to the endowment funds which can, when combined with other gifts, make a significant contribution to support the Robinson Research Institute.

Amount	Instalment payable		Higher rate tax		
Gross Gift	Annually (five years)	Monthly (five years)	Net Cost 32.5%	Net Cost 37%	Net Cost 45%
$25,000	$5,000	$417	$16,825	$15,625	$13,750
$100,000	$20,000	$1,667	$67,300	$62,500	$55,000
$250,000	$50,000	$4,167	$168,250	$156,250	$137,500

The above table shows the giving costs for Board of Benefactors and above, with the implications of higher rate tax relief and gifts made over time.

ENDOWMENT SUMMARY

Robinson Research Institute Development Plan Annual Endowment

Development Plan Items	Annual cost	Endowment cost
Development of high-quality research projects and programs		
Innovation Seed Funding	$270,000	$5,400,000
Facilitated Project Development	$130,000	$2,600,000
	$400,000	**$8,000,000**
Developing quality researchers		
Career Development Fellowship	$100,000	$2,000,000
Career Development Program	$80,000	$1,600,000
	$180,000	**$3,600,000**
Building research collaboration and translation		
Engaging Stakeholders	$70,000	$1,400,000
Research Collaboration	$60,000	$1,200,000
	$130,000	**$2,600,000**

The development program and broader needs of the Institute may be subject to change over time. The Robinson Research Institute Endowment Fund will be held in perpetuity to support those plans and needs, in accordance with the fund rules, which are available on request.

FOR FURTHER ENQUIRIES

University of Adelaide Development
The University of Adelaide SA 5005 Australia

TELEPHONE +61 8 8313 5800

EMAIL development@adelaide.edu.au

WEB adelaide.edu.au/robinson-research-institute

SOUTH AUSTRALIA