

Survey Report

Award Representation and Media Engagement by South Australian Scientists

**Conducted by the Department of State Development and Inspiring
South Australia**

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1 EXECUTIVE SUMMARY

This report summarises findings from a survey conducted by the Department of State Development and Inspiring South Australia. The survey had two broad aims. The first was to identify ways to increase the number of South Australian scientists applying or nominating for major science-related awards. The second aim was to assess current levels of public engagement by South Australian scientists. The survey was completed by 151 respondents, comprising mostly post-PhD researchers from the university sector.

Major-science related awards are valuable tools that contribute to researchers' success by making them more competitive in other funding schemes and raising their career profiles. Despite this, only about half of respondents had applied or nominated for awards. The time required to apply for awards was seen as a major barrier. However, lack of belief in competitiveness, awareness and encouragement from senior researchers were also barriers. Respondents also stated that awards criteria do not adequately recognise their research output, indicating that awards needed to acknowledge team-based projects, leadership, mid-career researchers and research at a state-level.

Promoting research output can boost the research profile of scientists in South Australia. Almost all respondents reported promoting their research in some capacity, largely through traditional methods such as academic publications and conferences. Some respondents promoted their research through their institution. However, beyond research promotion, respondents reported lower levels of participation in media engagement and events such as interviews and articles in newspapers, public lectures and television appearances. The biggest barrier to participation in media engagement and events was time, lack of awareness and lack of training in media and public speaking. Respondents indicated that more training, awareness and invitations could support higher participation rates.

Respondents were also asked to identify ways to reward and promote scientists in South Australia. Respondents identified a brain drain of scientists and PhD students occurring in South Australia, which contributes to stagnation of science in the state. Thus, increased funding and job security were cited as key measures to retain and reward scientists. Respondents also indicated that the Government should prioritise science through the appointment of a Science Minister and state-based funding.

The promotion of scientists in South Australia could be increased by offering media training. Responses also indicate that institutional recognition and more accurate portrayal of science and scientists in the media would be beneficial to increase promotion. This report will assist institutions, decision-makers and scientists seeking greater representation of scientists within the sector and in the public sphere.

2 BACKGROUND

In April 2017 The Department of State Development (DSD) and Inspiring South Australia (ISA) developed a survey to better understand science engagement in South Australia. The aim of the survey was to address the underrepresentation of South Australian scientists in major national award schemes (see Appendix) and to assess the current levels of media and public engagement by South Australian STEM practitioners. The survey addressed this by asking questions to identify:

- the proportion of STEM researchers that have applied or been nominated for major awards
- the proportion of STEM researchers engaging with the public through media opportunities or events
- Barriers to apply or nominate for awards or to engage with the public through media opportunities or events
- Support tools that could assist STEM researchers to apply or nominate for awards or engage with the public through media opportunities and events

Results from the survey and this report will assist institutions, decision-makers and scientists seeking better representation of scientists in major, national, science-related awards and increased public engagement through the media and public-facing events.

3 SURVEY METHODOLOGY

The survey questions were developed by staff from DSD and ISA and presented on the online platform Survey Monkey. The target audience of the survey was scientists working in South Australia, regardless of their institution (e.g. university, industry, etc). The survey was promoted through the DSD and ISA websites and newsletters. Emails were circulated through Government databases. The survey attracted 151 respondents. Data collected from the survey were collated by Survey Monkey and analysed by ISA.

4 SURVEY POPULATION

A total of 151 respondents completed the survey including 55% men and 45% women. The age of most respondents was between 25 and 64 years (91%), skewed towards younger age brackets of 25 – 34 years (24%) and 35 – 44 years (36%).

Education and employment levels were high. Most respondents had completed a PhD (84%) and were in full-time employment (79%) at a university (72%). Respondents identified mostly as early-to-mid career researchers (57%) and senior researchers (38%).

The types of employment position varied. While many respondents were based in a lab (66%), management and administration (17%) positions were also common. Other activities (34%) were detailed by respondents as either research-based in offices (e.g. computation), clinical research, teaching, project management, engineering, commercialisation, analysis and outreach, or a mixture.

5 SURVEY RESULTS

5.1 Applying or Nominating for Awards

One of the survey aims was to address the underrepresentation of South Australians in major science-related awards around Australia. To achieve this, respondents were first asked about previous engagement with major awards and the value of applying and winning.

Respondents source information about awards from multiple sources, though most at least obtained official information from their institution (85%). Respondents also used their own initiative to search for information (62%) and relied upon word of mouth from colleagues (59%). Social media was also a source of information for some respondents (44%).

There was an almost even-split of respondents that had (45%) or had not (55%) applied or been nominated for state or national science-related awards. Of the respondents that had applied or been nominated, 62% were successful, while 38% were not.

Successful winners of awards seemed to appreciate the value of winning awards as it validated their research, teaching or outreach output. Winning awards was also viewed as a step towards advancing one's professional career by making them more competitive in other funding schemes.

While positive outcomes were noted, the value of applying for awards was questioned if the outcome was unsuccessful. The time taken to apply and the lack of constructive feedback from unsuccessful applications were cited as inhibitors to applying for future awards. Additionally, award schemes were sometimes seen not to value hard work, but to award good promotion:

"I find awards are a necessary evil. In my opinion, the fact that you have to nominate yourself for most awards significantly devalues their true relevance. However, I fully appreciate that a positive outcome can be a significant boost to your career prospects. The reality is that most award winners are those with the greatest skill in self-promotion rather than the highest levels of achievement."

The value of applying for awards must also be considered amongst respondents that have not applied or been nominated for state or national science-related awards (55%). This may be explained by various barriers that respondents identified.

All respondents were asked about barriers to applying for awards, regardless of whether they had or had not applied or nominated for awards. A summary showing the top barriers is shown in Figure 5.1.

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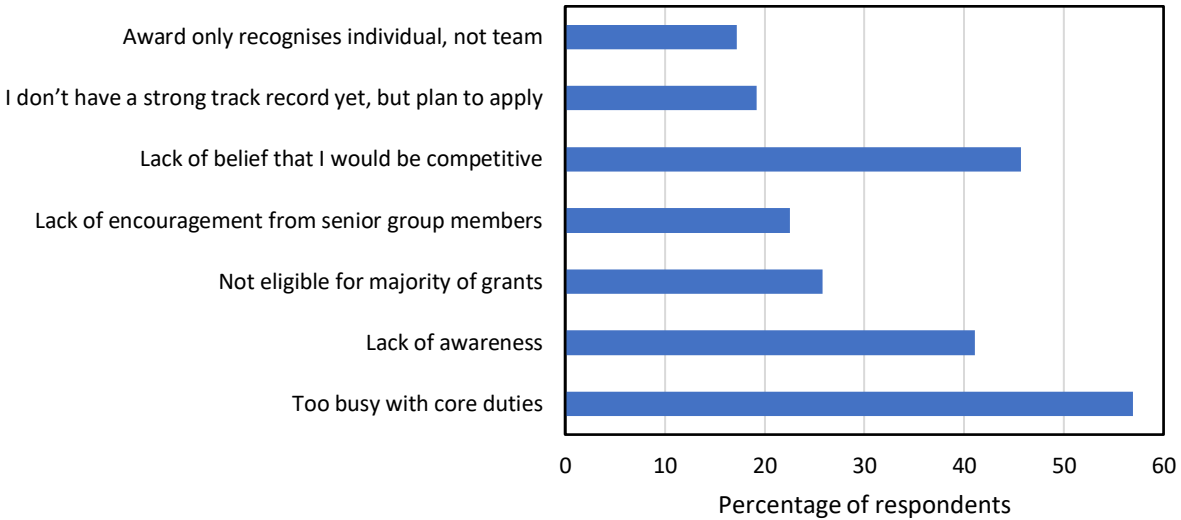


Figure 5.1: Top barriers to applying or nominating for science-related awards

Time was identified as a significant barrier for most respondents (57%), followed by a lack of belief in competitiveness (46%), lack of awareness of awards (41%) and lack of encouragement from senior researchers (23%).

Additionally, some respondents highlighted their ineligibility for awards (25%). In some of these cases, this was due to respondent's role being largely managerial. The ineligibility for awards may also be due to criteria excluding a larger number of researchers. This sentiment is described:

"Many of the state research awards exclude university-based researchers in their eligibility criteria, so even if you are doing brilliant research and getting national recognition, there is no state award you can apply for."

Finally, several comments highlighted the need for awards to recognise scientists across all stages of research careers, especially mid-career researchers:

"There seems to be a lack of grants/awards available for researchers in the mid career phase, they are no longer eligible for early career grants/awards as they are more than 3-5 years post-PhD, but still 10-20+ years too junior to apply for senior researcher awards and grants."

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Respondents also did not feel comfortable applying for awards that were limited to personal recognition, rather than a whole-team achievement (17%), perhaps reflecting the increasing collaborative and interdisciplinary nature of science research.

While it is important to identify barriers to applying or nominating for awards, it is prudent to mention that some respondents may not be interested in pursuing an academic career and thus, do not see the advantage in applying for awards.

5.2 Promotion of Own Research

The survey aimed to identify the levels of public engagement undertaken by South Australian scientists. Respondents were first asked about the promotion of their own research including the type and frequency of promotion. A summary of respondent's research promotion activities is shown in Figure 5.2.

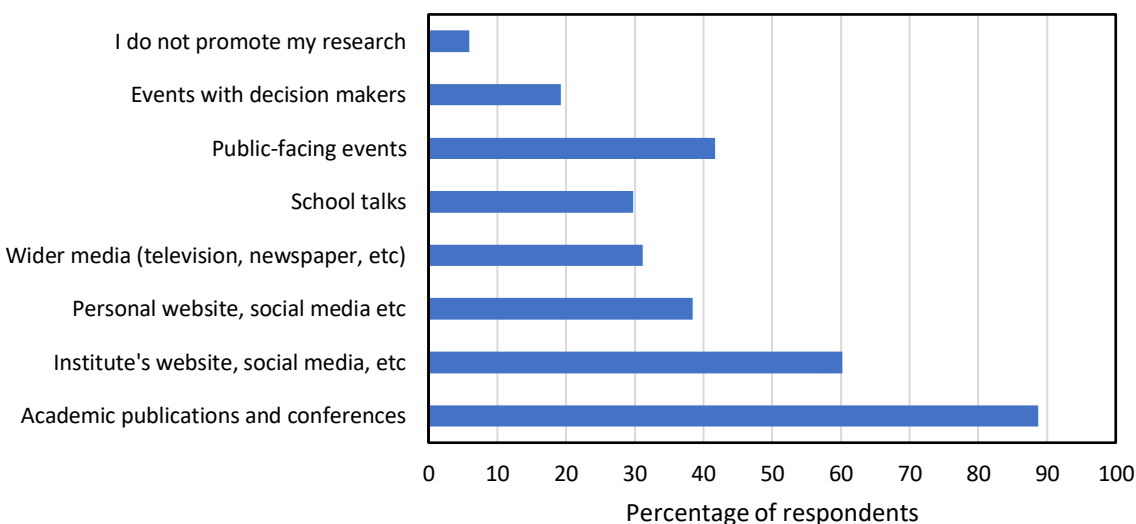


Figure 5.2: Research promotion activities undertaken by respondents

Almost all respondents reported promoting their own research in some capacity. Promotion of respondent's research was largely confined to traditional methods such as academic publications and conferences (89%) and through their institution (website, social media, newsletters, etc) (60%). Many respondents also promoted their research through public-facing events (Institution's open days, public lectures, panel discussions, etc) (42%) and school talks (30%).

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Some respondents promoted their research beyond their institution, through traditional media (television, newspaper, magazines, online publications, etc) (31%) and new media such as personal websites and social media (38%). Only a few respondents reported promoting their research to decision makers (through advisory councils, Science Meets Parliament, etc) (11%), although some respondents present at industry events (up to 11%). Only 6% indicating that they undertake no promotional activities. However, this may reflect respondent's in managerial or administrative positions.

5.3 Participation in Media Opportunities and Events

Promotion of one's own research is just one avenue of public engagement. The survey further asked about all types of media opportunities and events that respondents participate in to engage the public. A summary of the top media opportunities and events is given in Figure 5.3.

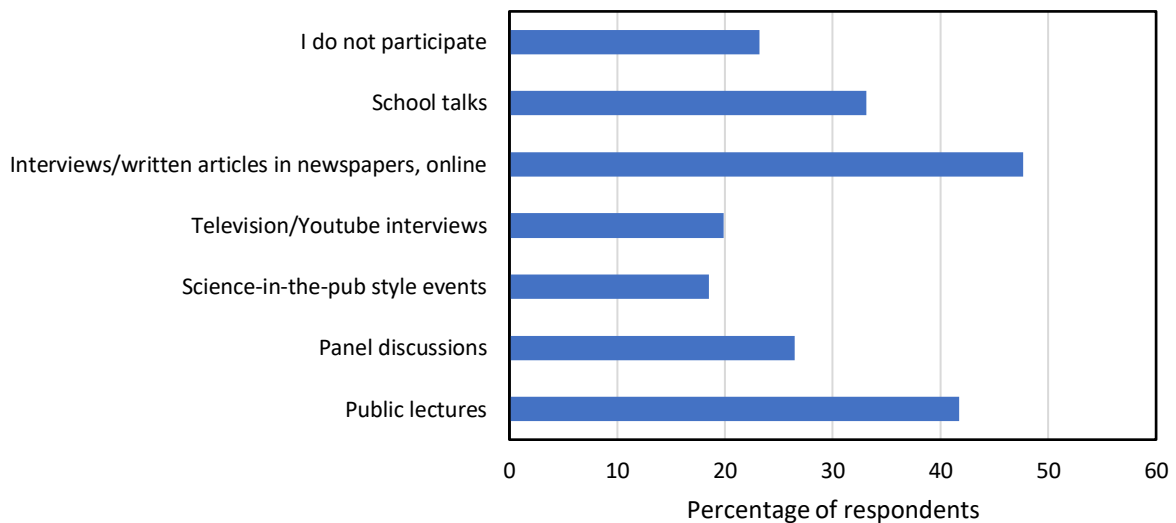


Figure 5.3: Top media opportunities and events undertaken by respondents.

Interviews or written articles in newspapers, magazines and online publications was the most popular type of engagement (48%), followed by public lectures (42%), school talks (33%), panel discussions (26%), Science in the Pub-style events (19%) and television or Youtube interviews (20%). Despite the variation, 23% of respondents do not participate in any engagement.

The frequency of public engagement was varied amongst the respondents. Most respondents participated in engagement at least every 6 months (22%) and 2-3 months (21%). Some respondents participated yearly (17%). Some respondents indicated substantial media and event participation on a monthly (11%) or weekly (7%) basis.

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Respondents were also asked to identify barriers to participating in media opportunities or events. Unsurprisingly, time was identified as the biggest barrier (30%), followed by lack of awareness (13%), lack of training in public speaking (11%) and lack of motivation (7%). Only 7% of respondents reported not facing any barriers.

It is likely that respondents would have cited more barriers, however, multiple options were not enabled for this question. Respondents' comments point to multi-factor barriers that prevent participation:

"It is a combination of factors like lack of time to attend training in public speaking and lack of time to engage in public speaking as it takes a lot of my energy to do so."

"It's important to recognise that most scientists are very time poor and serve many competing interests, and that this gets worse as admin, support and lab tech jobs continue to erode and as mundane duties are loaded onto scientists. In essence, media & public engagement in many instances might not be seen as core business but one of many distractions that adds little value."

While many respondents identify significant barriers, most were interested in more engagement with media or the public (50%). Some were unsure of their interest (39%) while only a few respondents were not interested (11%). Therefore, to overcome some of the barriers, respondents indicated that more media training (20%), awareness (11%) and invitations (24%) could support higher participation rates. Encouragement from senior researchers (7%) and institutions (7%) were also viewed as a way to boost participation, demonstrated by respondent comments:

"I don't think our organisation publicises our research as well as it could and doesn't seem interested in ideas put forward to improve promotion. Focus seems to be on a select few."

5.4 How can scientists and their work be better rewarded and promoted in South Australia?

To address the key aims of the survey, respondents were asked to identify ways in which they may be better rewarded and promoted in South Australia. This question was open-ended and was answered by most respondents. The responses have been collated and broadly classified under seven categories.

5.4.1 Training

Training was identified as a way to encourage researchers to engage in more promotion. This included training in social media for science communication and media training. Specific training for senior researchers was idea also identified, which may help to encourage younger researchers' media activities:

“Also provide training to senior researchers who may be hesitant to embrace social media and/or even traditional media to encourage them to be involved or at least help show them the benefits and encourage them to allow their PhD students and EMCR researchers to be more actively involved in science communication.”

Mentoring opportunities were also identified as a way to help researchers build their careers and profiles, assisting them to be more competitive for awards and grants. Some respondents identified the need for a state-based science network to disseminate research.

5.4.2 Recognition

Respondents identified that recognition from their institution or employer was needed for more communication activities to occur more frequently. This recognition would also potentially solve issues to do with time, which was identified as a major barrier to participating in media opportunities or applying for awards. This is demonstrated by responder comments:

“Give people an incentive to spend their time doing these activities. Research is highly competitive and there are many time-consuming aspects to maintain momentum. Taking time out to publicise findings takes us away from activities that allow us to get funding to support our salaries and research.”

5.4.3 Broaden Scope of Awards

More applications and nominations for major awards may be received if the scope of awards was broadened. Respondents identified several gaps in award categories such as a lack of awards and support for mid-career researchers. Respondents indicated that many awards and opportunities are for early-career or senior researchers, with few opportunities for mid-career researchers that require support and recognition to transition to the next stage of their career:

“most of all awards are limited to early career researchers (5 years or less). There is very little opportunity for mid-career researchers to go for awards/grants even though we are still struggling to be competitive in major granting schemes.”

Award categories were also identified as a barrier to apply or nominating for awards. Respondents requested that awards recognise team work and leadership skills, as some respondents feel bad claiming a sole prize that was the result of team work. Residency requirements of awards were also cited as issues, as some respondents could not satisfy permanent residency requirements.

5.4.4 Fund Research

Respondents did not necessarily want more recognition from awards, instead identifying job security as the best reward.

The biggest reward to me is to get my work funded! As long as I'm employed and doing what I love then I'm happy.

Increased funding was also identified as a reward. The increased funding could be in the form of grants allocated to long (10 year), risky projects, to the commercialisation of research, to projects fostering cross-institutional collaboration (beyond research institutes) and for projects tackling South Australia's big issues. This is exemplified by responder comments:

“Points for improvement would be introducing more grant schemes that foster cross-institutional collaborations between researchers who do not already have established working relationships from the major Universities and research institutes. it would be beneficial if these grant schemes also had a particular focus on South Australia's big problems, "innovative ideas" and translation of research into practice, product or policy.”

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“What is lacking is the motivation for scientists to take their work forward to a commercial outcome for the greater good of the State.”

Increases in job security were seen as needed to foster cultural change within the science sector, increasing the well-being and productivity of scientists. This is demonstrated by responder comments:

“Reward scientists by helping to decrease the time spent on grant applications and administrative tasks. Many senior PIs spend >50% of their time on these tasks rather than using their skills. Identify excellent scientists and reward them by allowing them to undertake risky, long-term (e.g. 10 yr) research.”

“greatest issue facing scientists in SA is the extreme competition and outrageous expectations in the sector. We are sacrificing our family time and personal health to meet an increasingly diverse range of KPIs.”

5.4.5 Better Promotion in Media

Scientists’ portrayal in the media was identified as a way to improve promotion in South Australia. Respondents identified that a lack of media attention and an accurate portrayal of research contributes to the public misunderstanding the value of science in the community. Addressing these issues was seen as a way to bring the work of scientists to the forefront of the public’s attention. This sentiment is demonstrated by respondent comments:

“Media and politicians need to support and promote science positively and with trust. The value of South Australia’s research needs positive and accurate portrayal. In many countries, scientists are highly respected because of how the benefits of research are portrayed (this has not been my experience in Australia).”

Other respondents identified practical measures that could be taken to increase scientist’s engagement with the media. This includes combining media interviews with public engagement activities, reducing the time-burden for scientists:

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“Print press, radio, TV are staff and time poor and respond to being regularly fed bite sized pieces in the form of press releases. Other public engagements (eg. town halls, school visits) are essential esp. for the personal touch that people respond to best - but requires a large time investment to reach relatively fewer people than mass media. Consider combining the two. For example, roll out an engaging researcher to a school event to announce a key break through, invite the media along and give them the materials (press release, additional footage, images, quotes) that they need to make a great story.”

5.4.6 Government Representation

Better promotion of scientists may be achieved by addressing science within Government. Respondents identified the need for a dedicated science minister, who understood and was interested in STEM. Some respondents went further, identifying a need for broader representation of scientists across government:

Making a determined, concerted, long term effort to get a much larger proportions of state MPs with serious science backgrounds would probably be a good idea

Other respondents identified practical solutions that the State Government could undertake, including an SA Scientist of the Month on social media that would raise awareness of what a scientist does, while promoting the work of the state’s scientists.

5.4.7 Brain Drain in South Australia

The research climate in South Australia was seen as declining by some respondents, indicating that many researchers were leaving, but not returning, leading to a brain drain in the state. This sentiment suggests that research is not well rewarded or promoted in South Australia and requires addressing. This is demonstrated by responder comments:

“On the ground science in SA is struggling. Anecdotally the best and brightest are leaving and there is a general air of stagnation. SA has many advantages and can use these to spring over the other states to attract back mid-career researchers.”

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Various solutions were suggested by respondents including relocation incentives to move to Adelaide, foster collaborations between South Australia and the world and encourage international researchers to speak in Adelaide. The need for state-based funding was also identified:

“Research funding opportunities for SA researchers are also quite limited, particularly compared with other states - with a lack of local research funding, being competitive for larger scale national funding is difficult”.

6 CONCLUSION

This report analysed survey responses from South Australian scientists about applying or nominating for major science-related awards and engaging the public through media opportunities and events. There was an almost even-split in the number of respondents that had and had not applied or nominated for major science-related awards. While the value of winning awards was acknowledged, the time taken to apply was identified as the most significant barrier to applying or nominating.

Promotions of respondent's own research was near-universal, however, participation in media opportunities or events to engage the public were lesser. Again, time was the most significant barrier preventing further public engagement. Respondents indicated that more media training, awareness and invitations could boost engagement.

Finally, respondents were asked how their work could be better rewarded or promoted in South Australia. Responses were diverse and included more media training and institutional recognition, broadened scope of awards criteria, increased funding and job security, better media representation and better representation within Government.

This report will assist institutions, decision-makers and scientists seeking greater representation of scientists within the sector and in the public sphere.

7 SURVEY QUESTIONNAIRE

Q1 What is your age (single choice)

- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65-74 years old
- 75 years or older

Q2 What is your gender? (single choice)

- Male
- Female
- Unspecified

Q3 What is the highest level of education you have completed? (single choice)

- High/Secondary school
- Certificate
- Bachelor
- Master
- PhD

Q4 What is your current employment? (single choice)

- Full-time employed
- Part-time employed
- Retired
- Unemployed
- Casual
- Student

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Q5 What best describes your current industry? (single choice)

- University
- Research provider
- Public sector
- Industry
- Government
- Non-government organisation
- Other (please specify)

Q6 Describe your current position (single choice)

- Lab based
- Field based
- Management or administration
- Teaching
- Other (please describe)

Q7 What career stage do you most closely identify? (single choice)

- Student
- Early to Mid Career
- Senior Researcher

Q8 If you have a PhD, how many years post conferral are you? (single choice)

- 1-5
- 5-10
- 10-20
- 20-30
- 30+
- Not applicable

Q9 Have you ever applied for or been nominated for a state or national science-related award? (single choice)

- Yes
- No

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Q10 If yes, were you successful? (single choice)

- Yes
- No
- N/A

Q11 Has the outcome affected your interest in applying for subsequent awards? (single choice)

- Yes
- No

Q12 Where do you source grant and awards information? (choose all that apply)

- Official Information from the Institution/University staff email newsletters
- Informal information/word of mouth from colleagues
- Own research and initiative searching for potential grant/award opportunities online
- Social media (from colleagues as well as from the funding bodies and universities promoting various awards/grants e.g. Tall Poppy, Science Excellence awards, NHMRC, Fame Lab, 3MT, Eureka)
- Other (please specify)

Q13 What are your barriers to applying for awards and recognition? (choose all that apply)

- Too busy with research/admin/teaching/core duties
- Lack of awareness of grants/awards to apply for
- Don't read the University/Institution staff email newsletters which advertise the grants/awards to apply for, therefore don't find out until the last minute
- Not eligible to apply for majority of grants (e.g. you are a researcher involved heavily in research admin/management rather than lab work and therefore don't have a track record competitive with a lab-based researcher)
- Lack of motivation or low on priority list
- Lack of active encouragement or support/mentorship from senior members of research group
- Active discouragement/blocking by more senior members of research group
- Lack of encouragement or support from the University research branch or admin teams
- Lack of belief that I would be competitive, and don't want to waste time applying if I don't think I am in with a real chance
- I don't have a strong track record yet, so you haven't applied yet but plan to do so in future
- I don't have a strong track record yet, so I ghost-write or contribute to grants which are submitted by more senior researchers without you name listed as an investigator

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- I would like more help to assist in communicating my research to a non-specific audience or an opportunity to read successful past award or grant applications to see what is the expected quality and scope of competitive applications
- My work is a team effort so I don't feel comfortable applying for an award limited to my personal recognition

Q14 How do you promote your research? (choose all that apply)

- Academic publications and conferences
- Institute's website, social media accounts, newsletter, etc
- Personal website, social media accounts, etc
- Wider media (television, newspaper, magazines, online publications, etc)
- School talks
- Public-facing events (Institution's open days, public lectures, panel discussions, Science in the Pub-style events, etc)
- Events with decision makers (advisory councils, Science Meets Parliament, etc)
- I do not promote my research
- Other (please specify)

Q15 Which of the following media opportunities or public-facing events are you involved in? (choose all that apply)

- Public Lectures
- Panel Discussions
- Science-in-the-pub style events
- Television/Youtube interviews
- Interviews or written articles in newspapers, magazines, online publications
- School Talks
- I do not participate
- Other (please specify)

Q16 What barriers do you face that prevent your engagement with the media or public? (single choice)

- Lack of motivation/low on priority list
- Lack of active encouragement/support/mentorship from senior members of research group
- Lack of time
- Lack of training in public speaking and media
- Active discouragement/blocking by more senior members of research group
- Lack of encouragement/support from the University research branch/admin teams
- Lack of awareness of events

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- Shy
- Research not perceived to be interesting
- Other (please specify)

Q17 How often do you engage with the media or participate in public-facing events to promote your research? (single choice)

- Weekly
- Monthly
- Every 2-3 months
- Every 6 months
- Yearly
- I do not participate

Q18 Would you be interested in more engagement with the media and public? (single choice)

- Yes
- No
- Maybe

Q19 What training or incentives would you need to further engage with the media or public?

- Media training
- Active encouragement/blocking by more senior members of research group
- Encouragement/support from the University research branch/admin teams
- Awareness of events
- Invitations to events
- Financial resources
- Other (please specify)

Q20 How can scientists and their work be better rewarded and promoted in South Australia? (open-ended)

Q21 Any other comments (open-ended)

8 APPENDIX

8.1 Representation of South Australians in Major, National, Science-Related Awards

The representation of South Australian scientists in major, national, science-related awards was investigated. Inspiring South Australia compiled a comprehensive list of STEM research, teaching, communication, journalism and arts awards and award winners. The number of South Australian award winners were tallied for major, national, science-related awards for at least the past 5 years. The proportion of winners were compared to the population share of South Australia. The results are summarised in Table 8.1.

Table 8.1: Total number of South Australian award winners for major science-related awards in Australia.

Award	Organisation	Year Range	Total no. Awards	SA winners
Honorific Awards	Australian Academy of Science	2013 – 2017	83	2
Academy Medal	Australian Academy of Science	2006 – 2017	6	0
Eureka Prizes	Australian Museum	2012 – 2016	88	3
Prime Minister's Prizes for Science	Australian Government	2012 - 2016	28	3
Florey Medal	CSL	1998 – 2015	10	1
Lifetime Achievement Awards	Australian Academy of Technology and Engineering	1999 – 2015	14	2
Clunies Ross Awards	Australian Academy of Technology and Engineering	2010 – 2016	42	4

In summary, 15 major, national science-related awards were handed to South Australians out of a possible 271 awards, a success rate of 5.55%. This statistic is compared against the South Australian popular share of approximately 7%. Thus, there appears to be an underrepresentation of South Australian scientists in major, national, science-related awards.

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