



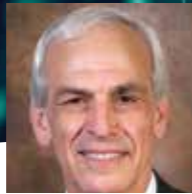
Australian Academy of
Technology & Engineering

Annual Review

2019–2020



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Professor Hugh Bradlow FTSE
ATSE President

No one can doubt that 2019/2020 has been one of the most disruptive years in the living memory of the post-war generation.

The bush fire season has thrown climate change into stark relief and increased the already substantial amount of work that the Academy has been doing on mitigation of, and adaption to, anthropogenic climate change. ATSE has been active in the energy debate by urging government to address the emissions from power generation and accelerate the uptake of renewable energy. While there is still much to be done, it is gratifying to see ATSE submissions come to fruition (such as the continued funding for ARENA – Australian Renewable Energy Agency – announced in the October 2020 budget).

However, even climate change has been shaded by the COVID-19 global pandemic. Technology has been significant in the response to the pandemic. The National Broadband Network (NBN) performed a huge role in enabling tele-working, tele-health and tele-education. Again, however, there is much more to be done, as highlighted by the ATSE Health Technology Readiness Report, *A New Prescription: preparing for a healthcare transformation* which, with exquisite timing, was launched

just as the pandemic began. The report identifies some of the key missing pieces in our health system such as the failure to successfully implement a fully interoperable electronic health record system. Critical functions such as contact tracing have been proven to be much more difficult with paper-based manual processes.

If there is anything positive to be taken out of the pandemic it is that we have all become used to using videoconferencing for our meetings. In many cases we have found that Fellows prefer video-based meetings, finding them more convenient and productive in terms of reaching outcomes. Our entire process for consultation on the new 2021-2023 ATSE strategy was done via Zoom and led to higher engagement with Fellows than we have ever achieved before. Approximately 22% of Fellows attended the strategy planning meetings.

Finally, this year we welcomed a new CEO, Kylie Walker, who has hit the ground running and ensured that our activities during this busy year have not missed a beat.



Kylie Walker
Chief Executive Officer

The 2019-20 year has been a time of change, challenge and opportunity, both for the Academy, and for the world around us.

Under the stewardship of former CEO Dr Margaret Hartley FTSE through to December 2019, ATSE continued to strongly advocate for a thriving Australian innovation economy through representations to policy, public and political decision-makers, and created a sound roadmap for a truly tech-focused and integrated Australian health system – as well as growing our successful programs to enhance STEM education, create industry career pathways for STEM graduates, and connect Australian technology, applied science and engineering internationally.

Following my commencement as CEO in January 2020, the ATSE Secretariat has worked hard alongside Fellows to refresh and reset our structure, strategy and work plan: setting the Academy upon a course for success in the years to come. We have grown our staff in number and capability, and established a new headquarters in Canberra, close to political leadership, while maintaining our Melbourne premises; engaged broadly across the Fellowship to review and update our strategy; built structures and processes to support

genuine and ongoing engagement with Fellows, and; started to grow our public presence. Of course, we've also greatly enhanced our capabilities in delivering workshops and consultations, seminars and flagship events online, with the 2020 ATSE Awards event a particular highlight.

ATSE continues to build our reach and impact, creating new opportunities to leverage Fellows' commitment, expertise and networks to inform and guide national decision-making. This bore fruit early in the pandemic, with the Academy leading a number of collaborative initiatives to provide expert advice directly to Federal Ministers, government departments and the National COVID-19 Coordination Commission, designed to inform rapid and appropriate responses to addressing the health and economic effects of the pandemic.

I look forward to working with Fellows, collaborators, partners and stakeholders to continue providing clear, effective, expert guidance towards building Australia's knowledge and application of technology, engineering and science.

Policy

ATSE's major policy activities in the last year have included the delivery of long-term research projects to plan for a more technologically-enabled future, rapid responses to emerging events and influential COVID-related advice to government.

MAJOR PROJECT

Technology readiness in Australia

ATSE's Learned Academies Special Project report on technology readiness in Australia's healthcare sector: **A new prescription – preparing for a healthcare transformation** is the second report in a series of three, supported by the Australian Research Council (the first was on transport). It recommends a shift in focus to prevention and wellness, supported by rapid expansion of electronic health records; improved access through telemedicine and remote technology; retraining and upskilling the healthcare workforce; and targeted translation and commercialisation of research to deliver better patient outcomes. The Australian Government has rapidly expanded access to telehealth in the context of the COVID-19 pandemic, and intends to do so permanently, in line with ATSE's recommendations. The Government is also working quickly towards the expansion of electronic health records and a preventative health strategy for Australia. A digital health workforce plan was released by the Australian Government following ATSE's report, and COVID-19 has accelerated targeted support for Australian health technology commercialisation, such as in extra funding for the Medical Research Future Fund. The report has received positive feedback about its focus and utility from policymakers, consumer bodies, peak bodies, hospitals, and international academics.

COVID-19 ADVICE TO GOVERNMENT

ATSE led the authoring and publication of two Rapid Research Information Forum (RRIF) reports: brief, evidence-based and rapid responses to questions issued by Cabinet Ministers during the early months of the pandemic, designed to inform agile decision-making:

- **The impact of COVID-19 on Australia's research workforce, and capability to recover**
- **The impact of COVID-19 on women in the STEM workforce.**

These briefs were used to inform Cabinet decisions and the National COVID-19 Coordination Commission responses, as well as generating considerable media and public discussion.

ATSE prepared a number of special reports for Government to assist with planning, resilience and recovery from the pandemic and its economic effects, including **Investing in a post COVID-19 tech boom**, which provides investment advice to the Australian Government aimed at ensuring a post-COVID technology-supported economic recovery. ATSE's fact sheet on **Using technology to get through the pandemic** was also picked up by media and international academics.

Fellows represented ATSE in international discussions on building personal protective equipment (PPE) supply chains, among others.

MAJOR REPORT

Preparing for Australia's Digital Future

ATSE and the Australian Academy of Science partnered to produce this report, laying out a strategic plan to enhance Australia's participation in the digital economy. This strategic plan is complemented by the ATSE series of technology readiness reports.

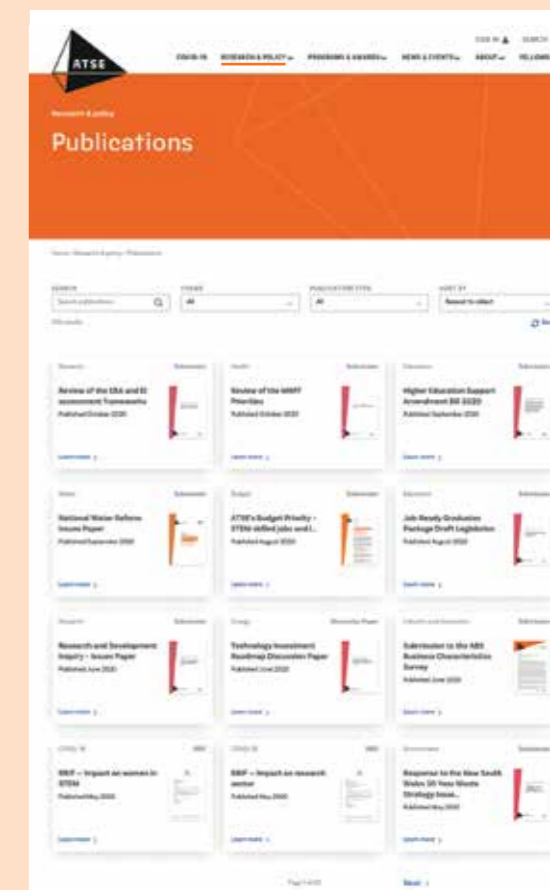
SUBMISSIONS

ATSE made 17 submissions to government inquiries and consultations in the 2019-20 year. Highlights include submissions on the Australian Government's Low Emissions Technology Investment Roadmap Discussion Paper, which was quoted in the Government's First Low Emissions Technology Statement, and the House of Representatives inquiry into Australia's waste management and recycling industry. ATSE also gave evidence to the Committee on the key challenges and opportunities identified in our technology readiness report.

- **Submission on the National Hydrogen Strategy Issues Papers, 28/07/2019**
- **Submission to the Inquiry into the prerequisites for nuclear energy, 16/09/2019**
- **Submission to the inquiry into growing Australian agriculture to \$100 billion by 2030, 14/10/2019**
- **Submission to the NSW Legislative Council Inquiry into Uranium Mining and Nuclear Facilities, 18/10/2019**
- **Submission to Australia's 2020 Cyber Security Strategy: A Call for Views, 1/11/2019**
- **Submission to the Inquiry into the importance of a viable, safe, sustainable and efficient road transport industry, 8/11/2019**
- **Submission to the NSW Productivity Commission Discussion Paper – Kick-starting the productivity conversation, 27/11/2019**
- **Implementing Recommendations of the Third Review of the Gene Technology Scheme, 4/12/2019**
- **Submission to the NSW Education Standards Authority NSW Curriculum Review-interim report, 13/12/2019**
- **Submission to the NSW Department of Premier & Cabinet Accelerating R&D in NSW, 13/12/2019**
- **Submission to the Department of Agriculture Modernising the Research and Development Corporation system, 20/12/2019**
- **Submission to New South Wales Legislative Assembly Committee on Environment and Planning inquiry into the Professional Engineers Registration Bill, 31/01/2020**
- **Submission to the House of Representatives Standing Committee on Industry, Innovation, Science and Resources Inquiry into Australia's Waste Management and Recycling Industries, 31/01/2020**
- **Submission to the NSW Department of Planning, Industry and Environment Cleaning Up Our Act: The Future for Waste and Resource Recovery in NSW, 8/05/2020**
- **Submission on Australian Bureau of Statistics' proposal to redevelop the collection approach of the Business Characteristics Survey (BCS), 12/06/2020**
- **Submission to the South Australian Productivity Commission Research and Development Inquiry – Issues Paper, 12/06/2020**
- **Submission on the Australian Government Technology Investment Roadmap – Discussion Paper, 21/06/2020**

All ATSE publications such as reports, submissions and policy papers are available on our website.

atse.org.au/research-and-policy/publications



International engagement

Despite the challenges of pandemic-induced travel restrictions, ATSE has maintained a lively international program and continued to nurture connection with engineering academies around the world, in support of international collaboration to address global challenges.

Australia-China Young Scientists Exchange Program

In 20 October-2 November 2019, 16 outstanding Australian early-to-mid career researchers in STEM undertook a two-week program of visits to multiple universities and research institutions in China, to develop and strengthen research relationships. Each program was individually tailored to reflect their research interests. The program is supported by the Australia China Strategic Research Fund through the Department of Industry, Science, Energy and Resources. Six of the program's alumni were also awarded funding through the associated 'Next Step Initiative' to make follow-up visits to China in the second half of 2019 to strengthen the research collaborations created through their first visit.

Global Connections Fund

The Global Connections Fund is a program funded through the Australian Government's National Innovation and Science Agenda and run by ATSE since its inception in 2016. It provides funding support to promote Australian researchers and SMEs to collaborate internationally with a focus on research commercialisation.

The Program has consisted of two forms of funding: Priming Grants and Bridging Grants, both of which are designed to:

- increase linkages and collaborations with key global economies
- promote researcher-industry engagement and knowledge transfer
- encourage translational activities, end use development and commercialisation outcomes.

In 2019 Bridging Grants of up to \$50,000 were awarded to 34 Australian researchers and SMEs.

ATSE-Engineering Academy of Japan Transdisciplinary Symposium

The third in a series of ATSE-EAJ joint transdisciplinary workshops was held in Sapporo October 2019, focused on 'The Contribution of Engineering to Healthy Ageing and Sustainable Development Goals'. The workshops drew on the strong cohort of Australian and Japanese alumni from the earlier Australia Japan Emerging Research Leaders Exchange Programs, strengthening their research relationships and establishing new contacts.

'Future Hydrogen' Workshop

Together with the National Academy of Engineering Korea, ATSE invited some 50 leaders in the field from Australia and Korea to a 'Hydrogen Futures' workshop in Melbourne, March 2020, to explore next steps towards a hydrogen economy. The workshop was supported through the Australia Korea Foundation at the Australian Department of Foreign Affairs and Trade.

Chinese Academy of Sciences – Australian Academy of Science – ATSE

The Australia China Strategic Research Fund provides ongoing funding for an annual symposium with the prestigious Chinese Academy of Sciences. In 2019 the symposium was held in Melbourne with a focus on precision medicine with some 30 leaders in the field attending the two-day program.

Science and Technology in Society Forum

Since 2017, President Hugh Bradlow has been invited to attend the prestigious Science and Technology in Society (STS) Forum; a Japanese initiative hosted by the Japanese Prime Minister. Japanese (now ex) Prime Minister Shinzo Abe, Honorary Chairman of STS forum, attends the Annual October Meeting every year. In 2019 Professor Margaret Sheil represented ATSE at the Forum held in Kyoto, Japan.

The forum recognises that today's problems are becoming increasingly complex, that the scientific community alone cannot control these problems and also, that they are beyond the control of any single country. Thus it brings together not only scientists and researchers, but policymakers and business leaders from all over the world to collaborate and promote science and technology for the benefit of humankind.

Visiting Delegations

ATSE was delighted to host visits throughout the year by international delegations from China, Germany, New Zealand and SE Asia. Following a visit from the ASEAN Academy of Engineering and Technology, ATSE and the ASEAN Academy have committed to working together to create technology futures roadmaps for the region and signed an MOU to that effect. ATSE also facilitated a senior energy economy fact-finding mission from Germany, which has contributed to significant developments in Australia-Germany hydrogen energy collaboration.



Diversity & inclusion

ATSE is committed to nurturing a diversity of people in STEM and working towards an inclusive culture throughout the STEM workforce — as well as to an inclusive and balanced Fellowship.

Supporting a diverse and equitable STEM workforce

As one of its co-founders, ATSE has continued to support the Science in Australia Gender Equity program (SAGE), as it worked to transition to an independent entity. ATSE's Vice President, Diversity, continues to sit on the Board of SAGE. ATSE produced two of three SAGE podcasts. The first one, *Dads are parents* too proved quite popular with 377 downloads.

D&I Toolkit

ATSE started scoping and creating a Diversity and Inclusion toolkit to support STEM-focused small to medium enterprises to improve their inclusivity and diversify their workforce. The toolkit will be piloted in 2020-21.

Women in STEM Decadal Plan

ATSE worked with the Australian Academy of Science to produce this ten-year plan to improve gender equity in STEM. Thirty organisations have now signed up as Champions, pledging to work towards achieving the Plan's aims.

Supporting Indigenous participation in STEM

The Academy is working to support the establishment of a national Aboriginal and Torres Strait Islander science and technology network. ATSE is also working with Indigenous STEM education charity Deadly Science to create free multimedia resources for secondary students, and supporting Deadly Science to improve access to high quality STEM education through the provision of STELR resources and kits to remote, regional, and disadvantaged schools.

Mentoring for STEM futures

The Industry Mentoring Network in STEM (IMNIS) is an award-winning industry engagement initiative, which annually pairs more than 300 motivated PhD students and early-career researchers (mentees) in STEM with influential industry leaders (mentors) in a one-year mentoring and professional development program.

ATSE's vision for IMNIS is to create a generation of PhD graduates who can engage and collaborate with industry, and career transition with confidence.

IMNIS is fostering a culture shift toward industry-academia collaborations and innovation. Our first Alumni survey showed that up to five years after their IMNIS program, almost all IMNIS alumni (97%) say they are either collaborating with industry or want to collaborate, over half (65%) said IMNIS had influenced the direction of their research, including entirely new projects. We also know most IMNIS alumni (90%) can see themselves in an industry career, and 4 out of 5 (79%) said they would have liked to do an internship as part of their IMNIS program.

IMNIS is breaking down barriers to create enduring connections between industry and academia evidenced by the fact that over two-thirds (70%) of our alumni are still in contact with their mentor years after their IMNIS program has ended. IMNIS shifts perspectives, increases understanding of the different drivers in each sector, and the role each plays in innovation. It is also allowing industry leaders to see the potential value today's PhD graduates could bring to their organisation and the sector overall.

ATSE's IMNIS initiative is currently a REDI Partner in MTPConnect's \$32 million Researcher Development and Exchange within Industry (REDI) initiative to drive workforce growth in Australia. Through this initiative, IMNIS has engaged mentors and mentees from a broader range of 'job growth' areas, such as regenerative medicine, gene and cell therapies and digital health technologies, and will also expand its program to include international industry mentors.

EVENTS 2019-20

To support the professional development of mentees and provide networking opportunities for mentors and mentees alike, in addition to facilitating the professional mentoring program, IMNIS held 20 events through the year, including:

- Five Visionary Leadership events which book-end the annual program and celebrate the launch of the new round
- Five professional development workshops for mentees in Mentoring and Sponsorship
- Five STEM Careers in Industry professional development workshops for mentees
- Five Leaders Forums for mentors to extend their understanding of Australia's future workforce and the value of hiring PhD graduates, and to connect as peers.

IMNIS
INDUSTRY MENTORING
NETWORK IN STEM

imnis.org.au

School STEM education

STELR (Science and Technology Education Leveraging Relevance) is ATSE's school education program. It's a national initiative which aims to boost participation and student results in STEM.

In 2019/20 STELR programs ran in 753 schools nationally and 31 internationally, in New Zealand, Indonesia, the Philippines, Peru, Singapore, Canada, India and the United States of America.

Highlights include:

- International STELR training workshops for teachers from Saudi Arabia, Indonesia, Malaysia, Brunei, Cambodia, Myanmar, Thailand, Timor Leste and Vietnam. STELR is also supporting Latin American schools with donations and Spanish translations for STELR's online curriculum resources.
- Solar panel research: In partnership with CSIRO and Stanford University, ATSE is supporting 100 STELR schools to take part in a study of degradation of flexible photovoltaic modules, helping students to learn about the technology, design studies and analyse results.
- Support for schools affected by Covid-19: ATSE produced a series of free online curriculum resources, creating specialist remote learning videos with acclaimed science communicators, and pairing these with student workbooks for schools closed due to COVID-19.

- API Solar Car Challenge: In partnership with the Australian Power Institute, ATSE has distributed Solar Car kits to 10 schools across Australia to compete in a national challenge to apply science and engineering skills to produce the most efficient, fastest or most powerful solar car.

A DAY IN THE LIFE OF A SEVEN-YEAR-OLD

The Day in the Life of a Seven-Year-Old program is a partnership between the Australian Power Institute and ATSE. It aims to spark the curiosity of Year 2 students in all schools across Australia by providing adaptable, practical and skills-based STEM related activities within their curriculum to raise awareness around future career pathways in STEM.

Twenty-five schools nationally participated in the 2019 pilot, with the program reaching 1060 students. Schools reported that the program was valuable, that students thinking about future jobs had broadened to consider STEM careers, and they were actively engaged in the program.

PUBLICATIONS

The fourth edition of the STELR Renewable Energy student workbook was produced and 5000 copies were printed for distribution to schools. The second edition of the Sustainable Housing eBook was produced and published on the STELR website. Both books are complemented by comprehensive teacher support materials.

STELR

stelr.org.au



Events & outreach

The past year of events at the Academy has been exciting, yet challenging as — like the rest of the world — we adapted to the ever-changing conditions prompted by COVID.

The Academy hosted six major events over the reporting year including the **2019 New Fellows Symposium**.

The Symposium welcomed Fellows and other guests to celebrate the new ATSE fellows and the contribution their work has made.

Due to COVID the **2020 ATSE Awards** event, which would normally be held in June, was staged as an online broadcast for the first time, to ensure this hallmark event could continue despite restrictions on travel and gatherings. This first major ATSE event to be held virtually allowed a great many Fellows, family and friends to join us in celebrating award winners.

The Academy also hosted its first major webinar for Fellows and friends on the Learned Academies Special Project report on technology readiness in Australia's healthcare sector: *A new prescription — preparing for a healthcare transformation*.

Through state and territory divisions and the STELR and IMNIS programs, the Academy also supported a broad range of public and Fellows' events:

DIVISION	EVENT
NSW	Interpreting architect Antoni Gaudi's disruption for our times
NSW	Buried in garbage — How global microfactories can save us
NSW	Safer contact lenses and new challenges posed by myopia
NSW	Malcolm Chaikin Oration 2019 — Technology change, fake news and Learned Academies
NSW	NSW weekend away — Orange
NSW	The building industry in NSW — Is there a crisis?
QLD	End of year event — Insights into the role of Young Science Ambassadors
SA/NT	Annual meeting and dinner — The role of science, technology and innovation in promoting economic growth in South Australia
SA/NT	The Norton Jackson New Fellows Forum
VIC	Interpreting architect Antoni Gaudi's disruption for our times
VIC	Learnings from commercialisation and innovation strategies
VIC	Victorian annual meeting with lecture given by Chief Scientist of Australia
VIC	Ensuring quality mathematics and science teaching in Australia
VIC	2020 Commencement Dinner — Australia's innovation and science system in 2020
WA	Annual meeting and visit to the Australasian Joint Research Centre for Building Information Modelling for industry engagement
WA	End of the year evening talk and dinner — Social, economic and climate disruption in the energy sector

Award winners

Clunies Ross Award Entrepreneur of the Year
Mr Mark Sullivan

Clunies Ross Award for Innovation
Dr Alison Todd and Dr Elisa Mokany

Clunies Ross Award for Knowledge Commercialisation
Dr Grant Douglas

Batterham Medal for Engineering Excellence
Associate Professor Pauline Pounds

ICM Agrifood Award
Professor Michelle Colgrave

ICM Agrifood Award
Dr Greg Falzon

Ezio Rizzardo Polymer Scholarship
Ms Charmaine Hee

David and Valerie Solomon Award
Dr Gang (Kevin) Li

Key people

All as at 30 June 2020

BOARD

President
Vice President
Vice-President
Vice President
Director
Director
Director
Director
Director
Director and CEO

Professor Hugh Bradlow FTSE
Professor Iven Mareels FTSE
Dr Bruce Godfrey FTSE
Professor Doreen Thomas FTSE
Dr Cathy Foley AO PSM FTSE
Professor Karen Reynolds FTSE
Dr Richard Sheldrake AM FTSE
Dr Carmel Hillyard AM FTSE
Professor Mark Hoffman FTSE
Kylie Walker

DIVISIONAL CHAIRS

ACT
QLD
NSW
SA/NT
TAS
VIC
WA

Dr Joanne Daly PSM FTSE
Dr David Noon FTSE
Emeritus Professor Anne Green FTSE FRSN
Emeritus Professor Graeme Dandy FTSE
Professor Jim Reid FTSE
Professor Bronwyn Fox FTSE
Professor Dongke Zhang FTSE

FORUM CHAIRS

Agriculture
Digital Futures
Education
Energy
Health
Industry and Innovation
Infrastructure
Mineral Resources
Water

Professor Edward (Snow) Barlow FTSE
Professor Michael Miller AO FTSE
Professor Peter Lee FTSE
Dr John Söderbaum FTSE
Sue MacLeman FTSE
Dr Erol Harvey FTSE
Dr David Cook AO FTSE
Professor Mike Hood FTSE
Professor Robert Vertessy FTSE

SECRETARIAT

Senior Managers

Chief Executive Officer
Chief Operating Officer
Executive Manager STELR, ATSE Schools Program
IMNIS Executive Director
Director Policy & Government Relations
Director Strategic Communication

Kylie Walker
Dr Irene Kourtis
Peter Pentland
Dr Marguerite Evans-Galea AM
Alix Ziebell
Justine O'Brien

Staff

Senior International Relations Associate
Fellowship Manager
Governance Secretary and EA to CEO
Finance Officer
IMNIS National Program Manager
International Mentoring Officer (IMNIS)
National Education Program Coordinator (STELR)
Senior Policy Analyst
Program Manager
Policy Adviser
Design and Digital Officer
Communication Officer
Project Administration Officer
Operations and Administration

Dr Carolyn O'Brien
Elvira Copur
Tracy Watson
Maria Pridham
Andrew Richards
Sarah Hayward
Camille Thomson
Dr Harry Rolf
Adam Mathews
Jasmine Francis
Elizabeth Geddes
Ben Hickey
Amy Kuivalainen
Ashleigh Dunston

New Fellows 2019



ACADEMY ORATION
Delivered by Professor Margaret Sheil AO FTSE Vice-Chancellor & President QUT



Main photo by Peter Casamento

- 1 **Professor Neena Mitter** FTSE
Ag nano innovator
Director, Centre for Horticultural Science, QAAFI, The University of Queensland, QLD
 - 2 **Romilly Madew** AO FTSE
Sustainable infrastructure pioneer
Chief Executive Officer, Infrastructure Australia, NSW
 - 3 **Professor Sandra Kentish** FTSE
Polymer research industry pioneer
Head, School of Chemical and Biomedical Engineering, The University of Melbourne
 - 4 **Dr Douglas Bock** FTSE
Radio telescope engineer
Director, CSIRO Astronomy and Space Science, CSIRO
 - 5 **Professor Emma Johnston** AO FTSE
Marine scientist
Dean, UNSW Sydney
 - 6 **Dr Gunilla Burrowes** FTSE
Electrical engineer & gender equity advocate
Chair, Eighteen04 Inc
 - 7 **Anthony Wood** AM FTSE
Energy policy advisor
Energy Program Director, Grattan Institute, VIC
 - 8 **Professor Saeid Nahavandi** FTSE
Intelligent systems researcher
Pro Vice-Chancellor (Defence Technologies) Deakin University
 - 9 **Dr Surinder Pal Singh** FTSE FAA
Plant oil researcher
Chief Research Scientist, Agriculture & Food, CSIRO
 - 10 **Francesca Ferrazza** FTSE
Photovoltaics & renewables researcher
Senior Vice-President Decarbonization & Environmental R&D, Eni, Italy
 - 11 **Dr Alison Todd** FTSE
Molecular inventor
Co-Founder & Chief Scientific Officer, SpeedX Pty Ltd
 - 12 **Professor Chien Ming Wang** FTSE
Structural mechanics engineer
Transport and Main Roads Chair in Civil Engineering, University of Queensland
 - 13 **Zoe Yujnovich** FTSE
Energy sector executive
Chair/Executive Vice-President, Shell Australia
 - 14 **Associate Professor Elaine Saunders** FTSE
Engineer, audiologist & inventor
Former Executive Chair, Blamey Saunders Hears
 - 15 **Professor Ranjith Pathegama Gamage** FTSE
Resource recovery innovator
Professor in Geomechanics Engineering, Monash University
 - 16 **Professor Huanting Wang** FTSE
Advanced membranes inventor
Professor in Chemical Engineering, Monash University
 - 17 **Dr Helen Cleugh** FTSE
Atmospheric scientist
Director, Climate Science Centre, CSIRO
 - 18 **Dr Andy Sheppard** FTSE
Invasive organisms scientist
Research Director, Managing Invasive Species and Diseases, CSIRO
 - 19 **Professor Jan Tennent** FTSE
Biomedical research leader
CEO, Biomedical Research Victoria
 - 20 **Distinguished Professor Adrian Mouritz** FTSE
Materials engineer
Executive Dean of Engineering, RMIT
 - 21 **Professor David Lloyd** FTSE
Tertiary education champion
Vice-Chancellor and President, University of South Australia
 - 22 **Professor Nicolas Voelcker** FTSE
Nano-materials scientist
Professor in Pharmaceutical Sciences, Monash University
 - 23 **Associate Professor Matthew Hill** FTSE
2019 David and Valerie Solomon Award Winner
Principal Research Scientist, CSIRO Manufacturing
 - 24 **Dr David Cook** AO FTSE
Chair of the Academy Membership Committee
- ABSENT FROM PHOTO
Dr Lynn Booth FTSE
Defence technologist
Chief, Joint and Operations Analysis Division Defence Science and Technology Group
- Dr Martin Cole** FTSE
Agribusiness & food security leader
Deputy Director, Agriculture and Food, CSIRO
- William Cox** FTSE
Infrastructure engineer & business leader
Global CEO Aurecon
- Professor Melinda Hodkiewicz** FTSE
Asset management thought leader
Professor, The University of Western Australia
- BOARD-ELECTED FELLOW
Dr Andrew Thomas AO FTSE
Former NASA astronaut
- HONORARY FELLOW
The Hon John Anderson AO FTSE
Former Deputy Prime Minister
Chair of the Crawford Fund
- NON-NEW FELLOWS

Honours

Australia Day Honours (January 2020)

Officer of the Order of Australia (AO)

Distinguished Professor Genevieve Bell AO FTSE (ACT)
Laureate Professor Geoffrey Stevens AO FTSE (VIC)
Dr Brian Harrison Walker AO FTSE FAA (ACT)

Member of the Order of Australia (AM)

Emeritus Professor Tony Guttmann AM FTSE FAA (VIC)
Emeritus Professor John O'Callaghan AM FTSE (ACT)
Professor Laura Poole-Warren AM FTSE (NSW)

Queen's Birthday Honours (June 2020)

Order of Australia – Officer in the general division (AO)

Dr Catherine Foley AO PSM FTSE
Ms Denise Goldsworthy AO FTSE

Order of Australia – Member in the general division (AM)

Professor Kaye Basford AM FTSE
Dr Jackie Craig AM FTSE
Dr Ian Sare AM FTSE

Meritorious Award for the Public Service Medal (PSM)

Dr Geoffrey Allan PSM FTSE

Vale

Gavin McDonald OBE FTSE
Prof Ian Ferguson AM FTSE
Prof Keeva Vozoff FTSE
Prof June Olley AM FTSE
The Hon Tim Fischer AC FTSE
Dr William "Bill" Ivo Whitton FTSE
Prof Brian Graham Wilson AO FTSE
Warwick Arthur Watkins FTSE
Em Prof Norman McCall Tulloh AM FTSE
Edgar Noel Fitzpatrick AM FTSE
Dr Brian Roy Spies FTSE FRSN
Prof Raymond Martin AO FAA FTSE
Robert Thomas Hardwick FTSE
Dr Patricia Verne Kailis OBE AM FTSE
Dr Alan Donald AM FTSE
Lord Robert McCredie May OM AC FTSE
Keith Peter Edmund Daniel FTSE

Financial Results

FOR THE YEAR ENDED 30 JUNE 2020

ATSE's financial results for 2019-20 reflect a year of change and challenge. However, the financial position remains very strong and our investments are in sound shape. The COVID-19 pandemic has presented multiple financial challenges, including an impact on our investments, a halt to international program grants, and the necessity to cancel in-person events. ATSE has qualified for JobKeeper which has helped to offset some of the change. Investments have been well managed and our losses on investment are much better than the market average. Event changes have meant a loss of potential sponsorship and ticket sales revenue. However, they have also come with significant savings with reduced travel and venue hire costs.

At the same time there has been a significant change in accounting standards; previously ATSE has been accustomed to carrying income forward from financial year to year. However, this is now no longer allowed (except for multi-year grants), necessitating a correction in the 2019-20 financial year. ATSE has worked throughout the year to put in place appropriate financial risk mitigation strategies. Unfortunately, the outcome for the financial year is a small loss, but this does not materially impact our balance sheet. We are confident that measures taken in the last six months will prime ATSE for growth, achievement and financial success.

PROFIT & LOSS STATEMENT

Statement of profit or loss and other comprehensive income for the year ended 30 June 2020

	2020 \$	2019 \$
REVENUE	5,951,029	6,581,968
EXPENSES		
Administration (Learned) Fund	(2,521,710)	(2,207,998)
Investment Fund	(451,407)	(575,394)
Policy & Government (Technical Projects)	(308,711)	(993,678)
International	(2,023,463)	(1,664,680)
Education (STELR)	(594,207)	(720,948)
Events (Awards)	(5,646)	(90,662)
	(5,905,144)	(6,253,360)
GAIN FOR THE YEAR	45,885	328,608
OTHER COMPREHENSIVE INCOME		
Fair value gains on financial assets at fair value through other comprehensive income	(222,212)	504,160
Other comprehensive income for the year	(222,212)	504,160
TOTAL COMPREHENSIVE INCOME / (LOSS) FOR THE YEAR	(176,327)	832,768

Donations

The Academy acknowledges donations from the following Fellows, individuals and philanthropic organisations:

Dr Robert David
Cochlear Foundation Limited
Dr Denis Newell
Prof Colin Sullivan FTSE
Orica Australia Pty Ltd
Dr John Floyd AM FTSE
Dr Alexander Gosling AM FTSE
Dr Rober Watts FAA FTSE
Dr Robert La Nauze FTSE
Dr Susan Pond AM FTSE

Professor Chennupati Jagadish FAA FTSE
Dr Oliver Mayo FAA FTSE
Professor Robert Bitmead FTSE
Dr Ken Michael AC FTSE
The James N Kirby Foundation Ltd
ASCA (Australian Schools Canteen Association)
Dr John Black AM FTSE
Dr David Brockway FTSE
Dr Richard Jan Hannink FTSE
Professor Anthony Gordon Fane FTSE

FINANCIAL POSITION

Statement of financial position as at 30 June 2020

	2020 \$	2019 \$
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	1,801,080	3,569,614
Trade and other receivables	286,021	519,655
Financial assets	834,088	1,823,265
Other assets	125,395	95,822
TOTAL CURRENT ASSETS	3,046,584	6,008,356
NON-CURRENT ASSETS		
Financial assets	7,121,194	6,234,941
Plant and equipment	264,997	358,551
Right of use assets	366,603	-
Intangible assets	5,289	30,747
TOTAL NON-CURRENT ASSETS	7,758,083	6,624,239
TOTAL ASSETS	10,804,667	12,632,595
LIABILITIES		
CURRENT LIABILITIES		
Trade and other payables	293,007	351,738
Income in advance	1,109,452	2,965,890
Lease liabilities	149,735	-
Provisions	130,976	257,300
TOTAL CURRENT LIABILITIES	1,683,170	3,574,928
NON-CURRENT LIABILITIES		
Provisions	11,129	13,922
Lease liabilities	242,950	-
TOTAL NON-CURRENT LIABILITIES	254,079	13,922
TOTAL LIABILITIES	1,937,249	3,588,850
NET ASSETS	8,867,418	9,043,745
EQUITY		
Reserves	1,159,035	1,381,247
Retained surplus	7,708,383	7,662,498
TOTAL EQUITY	8,867,418	9,043,745

Major partners

IMNIS PARTNERS
MTPConnect
BHP
FB Rice
CSL

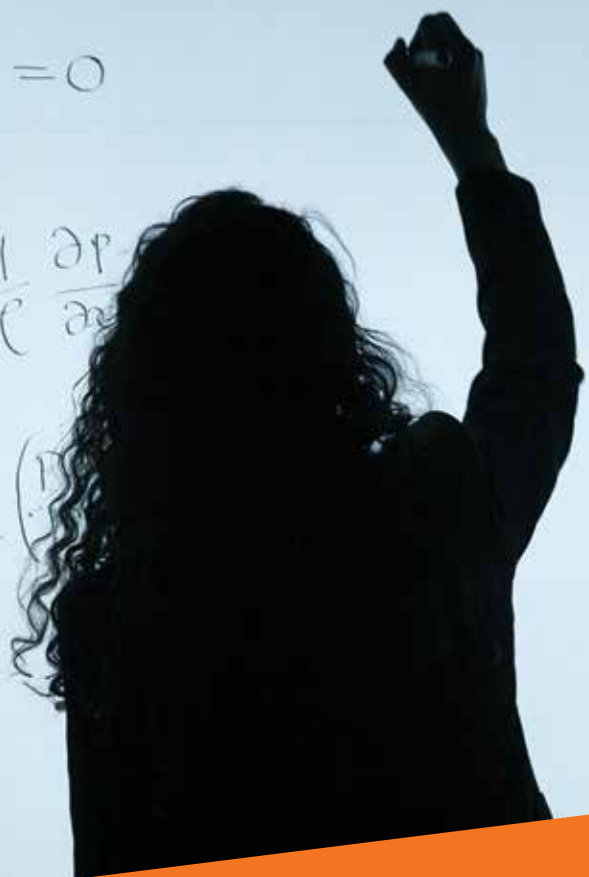
STELR PARTNERS
Orica
Australian Power Institute



$$\frac{\partial p}{\partial t} + \frac{\partial}{\partial x}(pu) = 0$$

$$\frac{\partial u}{\partial t} + u \frac{\partial u}{\partial x} = -\frac{1}{\rho} \frac{\partial p}{\partial x}$$

$$\frac{\partial}{\partial t} \left(\frac{p}{\rho} \right) + u \frac{\partial}{\partial x} \left(\frac{p}{\rho} \right)$$



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