

Annual Review

2020–2021



Australian Academy of
Technology & Engineering

The Australian Academy of Technology and Engineering (ATSE) has a mission to help Australians understand and use technology to solve complex problems.

The Academy's 891 Fellows work hand-in-hand with the professional Secretariat to acquit this mission through the provision of expert advice and foresighting reports to leaders and the general public; through programs and tools that nurture population literacy and career pathways in science, technology and engineering; and by fostering a diverse and inclusive, high-achieving network of professionals throughout the private, public and academic sectors in which science, technology and engineering is researched and applied.

The Academy is proud to present this summary of work and achievement in its 45th year.

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Professor Hugh Bradlow FTSE
ATSE President

Two words have become staples in the everyday lexicon these past 12 months: resilience and innovation. Both epitomise the approach of the Academy during these Covid-disrupted times.

We entered 2020/21 with high hopes that the pandemic could be contained but planned for every eventuality. An example of this was the ATSE awards program. It was held in June in a distributed hybrid format for the first time, with cocktail functions in six major cities, to accommodate border restrictions. There was an advanced online screening for those in lockdown in Victoria.

While most of the Academy's activities shifted to online, the pace of work continued unabated. In October ATSE produced the third in a series of Learned Academy special reports on technology readiness. *Towards a Waste Free Future* called for a complete rethink of Australia's approach to waste and was well received and publicised. It has resulted in requests for ATSE's support in developing government policy for e-waste and plastics.

ATSE's Policy Forums continued to work actively towards the three priority focus areas chosen by the Fellowship in the annual survey: climate change mitigation and

adaption; enhancing research collaboration, translation and commercialisation; and educating young people in STEM. ATSE has been active in the climate change debate and ahead of the COP26 Climate Change summit in Glasgow, it has positioned itself as the authority on how technology can help Australia economically achieve necessary reductions in emissions to reach net zero by 2050.

During this period ATSE also took on the successful Computer Science in Schools Education program. CS in Schools aims to ensure every secondary school in Australia can offer computer science education and is a natural fit for the Academy. It links with STELR and IMNIS to form our 'STEM Career Pathways'.

And on a final note, ATSE has established a new head office in Canberra, in the heart of the parliamentary precinct. In keeping with the ethos of the waste report and the Academy's core value of sustainability the refit was deliberately low impact.



Kylie Walker
ATSE Chief Executive Officer

Through the change and challenge of 2020-21, I am heartened to report that Australia's political and policy leaders have frequently sought the expert advice of our learned Fellows.

Both through directly engaging our Fellows for advisory bodies and task forces, and by seeking our inter-disciplinary and cross-sector convening power, the Australian Academy of Technology and Engineering (ATSE) has played a meaningful part in supporting informed decision-making through the pandemic, and contributed to building Australia's technological relevance and economic resilience.

The Academy's expert advice has been sought on issues as diverse as investment priorities for translating Australian research; national water reform; modern manufacturing; preventative health; excellence in research; transitioning to a zero-emissions economy, and future workforce needs – to name just a few.

We've provided this while building a strong suite of programs to support STEM Career Pathways: practical programs and tools to build knowledge, confidence, capacity and careers in STEM for young Australians. In a highlight this year, we were delighted to welcome to the ATSE family the world-class Computer Science (CS) in Schools program. Conceived by a highly accomplished trio of Australian technology, education and business professionals, this free program provides excellent curriculum resources, mentoring and support to Australian secondary schools, and aims to catapult

Australia's digital technology education to the top of the class. It complements our existing suite of secondary school education and post-graduate mentoring and professional development programs, which are building skills, confidence and opportunities for future STEM leaders.

We're growing a more diverse STEM future, too. As part of the Australian Council of Learned Academies (ACOLA), along with our sister learned academies, ATSE has supported the Uluru Statement from the Heart, and is working on its first Reconciliation Action Plan with a strong network of Aboriginal and Torres Strait Islander advisers who are senior leaders in STEM. We're also rolling out the pilot of our diversity and inclusion toolkit in STEM small-to-medium enterprises which will continue throughout 2021-22.

With a full review of the Academy's governance practises and structures complete and recommendations being implemented, a modern and comprehensive Code of Conduct, and the official opening of ATSE's new Canberra premises just a stone's throw from Parliament House, ATSE's structures, people, policies and programs are in sound shape and ready to support an even stronger capacity to deliver on our mission in 2021-22.

Ensuring industry technology readiness

ATSE has supported its strategic goal to ensure industry's technology readiness through a series of major projects that assess opportunities and challenges, and present a vision and roadmap towards a tech-forward economy. This work was complimented with a range of submissions and advice to political leadership to support Australia's high-tech transformation.



DOWNLOAD THE REPORT
atse.org.au/wastetech

Towards a Waste Free Future

Australians create around 67 million tonnes of waste each year, equating to 2.7 tonnes per person. ATSE's *Towards a Waste Free Future* – the third and final report in ATSE's Learned Academies Special Project reports supporting Australia's transition to a tech-forward economy – investigated the barriers and opportunities for technological progress in waste and resource recovery. The report examined pathways towards the critical transformation to a circular economy, and outlined approaches to reducing consumption of finite resources by deliberately designing products, systems and infrastructure with the aim of creating less waste, and by reusing, recycling and recovering valuable resources.

Towards a Waste Free Future was launched by The Hon. Sussan Ley MP, Minister for the Environment in November 2020.

Since its launch, the report has repeatedly been cited by the Environment Minister and other federal parliamentarians. It has featured in more than 40 stories in the news media, including Australian Story, 7.30, and News Limited, and has formed the central focus for a range of events held by ATSE and others. It continues to be presented to key stakeholders across industry, and state and federal government.

University Research Commercialisation

ATSE was deeply involved in supporting the Government's major new proposed University Research Commercialisation Scheme. More than 100 Fellows were involved in five reports and a submission to guide the focus and application of this proposed new scheme. This work has been used as the cornerstone of government deliberations on the priorities for investing in commercialising Australian research.

Infrastructure Position Statement: Building Australia's Future

ATSE's Infrastructure Forum crafted a Position Statement on *Building Australia's Future*, outlining how resilient critical civil infrastructure can manage and mitigate the impact of national disasters now and into the future. The statement proposes four key challenges for Australian governments and communities to address: resilience, planning, social licence and the funding of civil infrastructure.

ADVICE TO DECISION-MAKERS

ATSE's advice was sought throughout the year by a range of senior decision-makers in politics, policy, business and academia. In addition, the Academy made 20 formal submissions to government inquires and consultations in the 2020-21 year, concerning issues of high priority to the Academy and its Forums.

Our submissions continue to have impact, resulting in discussions in Parliament, changes to legislation and regulation, and inclusion of preferred language and recommendations in final reports – as well as a strong presence in the media and social media.

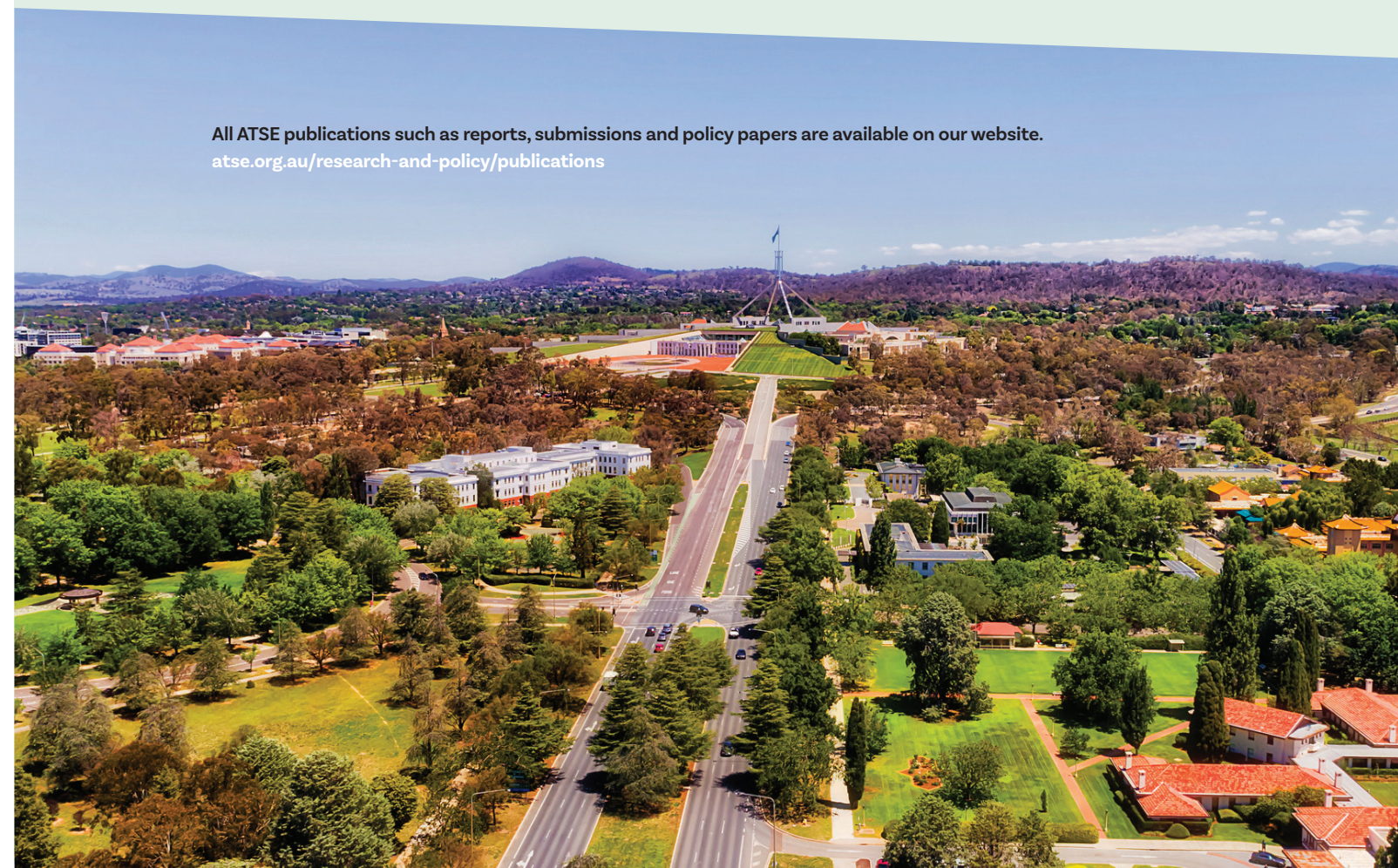
Highlights from the year include advice in support of the 2020 Climate Change Bills, which resulted in the ATSE's CEO and President being invited to give evidence to the House of Representative Standing Committee on the Environment and Energy; and a series of submissions to the inquiry into national water reform, which also resulted in an invitation to give evidence at a public hearing of the inquiry to speak about governance, inclusion of Indigenous perspectives, and investment in water R&D. Our submission to the inquiry on Australian consumer's right to repair built on the themes from *Towards a Waste Free Future* and ATSE was invited to present at a public hearing of the inquiry.

Submissions included:

- Job-Ready Graduates Draft Legislation
- National Water Reform
- Higher Education Support Amendment
- 2020-21 Budget Priority 'STEM-skilled jobs and industry-research collaboration'
- National Preventative Health Strategy
- Medical Research Future Fund (MRFF) priorities
- ARS review of the Excellent in Research for Australia (ERA) and Engagement and Impact (EI) assessment frameworks
- Higher Education Legislation Amendment Bill
- National Priorities and Industry Linkage Fund (NPILF)
- Modern Manufacturing Strategy Roadmaps

- Australia's Artificial Intelligence (AI) Action Plan
- Climate Change Bills 2020
- Productivity Commission inquiry into a consumer right to repair in Australia
- 2021-22 Budget Priorities 'Building STEM career pathways and workforce diversity to address Australia's future challenges'
- Digital Transformation Strategy
- National Gene Technology Scheme consultation with the Academy of Science
- National Water Reform 2020 Draft Report
- Future Fuels Strategy: Discussion Paper
- University Research Commercialisation Scheme
- Draft National Preventative Health Strategy

All ATSE publications such as reports, submissions and policy papers are available on our website.
atse.org.au/research-and-policy/publications



Enhance technology and engineering career paths

Our strategic goal to enhance technology and engineering career pathways is aimed at building Australia's capability to grow now, and excel in the technology-forward future. We've supported this goal through connecting STEM leaders of tomorrow with the leaders of today through targeted mentoring, networking and professional development; and through targeted policy formulation and advice in support of a thriving and inclusive STEM ecosystem.



The Industry Mentoring Network in STEM (IMNIS) is an award-winning industry engagement initiative, which annually pairs 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 grow a genuinely collaborative Australian approach to STEM research and development by creating a generation of PhD graduates who have the skills, networks and confidence to work in or engage with industry.

The 2020-21 program supported 347 STEM PhD students from across the spectrum of STEM disciplines to be mentored by senior-level industry professionals from 340 companies. IMNIS program alumni report a clearer plan for their future career (92%), a network that extends beyond academia (87%), and the knowledge and skills to work in, or collaborate with, industry (83%).

To drive workforce growth in Australia, IMNIS has partnered with MTPConnect's \$32 million Researcher Development and Exchange within Industry (REDI) initiative, powered by the Medical Research Future Fund. REDI has facilitated the launch of new programs with IMNIS, including the REDI Connect program where five REDI mentees undertaking research in STEM fields with high job-growth potential (regenerative medicine, gene and cell therapies, and digital health technologies) receive additional professional development and meet-the-expert opportunities.

There are now 1,300 alumni mentees since the first IMNIS pilot in 2015-16. This year we launched an IMNIS alumni program: IMNIS Catalyst, an Ambassador-style program which grows engagement with past mentees, connects them as role models for secondary school STEM students, and provides ongoing professional development to kick-start their careers.

IMNIS also held more than 30 professional development workshops and networking events for its mentees, alumni, and mentors.

Image opposite: Mentors and Mentees on a speaker panel at an IMNIS event.

ADVOCACY FOR STEM CAREER PATHWAYS

In 2020-21, ATSE strongly advocated for STEM skills development, through direct advocacy to leaders, and several submissions to Government:

- **Two pre-budget submissions,** ATSE highlighted how investment in technology could address major challenges and create future growth industries following the economic disruption of the COVID-19 pandemic. ATSE urged the Government to act on the priority of mitigating and adapting to climate change, and to prioritise STEM education, career pathways, and workforce diversity to drive innovation in Australia.
- **The Australian Government's 2020 Higher Education Reform Package** represented some of the most significant changes to tertiary education in Australia in the past 30 years. ATSE raised concern that the funding model could provoke perverse outcomes and disincentivise the enrolment of domestic students in STEM subjects. ATSE released a media statement in response to the proposed draft legislation.
- **The Higher Education Support Amendment Bill 2020** proposed investments in training a STEM-ready workforce and connecting industry with the tertiary research sector. ATSE commended the investment but reiterated the concern that universities may receive less funding per STEM place under the new funding model. ATSE raised these issues to the Senate Standing Committee on Education and Employment's Inquiry into the draft legislation. The Committee's final report was released in September 2020 and the legislation was passed in October 2020.
- **The Modern Manufacturing Strategy** requires significant investment in a STEM-skilled workforce to support an Australian manufacturing ecosystem. ATSE's submission to the draft strategy highlighted the need for STEM-skilled workers, and provided ATSE's technology readiness reports to the Department of Industry, Science, Energy and Resources. These reports were mentioned and cited in the Government's medical products and recycling and clean energy manufacturing roadmaps.



Improve STEM education

ATSE's advocacy speaks to the conditions and investments necessary for a thriving STEM-ready population, and its programs directly support young people to learn. Building on our ever-popular STELR program, that brings the science curriculum alive with hands-on, sustainability-focused classroom activities, we were proud this year to welcome to the ATSE family the world-class secondary school coding education program, CS in Schools. Both these programs have focused on supporting virtual classrooms throughout the challenge of the pandemic. We've also supported Aboriginal and Torres Strait Islander students to access quality STEM learning resources through our partnership with Deadly Science.

STELR

Science and Technology Education Leveraging Relevance – STELR – is ATSE's school science education program. It's a national initiative which aims to boost participation and student results in STEM, with a hands-on focus on environmental sustainability.

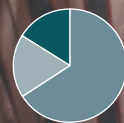
In 2020/21 STELR increased its reach to over 860 schools and education centres in Australia and more than 30 overseas.

Highlights include:

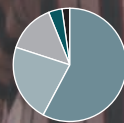
- Support for schools affected by COVID-19: ATSE produced a second series of free online curriculum resources with acclaimed science communicators and paired these with student workbooks for schools managing remote learning due to COVID-19.
- API Solar Car Challenge: In partnership with the Australian Power Institute, ATSE distributed Solar Car kits to 14 schools helping them compete in a national challenge in applying science and engineering skills to produce the most efficient, fastest, or most powerful solar car. This year an additional goal to design a team name and logo was introduced to engage creativity.
- STELR delivered two *Careers in Engineering* webinars as part of the Victorian Challenge and Enrichment Series. They featured ATSE award winners, Professor Madhu Bhaskaran and Associate Professor Matthew Hill and early career researchers, Associate Professor Kate Fox and Dr Daniel Edgington-Mitchell.
- Seven schools, predominantly in regional and remote areas, were assisted to receive partial or full subsidies to purchase STELR kits. This support came from the Baxter Foundation and the James N Kirby Foundation.

STELR
837

Schools Australia wide



School type
66% Government
18% Catholic
16% Non-government



School location
58% Major cities
22% Inner Regional
14% Outer Regional
4% Remote
2% Very remote



Above: Students from South Oakleigh College holding flexible solar panels from a STELR / CSIRO project.



CS IN SCHOOLS

In April 2021, we were pleased to welcome to the ATSE family the world-class Computer Science (CS) in Schools program.

CS in Schools is a free program that helps secondary schools build a robust digital technology capability in both teachers and students and aims to set the standard for computer science education nationally. Prioritising education for girls and regional schools, it matches computing professionals with teachers, helping them develop their coding skills in the classroom and providing innovative lesson materials.

By the end of June 2021, CS in Schools was in 42 schools and it officially became a national program. CS in Schools has an ambitious growth plan, and is on track to be active in 64 schools by the end of the 2022 school year.

ATSE is grateful to the CS in Schools co-founders, Hugh Williams, Selina Williams and Kristy Kendall, whose continuing generosity, time and expertise are crucial to the success of this important program.

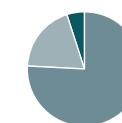
42 Schools Australia wide
Goal for 2022 > 64

135 Teachers supported

9,500 Students taught (approx)
More than half were girls



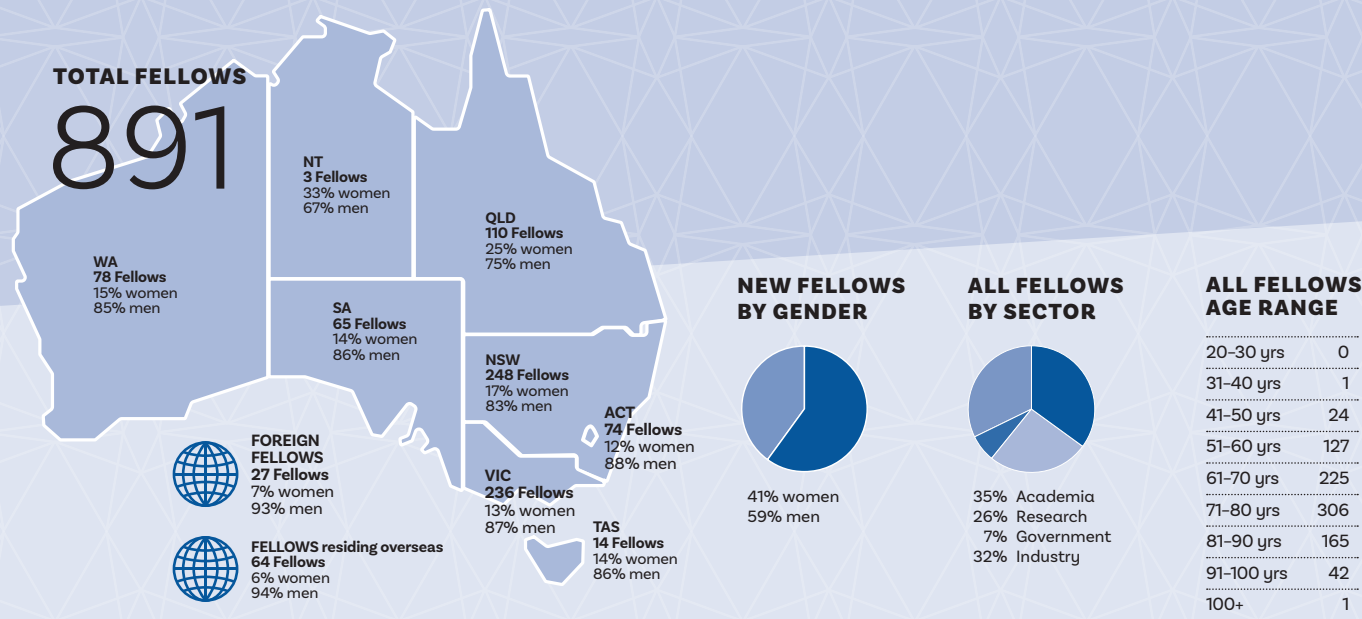
School type
38% Independent
45% Government
12% Independent Catholic
5% Catholic



School location
76% Metro
19% Inner Regional
5% Outer Regional

Achieve greater gender equity and diversity

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



INDIGENOUS ENGAGEMENT

This year, ATSE supported 14 schools with high populations of Aboriginal and Torres Strait Islander students to access quality STEM resources, through donations in partnership with Deadly Science. We also donated STEM equipment to 75 Aboriginal and Torres Strait Islander students learning from home.

ATSE has started developing a Reconciliation Action Plan (RAP). We're grateful to our strong network of Aboriginal and Torres Strait Islander RAP advisers who are senior leaders in STEM from around Australia. We look forward to providing more information and updates in the year to come.

The Academy also worked with the Australian Council of Learned Academies (ACOLA) to develop a response in support of the Uluru Statement from the Heart.

SAGE

In the latter half of 2020, the SAGE Pilot program, a partnership between ATSE and the Academy of Science, transitioned to a not-for-profit company: Science in Australia Gender Equity Limited. SAGE works with STEM employer institutions to improve their gender equity. ATSE remains involved through leadership on its Board.

D&I TOOLKIT

ATSE has developed a Diversity and Inclusion Toolkit to support science and technology-focused small and medium enterprises to improve inclusion and diversity in their workforces. The toolkit will be trialled in a pilot program before being launched in 2022.

DIVERSITY COUNCIL OF AUSTRALIA

ATSE is a member of the Diversity Council of Australia. ATSE Senior Policy Analyst Dr Harry Rolf was elected a Director on 23 June 2021 for a three-year term.

LEADING DIVERSITY INTERNATIONALLY

ATSE is a member of the International Council of Academies of Engineering and Technological Sciences (CAETS), and with the Royal Academy of Engineering is a Founding Co-Chair of the CAETS Diversity Committee.

Connect globally for the benefit of Australians

Despite the ongoing challenges of the pandemic, a number of ATSE's international programs continued to thrive as we worked with partners and sister academies to design and deliver hybrid events and programs that have opened doors to research and collaboration opportunities with key economies.

Despite best efforts, the pandemic and international border closures did have an effect on some of ATSE's international programs. The Australia-China Young Scientists Exchange Program was put on hold, along with the Next Step initiative. We're working on plans to revive these in the coming year, through a creative approach to building connection. ATSE's annual joint symposium with the Chinese Academy of Sciences and the Australian Academy of Science has been deferred until 2022.

CONNECTING WITH INTERNATIONAL ACADEMIES

The annual symposium of the International Council of Academies of Engineering and Technological Sciences (CAETS) was hosted by Korea in October 2020 and conducted as an online event. The President and Chief Executive Officer attended virtually. Professor Hugh Bradlow presented to the CAETS plenary on the topic *Technology and the Pandemic: A Scorecard*. As Chair of the Communication Committee, Professor Bradlow also led the establishment of the inaugural CAETS Communication Prizes to acknowledge engineering success stories and high potential innovations.

SUPPORTING AUSTRALIA'S GLOBAL CONNECTIONS

The Global Connections Fund (GCF), funded through the Australian Government's National Innovation and Science Agenda, provides financial support to enable Australian researchers and SMEs to collaborate internationally, with a focus on research commercialisation. GCF was put on hold during the 2020-21 year due to challenges to international travel: we're preparing to launch the next round of the program in 2021-22, with the support of the Department of Industry, Science, Energy and

Technology. As part of the initial Global Connections Fund program, ATSE developed case studies of the grant recipients and their work: eight of these have been highlighted through a podcast series, *TechNOW*. The episodes are being rolled out in 2021-22 and are available on our website and on SoundCloud.

AUSTRALIA-KOREA TECH INITIATIVE

ATSE and its Korean partners worked throughout the year to create a "tech bridge" event, connecting Australian and Korean experts to share knowledge and explore potential collaborations in application of artificial intelligence to counter infectious disease. With support of the Australia-Korea Joint Committee on Science and Technology (JCST) and Australia's Department of Industry, Science, Energy and Resources (DISER), Defence Science and Technology Group (DSTG), and Korea's Ministry of Science (MSIT) and the National Research Foundation of Korea (NRF), the initiative was re-imagined to be staged as a hybrid event due to COVID-imposed restrictions on travel. Planning was finalised during the year, with the event to be held early in 2021-22 and hopes for an in-person event to follow.

WORKING WITH ASEAN EXPERTS

ATSE and the ASEAN Academy of Engineering and Technology (AAET) have entered into a memorandum of understanding to promote engineering and technology education, research and industrial collaboration between ASEAN countries and Australia. Initial work under the MoU has focused on STEM secondary education, and supporting AAET to create its own version of ATSE's tech economy reports.

INTERNATIONAL STEM EDUCATION

STELR continues to support schools, teachers and students around the world to implement hands-on, sustainability-focused STEM education, with a particular focus on supporting and enabling women and girls in STEM.

STELR's international professional development sessions through the year supported hundreds of teachers and Ministers of Education, across several nations including China, Malaysia and Indonesia.

Its resources have now been translated into Spanish and Bahasa Indonesia, and are in use across the Spanish-speaking world, as well as Indonesia.

Celebrate technology, engineering and innovation excellence

EVENTS AND OUTREACH

During the last year ATSE's events have adapted between in-person, online and hybrid delivery, as the changing circumstances of the COVID-19 pandemic have required. Our events have become more flexible and inclusive, reaching audiences across the nation who may have never attended in-person.

Events at a glance

- More than 60 events were held by ATSE through the year, covering a wide range of topics important to the ATSE fellowship and mission, and the future of Australia.
- Events have been strongly driven by State and Territory Divisions, who led organisation of half of all events in the last year.
- ATSE's Forums have increasingly hosted webinar series, with a highlight being the Agriculture & Food Forum series.
- STELR and IMNIS have connected with many school age children, PhD students and high calibre mentors over the past year, helping to strengthen the STEM pipeline.
- ATSE's Award and New Fellows events continue to be our flagships, and even in virtual/hybrid formats have drawn high profile speakers and significant audiences across Australia.

Event highlights include

- Public webinars on topics such as *Towards a waste free future*, *The science behind vaccines*, *Leading on gender equality to drive innovation*, and *Climate challenges and the path to mitigation*.
- Speeches including the NSW Chaikin Oration, STEM skills and investment, with Israel's Minister for Science & Technology Izhar Shay, and a series examining STEM careers in industry.
- ATSE's major annual national events announcing the 2020 New Fellows and ATSE Awards 2021.



Adjunct Professor
Leanne Kemp



Professor Alan Wong



(L-R) Professor Jonathan Baell,
Professor Anne Voss, and
Associate Professor Tim Thomas



Dr Kate Nguyen



Dr Anna El-Tahchy



Dr Lindsay Bell



Georgia Hunter



Hayden Robertson



Dr Luke Djukic

ATSE Awards 2021

ATSE's prestigious national awards recognise an outstanding suite of innovators and entrepreneurs, achieving across sectors and career levels in applied science, technology and engineering. They represent Australia's leaders and emerging leaders in STEM.

CLUNIES ROSS AWARD ENTREPRENEUR OF THE YEAR

Adjunct Professor Leanne Kemp for her work to support ethical consumerism by creating a way to provide a secure and permanent digital record of the provenance of objects.

CLUNIES ROSS AWARD INNOVATION

Professor Alan Wong, for his invention of Early Fault Detection technology which can identify fire-risk situations in power networks before they progress to failure.

CLUNIES ROSS AWARD KNOWLEDGE COMMERCIALISATION

Professor Anne Voss, Professor Jonathan Baell and Associate Professor Tim Thomas for the development of a new class of inhibitors which arrest the proliferation of cancer cells.

BATTERHAM MEDAL FOR ENGINEERING EXCELLENCE

Dr Kate Nguyen for the development of a light-weight, cost-effective, non-combustible form of cladding for buildings.

ICM AGRIFOOD AWARD

Dr Anna El-Tahchy is leading efforts to revolutionise the flavour and sustainability of plant-based food.

ICM AGRIFOOD AWARD

Dr Lindsay Bell is conducting world-leading research, helping dryland crop and livestock farmers manage climate variability.

EZIO RIZZARDO POLYMER SCHOLARSHIP

Georgia Hunter is working to improve the properties of multi-polymer materials.

EZIO RIZZARDO POLYMER SCHOLARSHIP

Hayden Robertson is improving the understanding of stimulus-responsive polymers to make smart interfaces with tuneable properties.

DAVID AND VALERIE SOLOMON AWARD

Dr Luke Djukic is improving the safety and efficiency of transporting dangerous goods.

New Fellows 2020

The following individuals were inducted as new Fellows in November 2020, recognised for their exceptional achievement in, and contributions to, applied science, technology and engineering.



Richard Bolt PSM FTSE
Climate policy expert
Principal, Nous Group and Adjunct Professor of Energy Transformation, Swinburne University of Technology (VIC)



Professor Vicki Chen FTSE
Chemical engineer
Executive Dean of Engineering, Architecture and IT, University of Queensland (QLD)



Professor Liang Cheng FTSE
Civil engineer
Winthrop Professor, University of Western Australia (WA)



Professor Alice Clark FTSE
Geologist and mining consultant
Deputy Director, Strategy Sustainable Minerals Institute, University of Queensland (NSW)



Adjunct Professor Trevor Danos AM FTSE
Lawyer, company director and strategic advisor
Chair, Northern Sydney Local Health District (NSW)



Distinguished Professor Kingsley Dixon FTSE
Biological scientist
John Curtin Distinguished Professor, Curtin University (WA)



Professor Renate Egan FTSE
Photovoltaic engineer
Professor, UNSW Sydney (NSW)



Professor Sally Gras FTSE
Biochemical engineer
Professor, University of Melbourne (VIC)



Professor Elanor Huntington FTSE
Quantum physicist
Dean, College of Engineering and Computer Science, Australian National University (ACT)



Dr Steve Jefferies AO FTSE
Grain-breeding expert
Former Managing Director, Grains Research and Development Corporation and former CEO of Australian Grain Technologies (ACT)



Professor Stuart Khan FTSE
Environmental engineer and public health advocate
Professor, UNSW Sydney (NSW)



Robert Klupacs FTSE
Health-tech industry leader
CEO, Bionics Institute (VIC)



Professor Andre Luiten FTSE
Precision measurement expert
Director, Institute for Photonics and Advanced Sensing, University of Adelaide (SA)



Professor Darren Martin FTSE
Materials Scientist
Professor, University of Queensland (QLD)



Gordon Naylor FTSE
Engineering technology investor
Retired President of Seqirus (VIC)



Dr Sarah Pearce FTSE
Astronomer and space technologist
Deputy Director, CSIRO Astronomy & Space Science (NSW)



Professor Simon Ringer FTSE
Materials Engineer
Academic Director, Core Research Facilities, University of Sydney (NSW)



Professor Shazia Sadiq FTSE
Data engineer
Professor and Director, University of Queensland (QLD)



Professor Cordelia Selomulya FTSE
Chemical engineer
Professor, UNSW Sydney (NSW)



Distinguished Professor Daichao Sheng FTSE
Geotechnical engineer
Head and Distinguished Professor, University of Technology Sydney (NSW)



Professor Mark Stewart FTSE
Risk assessment analyst
Professor, University of Newcastle (NSW)



Dr Vanessa Torres FTSE
Resource logistics expert
Chief Technical Officer, South32 (WA)



Professor Anton van den Hengel FTSE
Machine learning researcher
Co-Director, Australian Institute for Machine Learning, University of Adelaide (SA)



Professor Hala Zreiqat AM FTSE FAA
Biochemical engineer
Professor and Director, University of Sydney (NSW)



Professor Willy Zwaenepoel FTSE
Computer science researcher
Dean of Engineering, University of Sydney (NSW)

More information on each new Fellow can be read online atse.org.au/news-and-events/article/newfellows2020

Major partners and collaborators

ATSE would like to thank our partners and collaborators for their generous contributions to the Academy. It is with their support that we are able to achieve our mission in helping Australians understand and use technology to solve complex problems.



DONATIONS & CONTRIBUTIONS

The Academy acknowledges and expresses its gratitude to Professor Michael Keniger FTSE and all Fellows who have made donations and wish to remain anonymous. We also sincerely thank all Fellows who have donated their time, vision and expertise to the work of ATSE throughout the year.

Key people

All as at 30 June 2021

BOARD

President
 Vice President Diversity
 Vice President Membership
 Vice President Financial Sustainability
 Director
 Director
 Director
 Director
 Director
 Director and Chief Executive Officer

Professor Hugh Bradlow FTSE
 Dr Bruce Godfrey FTSE
 Professor Doreen Thomas AM FTSE
 Professor Iven Mareels FTSE
 Dr Carrie Hillyard AM FTSE
 Professor Mark Hoffman FTSE
 Dr Richard Sheldrake AM FTSE
 Dr Meera Verma FTSE
 Professor Paul Wood AO 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
 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 Barlow FTSE
 Professor Michael Miller AO FTSE
 Professor Peter Lee FTSE
 Dr John Soderbaum FTSE
 Sue MacLeman FTSE
 Dr Dimity Dornan AO FTSE
 Dr David Cook AO FTSE
 John McGagh FTSE
 Professor Ana Deletic FTSE

SECRETARIAT

Chief Executive Officer
 IMNIS Executive Director
 Director Engagement
 Director Business Operations
 Director Policy and Government Relations
 Acting Director Strategic Communication
 Acting Director STELR

Kylie Walker
 Dr Marguerite Evans-Galea AM
 Gita Karwal
 Glen Bortolin
 Alix Ziebell
 Liz Foschia
 Camille Thomson



Financial results

FOR THE YEAR ENDED 30 JUNE 2021

ATSE's financial results for the financial year ended 30 June 2021 are reflective of the continuing challenges faced by the Academy due to the COVID-19 pandemic. These include the prevention of "face-to-face" activities such as public outreach events; the Awards program; and annual dinner. Other major impacts on the financial results include an inability to generate sponsorship income from face-to-face major events (due to COVID-19) and a shortfall against the partnerships budget due to recruitment delays. Conversely, there have been savings in event activity costs and travel costs.

The Job Keeper scheme which ceased in September 2020 has assisted ATSE enormously to offset the financial result. Our balance sheet continues to remain strong with the performance of the investment portfolio exceeding expectations for the past 12 months. The ATSE Board has approved a break-even budget for the financial year 2021-2022 which is part of a three-year strategy towards recovery in 2022-2023 and to achieve financial stability, post the pandemic.

PROFIT & LOSS STATEMENT

Statement of profit or loss and other comprehensive income for the year ended 30 June 2021

	2021 \$	2020 \$
REVENUE	3,943,568	5,951,029
EXPENSES		
Administration Fund	(2,750,098)	(2,521,710)
Investment Fund	(768,548)	(451,407)
Policy & Government	(466,735)	(308,711)
International	(53,122)	(2,023,463)
Education	(610,840)	(594,207)
Events	(203,083)	(5,646)
	(4,852,426)	(5,905,144)
(LOSS) / GAIN FOR THE YEAR	(908,858)	45,885
OTHER COMPREHENSIVE INCOME		
Fair value gains on financial assets at fair value through other comprehensive income	946,223	(222,212)
Other comprehensive income for the year	946,223	(222,212)
TOTAL COMPREHENSIVE INCOME / (LOSS) FOR THE YEAR	37,365	(176,327)

	2021 \$	2020 \$
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	1,240,158	1,801,080
Trade and other receivables	376,505	286,021
Financial assets	800,516	834,088
Other assets	230,726	125,395
TOTAL CURRENT ASSETS	2,647,905	3,046,584
NON-CURRENT ASSETS		
Financial assets	7,848,327	7,121,194
Plant and equipment	231,399	264,997
Right of use assets	1,129,670	366,603
Intangible assets	—	5,289
TOTAL NON-CURRENT ASSETS	9,209,396	7,758,083
TOTAL ASSETS	11,857,301	10,804,667
LIABILITIES		
CURRENT LIABILITIES		
Trade and other payables	403,645	293,007
Income in advance	1,209,856	1,109,452
Lease liabilities	358,918	149,735
Provisions	165,325	130,976
TOTAL CURRENT LIABILITIES	2,137,744	1,683,170
NON-CURRENT LIABILITIES		
Provisions	13,731	11,129
Lease liabilities	801,043	242,950
TOTAL NON-CURRENT LIABILITIES	814,774	254,079
TOTAL LIABILITIES	2,952,518	1,937,249
NET ASSETS	8,904,783	8,867,418
EQUITY		
Reserves	1,578,849	1,159,035
Retained surplus	7,325,934	7,708,383
TOTAL EQUITY	8,904,783	8,867,418

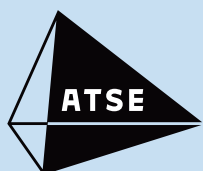
Vale

The Hon. Douglas Anthony CH AC FTSE
 Dr Terrence Cutler FTSE FAHA
 Menno Henneveld AM FTSE
 Emeritus Professor Alban Lynch AO FTSE
 Dr Maurice Mulcahy FTSE
 Chloe Munro AO FTSE

Professor Brian O'Brien AO FTSE
 Emeritus Professor Owen Edward Potter AM FTSE
 John Watt AM FTSE
 Dr Roy Woodhall AO FTSE FAA
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