AUSTRALIAN ACADEMY OF SCIENCE
2019 FEDERAL ELECTION STATEMENT

Australians have every right to expect a coherent and visionary plan to establish a secure, sustainable and prosperous nation. There are no short cuts, there is no room for complacency, and no scope for inertia.

In an increasingly uncertain and challenging world, we Australians will need to make every effort to build an economy and a workforce able to support the future we choose: a future that will be heavily constrained by national and global factors.

Science, technology, engineering and mathematics (STEM) underpins almost every aspect of societal advancement—from solving major global problems to spawning new businesses, keeping existing ones competitive and creating jobs. It will be a fundamental foundation on which our chosen future will be built.

For the purpose our document 'science' means the fundamental scientific disciplines including mathematics.

The Australian Academy of Science recommends that a high-quality science sector include policies to develop the key interdependent elements elaborated in *Earning our Future – the platform of the Australian Academy of Science*.

PRIORITIES FOR STEM IN AUSTRALIA

The Australian Academy of Science's position is that Australia requires stable, predictable and strategic investment in STEM to reap the benefits that flow from its legitimate and expected role in the development of Australia and its place in the world.

In summary the Academy's **recommendations** and **shared commitments** follow:

1. A SHARED COMMITMENT

> *A declared relationship between scientists and government—based on trust, respect and mutual obligation—will benefit the Australian community.*

Recommendation 1: Development of a charter in which the expectations and obligations of scientists to the Australian people are clearly established and the commitments and reciprocal responsibilities of scientists and government are declared.

The Academy stands ready to assist the Australian Government in developing such a charter.

Recommendation 2: The Academy, drawing on expertise as required, will support:

a. the Commonwealth Science Council by providing independent and timely scientific advice on matters referred to it

b. all parliamentarians through the provision of independent, accessible and timely reviews of the scientific evidence base that underpins legislation before the Australian Parliament.

Investment: $16 million over 4 years.

2. NATIONAL CAPACITY BUILDING IN STEM

> *Australia's capacity in science must have the breadth and depth that will allow our community to make rational decisions about our future when given choices, while making a valuable contribution to the search for effective solutions to great global challenges.*

Recommendation 3: The Australian Government supports the Academy's proven STEM education programs so as to reach substantially more schools, teachers and students in Australia with a focus on professional learning for teachers.

Investment: $21.8 million over 4 years.

Recommendation 4: A strategy should be developed that aims to:

a. double the present success rate of research proposals by Australia's research councils from the present 20%

b. cover the full direct and indirect costs of research

c. provide longer-duration research grants, with a focus on providing five-year grants and fellowships to early- and mid-career researchers enabling more ambitious research to be undertaken

d. enable diverse career paths and opportunities for STEM graduates.

Investment: The Academy strongly argues that Australia should increase expenditure on research and development from all sources to 3% of GDP over a decade.

Recommendation 5: Acknowledging the Australian Government's existing research infrastructure commitments, a further investment of $1.85 billion is required, through a long-term mechanism such as an Australian National Research Infrastructure Investment Fund, to meet the Clark Review recommendations.

Recommendation 6: The Academy will participate in the development of an international engagement strategy for science, technology and innovation with long-term resourcing to:

a. maintain participation in key international decision-making science bodies

b. support bids to attract international scientific conferences to Australia, an investment with a proven multiplier effect for the economy

c. contribute to bilateral and multilateral partnerships and research programs where they align with research priorities, or serve our diplomatic objectives

d. allow Australia to meet its agreed Sustainable Development Goal obligations

e. develop a program for early- and mid-career researchers to establish partnerships with international leaders in their field, building networks that will be beneficial to Australia

f. expand the network of science counsellors and attachés in Australian embassies in priority countries and regions around the world

g. target programs to provide scientific support to assist Australian foreign affairs and trade policy objectives.

Investment: $150 million over 10 years.

Recommendation 7: Allow Australia to draw from all the talent available by:

a. supporting the national roll out of SAGE[1] and placing it on a self-sustaining footing within a 10-year period in partnership with the higher education and research sector

b. facilitating action for all stakeholders through the Women in STEM Decadal Plan[2]

c. facilitating an Indigenous STEM Network to assist participation of Aboriginal and Torres Strait Islander students and STEM professionals

d. focusing on regional and remote Australia; professional development and support for STEM teachers; and curriculum resources

e. ensuring that investment in facilities are appropriate—and are used appropriately—for the teaching of science and mathematics so that it's engaging, enlightening and contemporary.

Investment:

- investment by the Australian Government of approximately $18 million over 10 years to allow the SAGE pilot to be rolled out nationally and be self sustaining by 2030.
- investment of $1 million per year to develop a culturally appropriate and targeted program to support Aboriginal and Torres Strait Islander people in STEM.

3. SCIENCE FOR COMMUNITY BENEFIT

> *The community has a right to expect that it will draw value from its investment in science.*

Recommendation 8: The Australian Government develops, in consultation with this Academy and other learned academies, a best practice framework for responsible research and innovation to guide Australian research and innovation including:

a. guidance on ethical pursuit and use of science and technology

b. approaches to transparency and evaluation through open science and open data

c. facilitation of a constant and direct dialogue between researchers and the community.

Recommendation 9: The Academy encourages the Australian Government to embed strategic national research priorities in a comprehensive science strategy including resource commitments.

Recommendation 10: The Australian Government comprehensively reviews the structure, and evaluates the effectiveness of, research support and incentives to ensure maximum benefit can be returned.

1 https://www.sciencegenderequity.org.au/
2 Women in STEM Decadal Plan. https://www.science.org.au/support/analysis/decadal-plans-science/decadal-plan-women-stem