



An innovative & collaborative research project connecting university, government, education and industry.

Project aim

Our aim is to increase the understanding of high school students about how science, technology engineering and maths (STEM) are used in real-world contexts, by allowing student teachers to experience first-hand the practical application of STEM skills within industry. We want this experience to improve the student teachers' ability to inspire high school students and reinforce the value of learning and understanding STEM.

Our goal is to contribute to the development of industry's future workforce, and South Australia's STEM skills-based economy.

How will we achieve this and how you can help?

By facilitating student teachers to have a real-world experience involving a visit to industry in order to understand how STEM is being applied, to identify an industry issue and then involve research scientists to assist with providing expert thinking towards addressing the issue and communicating this information back to industry.

After the experiential learning experience, students will create unit plans based on the science, technology, engineering and maths they saw in their placement industry. Ideally these unit plans will be used, or will inform teaching, during the student teachers final high school practicum.

Progress so far...

54 student teachers have visited 11 industries to identify how science was being used in the industry and to consider any industry issues that they were alerted to. The student teachers also met with research scientists from Flinders University to help inform their observations, and to give them further insights into the application of STEM in industry.

With your help, we are repeating this process for a fourth year.

Please see overleaf for participating industries and overview of the plan for industry placement.

How can industry help?

The project requires student teachers (in groups of around three) to visit selected industry sites in October of 2019 on two occasions (each visit is 4 hours, i.e. 8 hours total). These visits will allow student teachers to gain real-world experience with STEM skills and understand how they are used in industry settings. As part of these visits it would be helpful if industry provides:

- A tour of their business to showcase the products and services delivered.
- Access to professional industry staff members that utilise STEM concepts in their work, to offer knowledge and advice.

How will Industry benefit?

With the assistance of industry personnel, student teachers will identify a real issue that could be addressed by applying STEM concepts towards possible solutions. Industry may be connected to research expertise through the student teachers' investigation of the issue and the assistance they receive from:

- New Venture Institute; and
- Flinders University Research Scientists.

Benefits of participating

- Potential to influence high school science students' perceptions of **STEM pathways** through student teacher practicums and ultimate work placements.
- Potential to build **relationships between your industry, schools and researchers**.
- Involvement and collaboration with the College of Education, Psychology and Social Work and College of Science and Engineering at Flinders University.
- Involvement in innovative & collaborative research project involving university, business, government and high schools.

To register your interest

Register your interest in the Bridging the Gap project please visit: bridgingthegap.edu.au or contact bridgingthegap@flinders.edu.au



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Participating industries have included:



APA Group - Australian Gas Networks

SAGE Automation
Engineering

Earth Sciences / Engineering

<http://gotoSAGE.com>

<https://www.apa.com.au>



SIMEC Mining

SA Water

Earth Sciences / Engineering

Biology/Chemistry

<http://www.arrium.com>

<http://sawater.com.au>



Government of South Australia

Basil Hetzel Institute

SA Power Networks

Biology / Medical Science

Physics

<http://basilhetzelinstitute.com.au>

<http://sapowernetworks.com.au>



Department of State Development

Department of Human Services

SAHMRI

Computing Science / Public Health

Medical Science

<https://humanservices.gov.au>

<https://sahmri.com>



Overview of the plan for industry placement:

Identify

Translate

Communicate

Visit 1 4 hrs, 7–11th October
4 hours at the industry site

The student teacher will **identify** where and how science, technology, engineering and maths is being used in your industry; and with your help, an issue/problem related to STEM in your industry.

Analysis of Visit 1
between industry visits

The student teacher will **translate** the STEM problem into scientific approaches towards a possible solution; with help from a suitable **research scientist**, facilitated by **New Venture Institute**.

Visit 2 4hrs, 21–25th October
4 hours at the industry site

The student teacher will **communicate** possible ways of approaching a solution to the industry problem, potentially accompanied by a suitable **research scientist**. With support from the Bridging the Gap team.

Student teachers will incorporate their industry experiential learning in their teaching placement at a high school in May 2020