# Development of professional skills in science students through a work integrated learning honours stream at Monash University

**January 2017**

**Project Leader**: [Dr Rowan Brookes](https://www.monash.edu/science/schools/biological-sciences/staff2/rbrookes)

**Project team**: [Dr Chris Thompson](https://www.monash.edu/science/schools/chemistry/our-people/staff/thompson), [Ms Lisa Happell](https://au.linkedin.com/in/lisa-happell-64115512), [Dr Tim Connalon](https://www.monash.edu/science/schools/biological-sciences/staff2/timc)

## Objectives

This project aimed to support honours students in learning how to engage effectively with industry partners to complete an industry-based group project. This involved the development of online resources targeting priority areas of learning and development for science graduates, as identified by employers and students themselves.

## Context

At Monash University, WIL activities in science are primarily operated through the Faculty of Science office under the leadership of the Dean, although some WIL activities take place within specific Schools (e.g. Chemistry). The Short Term Industry Placement Program, an extracurricular program in which students do 80-hour placements in industry, has been run by the Faculty for several years. School-based activities include embedded industry-aligned practicals. To support WIL, the Faculty also has an embedded Careers Consultant. The provision of WIL activities, including placements, projects and internships, is supported by Monash University’s strategic plan ‘Focus 2020’ and ‘The Monash Better Teaching Better Learning Agenda’ from the Office of the Vice-Provost (Learning and Teaching).

The Faculty offers three undergraduate science courses – the Bachelor of Science, and two advanced Bachelors of Science (Honours) – a Research program and a Global Challenges program. The Global Challenges program was introduced in 2014, and the honours year of this degree, due to run for the first time in 2017, is the focus of this Lighthouse project. The degree develops skills in leadership, entrepreneurship and science diplomacy along with a science major and has a strong focus on building employability skills. Students are required to complete two internships (including at least one international internship), as well as the WIL-focused honours year (the WIL Innovation Challenge). The degree is overseen by a Course Director, with input from an honours year coordinator and administrative support to assist with industry engagement (e.g. contracts) provided by the Faculty.

## Implementation

For the WIL Innovation Challenge, we have partnered with a number of external organisations, who will each provide an authentic workplace challenge for students. The students will then work in cross-science-disciplinary groups to design creative and feasible solutions for their particular problem. The assessment is focused on how they are working towards delivering project outcomes, with the traditional research component of honours reduced to 20 percent of the assessment.

Sample challenge: Ever wondered what the air quality is like on your street? Or how noisy the local road is? Access to local environmental information is critical in helping people connect with their local environment and make informed choices about their health and wellbeing. Join the Environment Protection Authority Victoria to design, build and test the next generation of ‘smart sensors’ and assessment techniques for monitoring urban micro-environments.

The students will receive support from faculty staff, as well as input and mentoring from the industry partners. They will be based on campus with site visits and meetings with industry partners. To prepare students to work effectively with their industry partner, we developed a series of online modules:

‘Getting to know your partner’

‘Your skills in the workplace’

‘Getting started on your project’

‘Professional etiquette’

To ensure the online modules would effectively prepare students for their projects, we:

* held focus sessions with industry partners and alumni about their needs relating to the students professional skills and knowledge;
* obtained feedback from students and the project team on proposed learning outcomes;
* engaged with alumni to feature in the video content as subject matter experts.

The modules and other learning materials were designed and developed by an educational developer, the Faculty Moodle designer and a careers consultant.

The modules are hurdle requirements – students are required to complete them, but they are not assessed. We interviewed the industry partners talking about the types of skills and attributes they want students to exhibit, and have included parts of these interviews as videos throughout the modules. The modules are designed to encourage students to reflect on their skills and capabilities, what they might need to work on, and how they can apply their knowledge and skills to their projects.

## Emerging Issues and next steps

The challenge that remains for 2017 is to successfully implement the inaugural honours year.

Some of the big unknowns include:

* Whether students are sufficiently equipped with skills and knowledge from their degree to work in this manner.
* What approaches the academic supervisors, industry partners and honours coordinators should use to work together to support the students.
* How the students best engage across the university and with industry partners to support their own learning.
* Whether the learning materials are appropriate for this degree.

Pending the successful implementation of the WIL Innovation Challenge with the Global Challenges cohort, the Faculty aims to extend this honours option to BSc students in 2018.

In 2017 the Faculty of Science will extend their WIL program with a new ‘for-credit’ industry placement unit. In addition, a new Masters program with an industry placement unit will also be launched.

WIL programs are enormously rewarding for all parties involved, but engagement with industry requires significant time, delicate negotiations and a strong understanding of industry and university needs. This type of role, and the workload associated, requires dedicated and highly competent staff. Appropriate resourcing of these units is one of the biggest considerations for the sustainability of WIL in the Faculty.