



Response to the implementation paper: 'Growing industry internships for research PhD students through the Research Training Program'

6 August 2021

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To the Department of Education Skills and Employment,

Thank you for the opportunity to offer feedback on your implementation paper: '[Growing industry internships for research PhD students through the Research Training Program](#)'.

Science & Technology Australia broadly supports the introduction of an industry internship program as part of the Research Training Program.

It has potential to enhance industry-applied skills for research students during their higher degrees. It could also help to forge stronger links between universities and industry partners.

While STA supports this overall proposal, the key goal of this policy shift should be to grow the number of industry internships across Australia overall. Over the past five years, other industry internship programs ([iPrep](#) and [APR Interns](#) to name a few) have created placement opportunities for higher degree students. **The goal of any new initiative should be for the Government to fund the creation of extra places - rather than shifting existing internship places between schemes.**

To build on current success without duplicating existing work, STA makes the following recommendations **to enhance the flexibility of the proposed scheme.**

We propose the Australian Government:

- require universities to add to the timeframe for a student stipend when they do an industry internship (extend the stipend time by the same length as the internship);
- make the completion of an industry internship a demonstration of the 'transferable skills' requirements of a PhD;
- create more flexibility in the timing of internships during a PhD (internships should be able to occur at any point in the PhD as long as an agreement between the student and industry partner is made in the first 18 months from the student's commencement date);
- allow students to do industry internships in a field outside of their research ('non-cognate internships') to expand their skills;
- ensure these internships do not displace or replace other existing internship programs; and
- boost funding investment in the Research Block Grants and Research Training Programs as part of the next Budget cycle.

Along with these recommendations, STA would like the final implementation guide to clarify:

- whether industry-partnered PhD research would be counted as internships;
- what standards would be used to ensure a quality internship experience;
- what controls would exist to ensure students are supported through unpaid internships;
- whether international students would be allowed access to this program without risking their visa-imposed work limits; and
- whether international industries would be included as options for internships.

We thank the Department for this opportunity and welcome any further engagement about our recommendations.

Yours sincerely,

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Support for industry internships

STA supports the proposed incentivisation of industry internships in the Research Training Program. The benefits of industry internships extend beyond producing more industry-ready PhD candidates. They also offer another vehicle to encourage industry to 'lean in' more to universities - and foster a stronger culture in Australia of industry-to-research links.

Such links are especially important in science, technology, engineering, and mathematics (STEM). STA has been a leadership voice advancing a vision for Australia to train a new generation of 'bench-to-boardroom' scientists. These are entrepreneurial STEM professionals with the drive and skills to take ground-breaking research and turn it into products, startups, and innovations that power Australian industry and job creation. Incentivising industry internships as part of the PhD program would help towards this broader goal of creating a momentum-building critical mass of bench-to-boardroom scientists.

While STA supports incentives for industry internships being added to the scheme, we urge decision-makers to apply a more flexible approach to implementation.

Ensuring support for research students

STA is concerned about the increasing workload being wedged into research training as part of higher degrees. While most universities offer a stipend for 3.5 years to students from Research Training Program funding, many PhDs are not completed until after 4 years.

The final period of a PhD is a time of acute stress for students. This is exacerbated further if a student has their stipend run out when they are still many months from completion. While universities currently have the capacity to extend stipend payments to 4 years, they receive no extra funding to do so. Universities must make the decision to either support students for the entirety of their candidature and take fewer students - or remove support at 3.5 years and support more students. The five-yearly Student Finances Survey by Universities Australia highlights the acute cost-of-living challenges for students as they complete their degrees (Universities Australia 2018).

Longer completion times

Placing extra requirements on students to do a three-month industry internship without any additional financial support to the students, risks extending times to completion or driving up attrition rates.

The most recent analyses of completion rates and times showed improvement up to 2015 (Torka 2020). However, this was prior to substantial changes to research training after the [ACOLA Review of Australia's Research Training System](#) in 2016.

That review introduced extra requirements in research training including industry internships (after which the APR Intern Program was expanded) and more transferable skills training. This extra work was added to the program without any increased funding support for universities or students to undertake the extra workload. The University of Queensland is one university that chose to provide its students with an extension of their stipend if they undertook approved transferable skills training as recognition of the extra time it would take to complete.

STA recommends: require universities to add to the timeframe for a student stipend when they do an industry internship (extend the stipend time by the same length as the internship).

Transferable skills training

One of the changes from the 2016 ACOLA [Review of Research Training](#) was the need to introduce stronger transferable skills training as part of the PhD program (McGagh et al. 2016). STA shares its central ambition to create more well-rounded graduates who can apply their skills beyond academia. This also boosts the employability of STEM graduates who are increasingly looking for employment outside of the higher education sector (Mccarthy and Wienk 2019).

One of the purposes of introducing an industry internship to research training is to equip graduates with skills they need to engage in industry. This fulfills the role of the transferable skills training which has been included since 2018. STA sees little need for students to complete two separate requirements if the internship is high-quality. It would make sense to deem industry internships as meeting the transferable skills training requirement.

This would have added benefits beyond reducing the risk pushing out completion times. Students who are given the option to take up industry internships to get their transferable skills training are more likely to take on the industry internship. This approach would also reduce costs for universities who won't have to provide this training to every student.

STA Recommends: make the completion of an industry internship a demonstration of the 'transferable skills' requirements of a PhD.

A case for more flexibility in timing

STA has concerns about the requirement for industry internships to be started in the first 18 months of candidature. For some students in some disciplines, an internship in the first 18 months could help to shape their research direction - and start them thinking at an early stage about the potential applied use of their research. However, in other disciplines and circumstances, a research student may be of more use to the industry partner later in their research program.

The first 6 to 12 months of a student's candidature is the time when a student is establishing the groundwork for their project. At many universities, a student's candidature is not confirmed until after the first 6 or 12 months of their candidature. Students are also most likely to leave a PhD in the first 12 months of their candidature (and after 4 years) (Bourke et al. 2004). This makes the earliest part of a research degree a tumultuous time for the students and their supervisors. If a student begins an internship but does not confirm their candidature, and their enrolment is terminated, the internship may not be completed - which could damage the relationship between an industry partner and the university.

In some cases, industry partners who take on interns could benefit more if the students are able to undertake their internship in the middle or even later part of their candidature. At this stage, a PhD candidate has more experience in research and a greater understanding of their topic. This can offer industry partners an intern with more knowledge and skills to apply.

As the implementation paper outlines, there are clear benefits in many cases for an internship in the early stages of a PhD. However, guidelines developed between the Australian Council of Graduate Research and the Australian Industry Group outline some clear benefits to having a more experienced intern with a more developed research specialisation (Australian Council of Graduate Research 2017). **Rather than constraining internships to the first 18 months, greater flexibility on the timing of internships would enable industry to choose depending on their needs.**

STA recommends: create more flexibility in the timing of internships during a PhD (internships should be able to occur at any point in the PhD as long as an agreement between the student and industry partner is made in the first 18 months from the student's commencement date).

A case for more flexibility in internship fields

The implementation paper sets a requirement for an industry internship to be closely related to the student's field of research. While there may be merits to this in some cases, constraining it to the student's research field may prevent an important opportunity for students to enhance their employability, develop stronger cross-discipline knowledge, or to consider applying their knowledge in a new industry.

One purpose of these internships should be to provide students with industry-based skills including being able to adapt their knowledge to different industry settings beyond their own research. A more flexible PhD graduate will be more employable. An industry internship does not necessarily have to be related directly to the student's research to provide the skills expected from such an internship. This aligns closely with the industry engagement guidelines developed by the Australian Council for Graduate Research and the Australian Industry Group (Australian Council of Graduate Research 2017).

STA recommends: allow students to do industry internships in a field outside of their research ('non-cognate internships') to expand their skills.

Ensuring 'extra' internships

Since 2016, industry internships have been an important component of many PhD degrees. A wide variety of internship arrangements have been developed by universities and their industry partners.

The goal of creating internships through the Research Training Program should not displace existing work by other internship schemes. This intent should be clearly articulated to create an additionality of extra funded internships places - not to displace other funding streams or internships.

STA recommends: ensure these internships do not displace or replace other existing internships.

Overall funding envelope for research & research training

We note the proposed creation of internships in this scheme is to be delivered within the existing overall funding envelope for the Research Training Program. As the COVID-19 pandemic continues, and the loss of international student income which has traditionally funded much Australian university research, the strain on university research budgets is acute. Large-scale job losses have been announced at universities over the past 18 months. The extra \$1 billion for university research announced in the October 2020 Budget was an important investment. The May 2021 Budget did not include a continuation of that emergency injection into next year. There is a strong case for an emergency boost to the two major research funding streams from Government to universities in the short term - and certainly as part of the next Budget cycle.

Australia's overall investment in research and development (R&D) had fallen to 1.79 percent of GDP in the last official figures. The average R&D investment for advanced economies across the OECD nations is 2.4%. In our **2021 Policy Vision - Australia as a STEM Superpower** - STA sets out the case for Australia to set a bold target to start to lift our overall R&D investment towards 3 percent of R&D (Science & Technology Australia 2021).

On top of the need to provide further overall investment in the Research Block Grants, there is a clear case to boost funding in the Research Training Program portion of the scheme to cover the addition of a three-month internship to the three-year PhD. Student stipends would have to be extended so students can undertake these internships and not run out of income in the stressful final months of their PhD candidature. STA has calculated that a 4% increase to the Research Training Program would cover the additional three months of an internship for half of all PhD students to undertake an industry internship.

STA recommends: the Australian Government boosts overall investment in the Research Block Grants and Research Training Programs as part of the next Budget cycle.

Wider feedback

To help clarify implementation questions for the sector, we also seek the Department's guidance on:

Industry engaged research

The Watt Review of research funding at universities highlighted the need to incentivise industry engagement with research at universities. A change in Research Block Grant weightings has resulted in more industry engagement with universities. Part of this has been an increase in industry partnerships in PhD research projects - which deepens industry engagement for PhD students.

Such engagement imposes extra work on students. Industry engagement as part of a PhD project often involves the writing of reports to industry partners, presentations to industry partners, and even education outreach as part of these partnerships. It is not clear whether this sometimes-extensive work in an industry-partnered project would constitute an internship.

Will industry-partnered PhD research be counted as internships?

Standards

It is unclear from the documentation how standards will be set for these industry internships - and how this would be measured. The Australian PhD is a world class qualification. Any changes or additions to this program needs to remain consistent with that record of excellence. There are existing guidelines for industry internships that have been co-developed between universities, through the ACGR, and industry groups. Such guidelines could be mirrored or inform the guidelines for new internships. While taking care not to add to the reporting burden on universities, businesses, and students, it is crucial that a recorded measure of quality and high standards is part of the reporting to the Australian Government.

What standards would be used to ensure a quality internship experience?

Unpaid internships

Under existing internship programs, there is no guarantee that internships will be paid. In programs such as APR Intern, funding support to pay interns during their placements has been provided by the Australian Government. With the implementation of this new industry internship program, STA is concerned at the risk of students being left without financial support during their internship.

What controls would ensure students are financially supported through unpaid internships?

International Students

International students in Australia have limits on the number of paid work hours they can do within the limits of their visa conditions. Particular care should be given to getting the policy settings right as these internships are created under the research training program.

It would be helpful for the Government to clarify whether internships would be counted under the work limits of a student visa - or whether a three-month full time paid internship is permissible alongside their other regular paid part-time work. These work limits have been temporarily relaxed amid the COVID-19 pandemic. If international students are encouraged to undertake industry internships, the policy settings need to make it as easy as possible for them to take them up.

Under current visa regulations, international students are also strictly limited in the time they can spend in Australia during their PhD training. An additional 60-day internship on top of their degree program would be impossible for students limited by their visa expiry date.

For international students to be able to participate in industry internships (and we strongly recommend they are given the opportunity to do so), both concerns need to be addressed.

Will international students be allowed to access this program without breaching their maximum work limits?

International Internships

It is not clear in the definitions or the implementation plan whether the proposal allows for international industry partners to take on interns as part of this program. When borders open, being able to offer global internships would be incredibly useful for students, industries, and universities.

For students, it would open the doors to international experience as part of their higher degree. For universities, international internships could be a vehicle to showcase the high-quality research produced in Australia - and potentially attract further global research investment. For global industry partners, it could deepen their awareness of Australia's world-class research and create further opportunities for collaboration.

Will international industry partners be included as options for internships?

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