

Part 6

Science and Industry Endowment Fund

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Trustee's report

The Science and Industry Endowment Fund (SIEF) invests in science that contributes to Australia's future. I'm delighted to present the 2018–19 report of SIEF's important role in helping to solve the greatest challenges through innovative science and technology.

This year, SIEF has supported fundamental research into new paradigms for more sustainable use of resources; tactical research that aims to fast-track solutions to national problems; and support for high-quality infrastructure; just to name a few.

SIEF's commitment to addressing our national priorities has been strengthened this year through collaboration and partnerships, funding for research breakthroughs, and its receipt of two new gifts, in addition to the CSIRO Gift and New South Wales Endowment already underway.

CSIRO Gift

The CSIRO Gift funds the Experimental Development Program (EDP) among others, to help research projects attract industry investment and commercialise their technology. Five EDP projects were completed this year, including Megasonics and Going for Gold.

The Megasonics project funded a pilot olive oil extraction plant at an industrial scale demonstrating that using high-frequency ultrasound standing waves increases efficiencies in the production system while maintaining a quality end product. This is a great result for producers as they derive greater profitability from their product.

Going for Gold supported the construction and operation of a mobile demonstration plant that recovered gold using non-toxic products from various gold ores in the field, at scale. The products have the potential to disrupt the gold industry by replacing highly toxic cyanide, currently the industry standard method, thus reducing the industry's environmental impact. This project is expected to increase the economic value of gold recovery markets, with an estimated \$3 billion per year of additional gold production in Australia through increased efficiencies of gold recovery practices.

Collaboration is a priority for SIEF through the CSIRO Gift. It is extremely pleasing to see how SIEF funding is providing significant and tangible benefits to Australian and international research through collaboration. One of SIEF's Research Infrastructure programs is a case in point. The Perth Advanced Resource Characterisation Facility is a collaborative partnership with the University of Western Australia, Curtin University and CSIRO. A SIEF grant of \$12.4 million helped fund the acquisition of three keystone assets: Maia Mapper, NanoSIMS and Atom Probe, to enable metre to atomic scale analysis of rock. The facility, now fully operational, is experiencing high demand for the use of its keystone assets. Publications indicate that the facility is being used for its intended purposes of geology and mineralogy research, but is also being sought after by national and international teams for environmental and biomedical research.

The STEM+ Business Fellowship program is also proving to be a highly successful collaborative initiative. Delivered by CSIRO's SME Connect team, its purpose is to embed early career researchers into an industrial workplace environment over a two-to-three-year period to break down the cultural divide between researchers and small to medium-sized enterprises (SMEs). The program provides these early career researchers experience working in industry and fostering innovation. To date, 32 researchers have been funded to work with SMEs in projects with universities and research organisations. The impact of the program is becoming evident: at a House of Representatives Inquiry into Funding Australia's Research in 2018, our colleagues in the Innovative Research Universities network noted the program's streamlined and flexible approach and the benefits they have gained by working closely with industry partners.

As many of the activities supported by the CSIRO Gift are complete, or nearing completion, the funding landscape is changing. Our focus will now shift to our new gifts.

New gifts

In October, SIEF received a gift from National ICT Australia Ltd (NICTA) for the Future National ICT Industry Platform program. The program is intended to promote the NICTA purposes by funding substantial scale, collaborative research in data and digital technologies. Recognising the power of digital technologies to accelerate the impact and scale of domain expertise, the now-completed pilot program addressed food provenance.

Three additional research activities have since commenced addressing supply chain integrity, energy, and data-driven cities.

In April 2019, SIEF received the Metcalf Gift through a significant and generous bequest from the late David Ross Metcalf who was a great inventor. Consistent with his wishes and in consultation with his family, I have directed this Gift to enable an additional 8–10 Fellows take part in the successful STEM+ Business Fellowship program, mentioned above, to deliver more solutions from science.

Following the original endowment made in 1926, this brings the total portfolio of gifts and endowments that SIEF manages to five. In my role as SIEF Trustee I am assisted by the advisory bodies and reviewers who generously contribute their time and expertise to SIEF to provide advice for funding decisions across the portfolio. I sincerely thank them for the advice they have provided me this year. With the establishment of the NICTA Gift, I would like to welcome the NICTA Program Advisory Council, and I look forward to working with them.

The future relies on innovation, and innovation is a team sport. Collaboration is key and SIEF's role in investing in Australian science, early career researchers, and cutting-edge technology ensures that we're able to work together to solve the nation's greatest challenges.

SIEF advisory bodies

CSIRO Gift Advisory Council Members

Emeritus Prof Alan Robson (Chair)
Dr Peter Riddles (Chair, EDP Review Panels)
Mr Nigel Poole
Dr Ezio Rizzardo
Prof Margaret Sheil
Prof Tom Spurling

Generation STEM Consultative Council (NSW Government Endowment)

Prof Brian Boyle (Chair)
Ms Maile Carnegie
Mr Simon Rowell
Mr Tom McGinness
Ms Gail Fulton
Mr Graeme Plato

NICTA Program Advisory Council

Ms Michelle Price
Ms Petra Andren
Mr John Paitaridis
Mr Adrian Turner



Dr Larry Marshall
SIEF Trustee

SIEF Performance report

The Science and Industry Endowment Fund (SIEF) is a separately constituted trust under the *Science and Industry Endowment Act 1926*. The Fund invests in science that addresses issues of national economic, industrial, environmental and cultural priority, and contributes to Australia's sustainable future by providing assistance:

- a. to persons engaged in scientific research
- b. in the training of students in scientific research.

CSIRO Chief Executive Dr Larry Marshall is Trustee of SIEF, and awards funding to parties across the national innovation system. The Trustee seeks independent advice and recommendations on funding of proposals. CSIRO manages the Fund on behalf of the Trustee.

SIEF was rejuvenated by a gift from CSIRO of \$150 million, resulting from the patented Fast WLAN technology in 2009 (CSIRO Gift). In June 2018, CSIRO supplemented this with an additional \$10 million, specifically to extend the Experimental Development Program. The CSIRO Board has approved to extend disbursement of the CSIRO Gifts until June 2026. Under the CSIRO Gift, some of the programs operate on a competitive basis, others by invitation on the basis of identified needs – all applications are considered against rigorous merit criteria.

In 2018–19, two CSIRO Gift programs ended – The Research Projects Program and the Joint CSIRO Macquarie University Chair in Wireless Communications. Over the life of the Research Projects Program, 17 projects were funded, and for every SIEF dollar invested, more than one and a half dollars was provided in co-investment from research organisations and industry partners. In the case of the Joint CSIRO Macquarie University Chair, SIEF's \$2 million investment was supplemented by Macquarie University and external contracts, grants and awards, totalling more than \$3 million in additional support.

Programs funded by the CSIRO Gift that remain active are the:

- Experimental Development Program (EDP)
- Promotion of Science Fellowships and Scholarships Program (competitive)
- SIEF-AAS Fellowships to the Lindau Nobel Laureate meeting and the Heidelberg Laureate Forum, facilitated by the Australian Academy of Science (competitive)
- SIEF STEM+ Business Fellowships, facilitated by CSIRO

Of these, the EDP and the SIEF-AAS Fellowships are the only programs currently open for applications.

In 2017, the New South Wales Department of Industry endowed \$25 million over 10 years to SIEF to attract, support, retain and train students from this state in the areas of STEM, thus increasing the supply of STEM-engaged students for the future workforce. CSIRO Education and Outreach helps to develop and implement programs for school students and those engaged in higher and vocational education.

The NSW Generation STEM program has established its strategic and operational plans, which lay the foundations for the program's direction and focus for the next three years. The program will take a place-based approach to delivery of STEM programs with the initial focus on Western Sydney.

In 2018 the Trustee of SIEF entered into a Deed of Gift with the National ICT Australia Pty Ltd (NICTA) for \$30 million over six years to establish the Future National ICT Industry Platform program. The program will support a series of grants to fund substantial scale research activities and projects on a collaborative basis in the field of data and digital technologies. Four programs of research have been funded to date; the pilot activity addressing food provenance was completed in February.

Research's contribution to solving issues of national importance can only be measured long term, but SIEF has developed several key performance indicators for its programs. As the funds available for allocation under the CSIRO Gift diminish and fewer new projects are started, some performance results will not change from previous years. New performance measures for Generation STEM and the NICTA programs will be added once they are established and operational.

This year, the CSIRO Gift programs continued to perform well. Table 6.1 provides an overview of the evidence against each performance criterion as published in the Portfolio Budget Statements, followed by more detailed analysis and evidence.

Table 6.1: Summary of performance

PERFORMANCE CRITERION	TARGET	RESULT
Evidence of outcomes and impacts of funded projects as demonstrated by case study impact assessment, independent reviews and evaluations	Minimum two case studies	G The impacts of the Going for Gold project include the disruption of the gold industry by providing environmental benefits through alternatives to the use of toxic cyanide, economic benefit to gold miners through using a low-cost technology, and unlocking stranded Australian gold deposits. The Hovermap EDP has enabled commercialisation of the technology through a company spun-out of CSIRO's Data61. Applications of Hovermap include mapping of mines, towers, power lines and construction sites. The impacts of the project include improving data collection service quality, increasing safety, reducing costs and driving growth in Australia's R&D, thus creating jobs and increased business opportunities.
Proportion of research projects involving more than one organisation	>94% projects involve more than one organisation	G Since 2009, 116 different organisations have formally collaborated in CSIRO Gift-funded projects, with many more associated but not formally under a SIEF Funding Agreement; more than 94% of projects involve more than one organisation. Activities under the new programs associated with the NSW Government Endowment and the NICTA Gift also include formal and informal involvement from multiple organisations.
Use of the research infrastructure as measured through time allocations	>60% operational time used, 20% usage in collaborative projects	G Commissioning of Research Infrastructure equipment is progressively occurring, with use of scheduled operating time reaching 80% for those on line. Use of Research Infrastructure equipment in collaborative projects is also increasing accounting for 36% of available time for commissioned equipment.
Technologies receiving ongoing commercialisation support from venture capital or industry sources after one year of completing the Experimental Development Program	Minimum of one case study	G The Going for Gold EDP identified both commercialisation opportunities and industry support as a result of the success of the project. The industry partner Eco Minerals Research Ltd has negotiated to commercialise the Going for Gold technology through its subsidiary company, Clean Mining Ltd. In addition, several companies have been assessing the technology's efficacy in extracting gold from their ores. The Hovermap EDP enabled the CSIRO Data61 project team to create a spin-out company called Emesent. It has successfully raised \$4.5 million in venture capital to commercialise Hovermap and is working with companies in a variety of applications.
Number of projects where additional STEM+ Business Fellowship funds are spent on research between the company and the STEM+ Fellow's host research team or with others	12	P Eleven projects in the STEM+ Business Fellowship program have attracted additional funds to support further research between the company and the STEM+ Fellow's host research team or with others, highlighting the catalytic role the program has had in encouraging SMEs to invest in research and development. Seven of these projects involve additional STEM+ Business Fellowship funds through new STEM+ Business projects or extensions of existing fellowships.

Green shading indicates positive progress for the year and the target has been achieved.

Purple shading indicates progress through the year was less than anticipated and continues to be closely monitored.

Evidence of outcomes and impacts of funded projects

We collaborated with Eco Minerals Research Ltd on the Going for Gold project²⁸ to construct a mobile gold processing demonstration plant in Menzies, Western Australia, to test CSIRO's non-toxic, environmentally friendly gold recovery products. The project demonstrated the effectiveness and application of CSIRO's thiosulphate-based recovery process to mine gold. The technology and vat leach process can be applied to a range of ore types for wider commercial uptake and adoption.

The technology and process will be of great benefit to smaller mining operators as it will enable uptake with a relatively low capital expenditure requirement; the costs of establishing a plant using a vat leach start from around \$3 million (capital expenditure required for a typical processing plant is about \$30 million). Being free of the regulatory hurdles involved when using cyanide is an added benefit. The flexibility gained by using a mobile processing facility allows miners to unlock gold deposits stranded by factors such as resource sizing and transportation costs.

Additionally, use of the demonstration plant as a gold processing research hub will provide opportunities to demonstrate the method on a greater range of ore types from other gold miners;



A gold ingot produced from the first gold extracted by the SIEF-funded demonstration plant.

enable equipment suppliers to trial and develop customer-driven solutions in collaboration with industry and researchers; and provide opportunities for research and training. These outcomes will underpin and drive the uptake of technology for commercialisation.

Hovermap²⁹ is a self-contained software and hardware system (payload) developed by CSIRO's Data61 that attaches to existing drones to provide omni-directional 3-D sensing and accurate LiDAR (light imaging, detection and ranging) mapping. The tool has capability to safely and efficiently inspect hard-to-reach assets and collect extremely high-fidelity data in previously unreachable places such as powerlines, warehouses and communications towers. The SIEF Experimental Development Program supported the Hovermap team to flight-test the technology in real-life situations and translate current prototypes into commercial products. This has resulted in the establishment of a CSIRO Data61 spin-out company called Emesent that is commercialising the technology.

The technology is being used for a range of applications including asset management in the construction and telecommunications industry for inspection and mapping of assets and buildings, forensic crime scene mapping, and underground mine mapping. The impact of this technology includes a reduction of costs and risks for governments and companies maintaining facilities and infrastructure as Hovermap can be used to monitor the condition of critical facilities and infrastructure, provide high-quality and accurate information and be used in areas where access is difficult or dangerous. This has the potential to make communities safer as barriers to asset assessment are removed, and damaged or aging infrastructure is detected and repaired or replaced. Hovermap will also benefit Australia as it will drive commercial growth in the international drone market and generate investment in Australian research and development, thus creating job growth and increased business opportunities.

²⁸ The Going for Gold case study is available at <https://sief.org.au/csiro-gift/what-has-been-funded/what-has-been-funded-experimental-development-program/going-for-gold/cyanide-free-non-toxic-gold-recovery-going-for-gold-case-study/>.

²⁹ The Hovermap case study is available at <https://sief.org.au/csiro-gift/what-has-been-funded/what-has-been-funded-experimental-development-program/hovermap/intelligent-lidar-mapping-and-a-navigating-system-for-drones-hovermap/>.

Proportion of projects involving more than one organisation

One of SIEF's primary objectives is to improve collaboration across the Australian Innovation System. Collaboration is critical for not just research (fostering communication, interaction and sharing of ideas), but also for improving the effectiveness of translating research outputs into innovation that delivers economic, environmental and social benefits. Since 2009, 116 different organisations have been formally involved in one or more CSIRO Gift-funded projects, representing Australian universities, governments, industry, SMEs and overseas organisations, meaning that 95 per cent of CSIRO Gift-supported activities involve more than one organisation. This collaboration helps Australian industry gain marketplace advantage by fostering creativity, developing new skills, transferring knowledge, managing risk and attracting aspiring investors and partners.

Over the life of SIEF-funded programs, the number of publications emerging directly from SIEF-funded activity has increased. From 2017–18 to 2018–19, publications output increased by 27 per cent, reflecting the maturity of the research projects. Co-authorship of publications reinforces collaboration and shows the strength of the collaborative relationships, as well as demonstrating that all contributing parties recognise the value of the research activity and its outputs.

Use of the research infrastructure as measured through time allocations

The sophisticated and complex sets of equipment funded under the SIEF Major Research Infrastructure Program represent significant infrastructure investments (\$31.6 million SIEF). As the equipment is progressively installed, tested and commissioned, use of scheduled operating time has met or exceeded the targets set. Notable highlights include greater than 100 per cent use of scheduled operating time in the Advanced Resource Characterisation Facility (ARCF) in Perth (a measure of greater than 100 per cent is due to after hours and weekend runs). Mass spectrometry equipment in the Centre for Genomics, Metabolomics and Bioinformatics (CGMB) in Canberra has also been in constant use, with more than 90 per cent utilisation.

The Monash MedTech facility is now fully functional, and use of the assets is increasing as projects begin, with operational time for the MR-PET, Hot Lab and tissue bioprinters approximately 50 per cent in 2018.

Collaboration has also been a key feature of the three Major Research Infrastructure projects. The three key acquisitions of the Perth ARCF have been in high demand for collaborative projects, with 40 per cent of projects collaborative and many including international research partners. Thirty-five research articles have been published thus far. Since launching in August, the Clayton MedTech facility has hosted 24 collaborative projects using the full suite of equipment available, and a successful ARC Linkage grant will use the facility's MR-PET equipment. The CGMB in Canberra is showing 20 per cent of equipment usage for collaborative projects with a partner, and an additional five per cent by non-partner collaborators. The CGMB is delivering on expectations that this activity will result in new areas of collaboration between the Australian National University (ANU) and CSIRO and the broader Canberra precinct. For example, a new Centre of Entrepreneurial AgriTech (CEAT) has been established (attracting ACT Government funding) and through this initiative, CSIRO, ANU and the Canberra Innovation Network will work towards a market face for small businesses and start-ups.

The SIEF Medium Equipment Program (MEP) was launched in 2017 and is designed to address a gap in funding for equipment priced in the approximate range of \$500,000 to \$4 million. Projects funded under this program (\$9.9 million) are progressing well and commissioning of assets is ongoing. For example, the Noble Gas Facility at the Waite Campus in Adelaide was a recipient of \$550,000 SIEF funding to acquire a high-resolution noble gas mass spectrometer that will be a valuable asset for researchers studying the continent's groundwater systems and contribute to the sophisticated science being applied to understand the effects to groundwater of further development in regional Australia. The new mass spectrometer is integrated within the Environmental Tracer Laboratory, making this a unique noble gas capability for water research in the Southern Hemisphere. It began operations in 2019.

The Marine National Facility received MEP funding from SIEF to purchase a Triaxus, a towed undulating CTD instrument used to collect vertical and horizontal profile measurements of the water column from the sea surface to a depth of 300 metres. Identified as a mission critical asset, this state-of-the-art carbon fibre instrument uses the latest fibre optic technologies and is towed up to two kilometres behind the research vessel *Investigator* (thus avoiding its wake), collecting data not possible with other instrumentation.

The Triaxus is fitted with a standard suite of sensors used to measure temperature, conductivity and depth, and supports an array of auxiliary sensors to measure dissolved oxygen and fluorescences, and to identify and count plankton, providing a highly flexible data collection instrument. The Triaxus is available to all Australian researchers and their international collaborators, who successfully apply for a voyage on *Investigator*.



The Triaxus deployed at sea.

Technologies receiving ongoing commercialisation support from venture capital or industry sources after one year of completing the Experimental Development Program

An impact assessment of the Going for Gold EDP has provided evidence of several outcomes achieved including: demonstrating the effectiveness of CSIRO's thiosulphate-based recovery process; demonstrating the application of technology to a range of ore types; and enabling take-up with a relatively low capital expenditure. An assessment of the Going for Gold EDP identified both commercialisation opportunities and industry support as a result of the success of the project. In June, the industry partner Eco Minerals Research Ltd, negotiated a commercial

arrangement to take the Going for Gold technology to market. In addition, several companies have been assessing the technology's efficacy in extracting gold from their ores.

As a result of the Hovermap EDP project, drone autonomy and data analytics company Emesent spun-out of CSIRO's Data61, was successfully established in November. It has raised \$4.5 million in venture capital to commercialise its first product – Hovermap. The company has engaged with companies in Australia, the United States, Canada, China and Japan in a variety of applications.

Number of projects where additional STEM+ Business Fellowship funds are spent on research between the company and the STEM+ Fellow's host research team or with others

The STEM+ Business Fellowship program continues to act as a catalyst for collaborative partnerships and investment by SMEs in both research and development, and early-career researchers. This year, 11 projects attracted additional business funds to support further research between the company and the STEM+ Fellow's host research team, or with others.

Participating SMEs have indicated a high level of satisfaction with the program, with many seeking additional projects through the program, and others seeking and engaging in partnerships further afield. Four STEM+ Business Fellowship companies and their partner universities have successfully applied for funding for two Australian Research Council (ARC) Industrial Transformation Research Hubs – an excellent indicator of deepening connections and collaborations between businesses and research organisations. Each of these consortia has been awarded funding of \$5 million for the 'ARC Research Hub for Driving Farming Productivity and Disease Prevention', to be administered by Griffith University, and the 'ARC Research Hub for Medicinal Agriculture', to be administered by La Trobe University.

Of the 11 projects which have resulted in additional funding, seven have successfully secured additional STEM+ Business Fellowship funds as SMEs have sought to capitalise on the original SIEF investment by extending fellowships from two to three years, or to create additional STEM+ Business Fellowship projects.



INDEPENDENT AUDITOR'S REPORT

To the Minister for Industry, Science and Technology

Opinion

In my opinion, the financial statements of the Science and Industry Endowment Fund for the year ended 30 June 2019 gives a true and fair view of the financial position of the Science and Industry Endowment Fund as at 30 June 2019 and its financial performance and cash flows for the year then ended in accordance with Australian Accounting Standards – Reduced Disclosure Requirements and the *Science and Industry Endowment Act 1926*.

The financial statements of the Science and Industry Endowment Fund, which I have audited, comprise the following statements as at 30 June 2019 and for the year then ended:

- Statement by the Trustee and Chief Finance Officer of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) as Service Provider to the Science and Industry Fund;
- Statement of Comprehensive Income;
- Statement of Financial Position;
- Statement of Changes in Equity;
- Statement of Cash Flow; and
- Notes to and forming part of the financial report.

Basis for opinion

I conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. My responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the financial statements* section of my report. I am independent of the Science and Industry Endowment Fund in accordance with the relevant ethical requirements for financial statement audits conducted by the Auditor-General and his delegates. These include the relevant independence requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* (the Code) to the extent that they are not in conflict with the *Auditor-General Act 1997*. I have also fulfilled my other responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Trustees's responsibility for the financial statements

The Trustee of the Science and Industry Endowment Fund is responsible for the preparation of the financial statements that give a true and fair view in accordance with Australian Accounting Standards – Reduced Disclosure Requirements. The Trustee is also responsible for such internal control as he determines is necessary to enable the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Trustee is responsible for assessing the ability of the Science and Industry Endowment Fund to continue as a going concern, taking into account whether the Science and Industry Endowment Fund's operations will cease as a result of an administrative restructure or for any other reason. The Trustee is also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the assessment indicates that it is not appropriate.

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Auditor's responsibilities for the audit of the financial statements

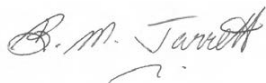
My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian National Audit Office Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Trustee's;
- conclude on the appropriateness of the Trustee's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the entity to cease to continue as a going concern; and
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Australian National Audit Office



Brandon Jarrett
Senior Executive Director
Delegate of the Auditor-General

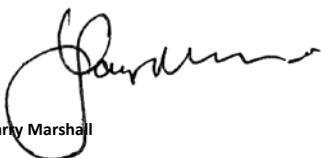
Canberra
9 August 2019

SCIENCE AND INDUSTRY ENDOWMENT FUND

STATEMENT BY TRUSTEE AND CHIEF FINANCE OFFICER OF COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION (CSIRO) AS SERVICE PROVIDER TO THE SCIENCE AND INDUSTRY ENDOWMENT FUND

In our opinion, the attached financial report for the year ended 30 June 2019 has been prepared based on properly maintained financial records and in accordance with Australian Accounting Standards and other mandatory financial reporting requirements in Australia, and give a true and fair view of the financial position of the Science and Industry Endowment Fund as at 30 June 2019 and of its performance for the year then ended.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Science and Industry Endowment Fund will be able to pay its debts as and when they become due and payable.



Lary Marshall

Trustee of the Science and
Industry Endowment Fund

9 August 2019



Tom Munyard

Chief Finance Officer of CSIRO
as service provider to the Science and Industry
Endowment Fund

9 August 2019

SCIENCE AND INDUSTRY ENDOWMENT FUND
STATEMENT OF COMPREHENSIVE INCOME
For the period ended as at 30 June 2019

	Notes	2019 \$	2018 \$
EXPENSES			
Scientific research grants	1	25,609,609	18,632,420
Service fee under services agreement with CSIRO		340,189	352,072
Audit fees		15,500	15,500
Other fees		398	450
Total expenses		25,965,696	19,000,442
LESS:			
REVENUE			
NICTA Gift	2	20,000,000	-
Metcalf bequest	2	1,037,633	-
CSIRO Gift	2	-	10,000,000
Interest	3	2,001,919	1,697,666
Total revenue		23,039,552	11,697,666
Deficit		(2,926,144)	(7,302,776)
Other comprehensive income		-	-
Total comprehensive loss		(2,926,144)	(7,302,776)

The above statement should be read in conjunction with the accompanying notes.

SCIENCE AND INDUSTRY ENDOWMENT FUND

STATEMENT OF FINANCIAL POSITION

For the period ended as at 30 June 2019

	Notes	2019 \$	2018 \$
ASSETS			
Current assets			
Cash and cash equivalents	4	65,017,563	68,181,236
Interest receivable	5	793,925	702,647
GST receivable	5	1,423,500	199,054
Total assets		67,234,988	69,082,937
LIABILITIES			
Current liabilities			
Payables			
Accrued grants payable	6	1,043,744	-
Shared service fee payable		122,270	87,819
Accrued audit fee		15,500	15,500
Total payables		1,181,514	103,319
Total liabilities		1,181,514	103,319
Net assets		66,053,474	68,979,618
EQUITY			
Contributed equity		200,000	200,000
Retained surplus		65,853,474	68,779,618
Total equity		66,053,474	68,979,618

The above statement should be read in conjunction with the accompanying notes.

SCIENCE AND INDUSTRY ENDOWMENT FUND

STATEMENT OF CHANGES IN EQUITY

For the period ended as at 30 June 2019

	Retained Surplus		Contributed Equity		Total Equity	
	2019	2018	2019	2018	2019	2018
	\$	\$	\$	\$	\$	\$
Opening Balance	68,779,618	76,082,394	200,000	200,000	68,979,618	76,282,394
Net deficit	(2,926,144)	(7,302,776)	-	-	(2,926,144)	(7,302,776)
Closing Balance	65,853,474	68,779,618	200,000	200,000	66,053,474	68,979,618

The above statement should be read in conjunction with the accompanying notes

SCIENCE AND INDUSTRY ENDOWMENT FUND

CASH FLOW STATEMENT

For the period ended as at 30 June 2019

	Notes	2019 \$	2018 \$
OPERATING ACTIVITIES			
Cash received			
NICTA Gift		20,000,000	-
Metcalf bequest		1,037,633	-
CSIRO Gift		-	10,000,000
Interest received		1,910,641	1,434,755
GST credits received		1,264,219	1,850,933
Total cash received		24,212,493	13,285,688
Cash used			
Payments to grantees		27,022,452	20,516,065
Other payments		353,316	392,473
Bank fees paid		398	450
Total cash used		27,376,166	20,908,988
Net cash used by operating activities	9	(3,163,673)	(7,623,300)
Net decrease in cash held		(3,163,673)	(7,623,300)
Cash at the beginning of the reporting period		68,181,236	75,804,536
Cash at the end of the reporting period		65,017,563	68,181,236

The above statement should be read in conjunction with the accompanying notes

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2019

Overview

The Science and Industry Endowment Fund (referred to as “the Fund”) was established under the *Science and Industry Endowment Act 1926* with the Trustee of the Fund being the CSIRO Chief Executive and is a not-for-profit entity. An appropriation of 100 000 pounds was received at the time the Fund was established. The principal activity of the Fund is to provide assistance to persons engaged in scientific research and in the training of students in scientific research.

In October 2009 the Minister for Innovation, Industry, Science and Research announced a gift of \$150 million to be donated by CSIRO to the Fund. The gift is intended to be used for scientific research for the purposes of assisting Australian industry, furthering the interests of the Australian community or contributing to the achievement of Australian national objectives. The gift was made subject to the terms of a Deed of Gift between the Trustee and CSIRO dated 15 October 2009. In June 2018, the CSIRO made a further gift of \$10 million to the Fund. This gift was also made subject to the terms of the Deed of Gift between the Trustee and CSIRO dated 15 October 2009. The total cash payments made in 2018-19 under the Deed of Gift was \$13,482,202 (GST exclusive).

In June 2017, the NSW Government acting through the NSW Department of Industry provided a \$25 million endowment to SIEF to create the NSW Generation STEM Program. The program will be delivered over a 10 year period and will implement activities including research, to increase the supply of STEM (science, technology, engineering and mathematics) skilled labour to meet the current and future needs of New South Wales. The total cash payments made in 2018-19 under the NSW Endowment were \$2,038,761 (GST exclusive).

In November and December 2018, National ICT Australia Limited (NICTA), a controlled entity of CSIRO, provided two gifts to SIEF in the total amount of \$20m to fund the Future National ICT Industry Platform Program. The program is a scale of research activities and projects that address challenges in the field of information and communications technology (ICT) and it is intended that the outcomes from the Program will benefit Australia by helping create new Australian technology-based industries and/or applied technology platforms that can reach global scale. The total payments made in 2018-19 under the Future National ICT Industry Platform Program were \$8,328,507 (GST exclusive).

In April 2019, SIEF received a bequest from the estate of the late David Ross Metcalf for \$1 million. The Trustee determined to use the bequest for industry/research engagement programs. The total cash payments made in 2018-19 was \$1,037,633 (GST exclusive).

In any one financial year a maximum amount of \$25 million exclusive of Goods and Services Tax (GST) can be disbursed from the Fund for the CSIRO GIFT, NSW Generation STEM Program and the Future National ICT Industry Platform Program. The total payments made in 2018-19 were \$24,887,103 (GST exclusive).

Basis of Preparation of the Financial Statements

The financial statements for the Fund are general purpose financial statements and are required by section 10 of the *Science and Industry Endowment Act 1926*. They have been prepared in accordance with Australian Accounting Standards and Interpretations – Reduced Disclosure Requirements issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial statements have been prepared on an accrual basis and are in accordance with the historical cost convention. No allowance is made for the effect of changing prices on the results or the financial position.

The financial statement is presented in Australian Dollars and values are rounded to the nearest dollar unless otherwise specified.

Significant Accounting Judgements and Estimates and New Accounting Standards

No accounting assumptions or estimates have been identified that have a significant impact on the amounts recorded in the financial statements.

The Fund has reviewed new standards, revised standards and interpretations/amending standards issued prior to the signing of the financial statements. They do not have a material effect to SIEF’s financial statements.

Events after the Reporting Period

The Trustee is not aware of any other significant events occurring after the reporting date that could impact on the financial report.

Taxation

The Fund is exempt from all forms of taxation except GST.

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2019

Note 1 Scientific Research Grants

	2019	2018
	\$	\$
Future National ICT Industry Platform Program	9,333,057	-
Research Infrastructure Investment	6,615,000	10,357,000
Special Research Program	1,440,000	-
Experimental Development Program	3,010,767	4,270,293
NSW Endowment Grant	2,000,000	650,000
Research Project Grants	400,000	888,224
Scholarships and Fellowships	2,810,785	2,167,022
Macquarie University Joint Chair In Wireless Communication	-	299,881
Total	25,609,609	18,632,420

The Fund is a subsidiary entity of the Commonwealth Scientific and Industrial Research Organisation (CSIRO). For the 2018-19 financial year, the Fund has recognised \$25.1m in grant expenses as transferred directly to CSIRO to support scientific research and infrastructure projects within CSIRO and/or collaborative projects with external organisations (2017-18: \$16m).

Note 2 Contributions Income

Contributions are recognised as income when the Fund obtains control of the contribution and the amount of the contribution can be measured reliably. Contributions are recognised at fair value of the contributions received or receivable. In 2017-18, the Fund received \$10m in contributions from the CSIRO. In 2018-19, the Fund received \$20m in contributions from NICTA and \$1.0m from the bequest from the estate of David Ross Metcalf. Further details about these contributions have been disclosed in the overview.

Note 3 Interest Revenue

Interest revenue is recognised using the effective interest method as set out in AASB 9 *Financial Instruments*.

Note 4 Cash and cash equivalents

	2019	2018
	\$	\$
Cash at bank	3,878,631	11,302,841
Term deposits	61,138,932	56,878,395
Total	65,017,563	68,181,236

Cash and cash equivalents include cash on hand and demand deposits in bank accounts with an original maturity of twelve months or less that are readily convertible to known amounts of cash and subject to insignificant risk of change in value. Cash is recognised at its nominal amount.

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2019

Note 5 Trade and other receivables

	2019	2018
	\$	\$
Interest receivable	793,925	702,647
GST receivable	1,423,500	199,054
Total receivables	2,217,425	901,701
Less impairment loss allowance	-	-
Total trade and other receivables	2,217,425	901,701

Trade receivables are financial assets held for collecting the contractual cash flows of the asset, where the cash flows are solely payments of principal and interest that are not provided at below-market interest rates. They are subsequently measured at amortised cost using the effective interest method adjusted for any loss allowance.

Note 6 Grants payable

Grants payable relates to grants where the milestone has been met, but are yet to be paid. These items will be paid in the first quarter 2019-20.

Note 7 Financial Instruments

	2019	2018
	\$	\$
Categories of Financial Instruments		
Financial assets under AASB 9		
Financial assets at amortised cost		
Cash and cash equivalents	65,017,563	68,181,236
Interest receivable	793,925	702,647
GST receivable	1,423,500	199,054
Total financial assets at amortised cost	67,234,988	69,082,937
Total financial assets	67,234,988	69,082,937

On implementation of AASB 9, there was no change in the measurement of financial assets under any category. Cash and cash equivalents and interest receivable were previously classified as held-to-maturity financial assets. GST receivable was previously classified as loans and receivables.

	2019	2018
	\$	\$
Financial liabilities		
Financial liabilities at amortised cost		
Grants payable	1,043,744	-
Shared service fee payable	122,270	87,819
Accrued audit fee	15,500	15,500
Total financial liabilities at amortised cost	1,181,514	103,319
Total financial liabilities	1,181,514	103,319

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2019

Note 8 Schedule of Commitments

The below table shows the monies SIEF is committed to pay on its executed grant funding agreements as at 30 June 2019, subject to grantees meeting funding milestones.

	2019	2018
	\$	\$
BY TYPE		
Grants commitments payable	34,639,956	14,111,011
GST receivable on grants payable	(3,149,087)	(1,282,819)
Total net commitments by type	31,490,869	12,828,192
BY MATURITY		
Grant commitments payable		
One year or less	11,163,299	10,191,852
From one to five years	15,831,657	3,259,159
More than five years	7,645,000	660,000
Total grants payable	34,639,956	14,111,011
GST commitments receivable		
One year or less	(1,014,845)	(926,532)
From one to five years	(1,439,242)	(296,287)
More than five years	(695,000)	(60,000)
Total commitments receivable	(3,149,087)	(1,282,819)
Net commitments by maturity	31,490,869	12,828,192

Note 9 Cash Flow Reconciliation

Reconciliation of operating surplus to net cash from/(used by) operating activities:

	2019	2018
	\$	\$
Operating deficit	(2,926,144)	(7,302,776)
Changes in assets and liabilities		
(Increase) in receivables	(1,315,724)	(295,623)
Increase/(decrease) in payables	1,078,195	(24,901)
Net cash used by operating activities	(3,163,673)	(7,623,300)

Note 10 Contingent Assets and Liabilities

No contingent assets or liabilities existed as at 30 June 2019 (2018: nil).

Note 11 Related Party Disclosures

The fund is a wholly controlled subsidiary of CSIRO. The trustee is the Chief Executive Officer of CSIRO who is remunerated through CSIRO and not paid an additional salary for his role as trustee of the fund. There were no transactions during the reporting period between the trustee and the fund. Related parties to this entity other than the trustee are other Australian Government entities.

Significant transactions with related parties can include the payment of grants, the purchase of goods and services. Given consideration to relationships with related entities, and transactions entered into during the reporting period by the entity, it has been determined that there are no related party transactions required to be separately disclosed. Grants are awarded based on assessment against a set of established selection criteria prior to approval. All eligible applications are assessed equally.