

**Industry Immersion**

An important part of the C2C year is engaging with industry to enable students to witness how advanced manufacturing techniques are implemented in the work place. The visits also demonstrate a real world application of the concepts learnt in maths and science, and set a context for their C2C projects. In addition, students see the value that employers place on communication, team work, initiative and problem solving in the workplace.

C2C is very fortunate to have a diverse range of industry partners who can provide insights into the practices and principles of innovative and competitive manufacturing. This has enabled us to offer a wide range of forms of industry engagement that suit various industry partners and the interests of different student groups.

In their MOA for 2011, schools have selected their preferred industry tour(s). The Coordination Team will be liaising with industry and teachers during May to confirm arrangements.

Thank you to our industry partners for making this valuable aspect of C2C possible.

**Teacher Implementation Guide**

The Teacher Implementation Guide produced by the Coordination Team during 2010 has been enhanced following feedback from C2C teachers and the introduction of additional material.

Hard copies have been provided to schools and the guide is also available in electronic form via the C2C website.

**BAE Systems / C2C Scholarships 2011**

The three recipients of the 2011 BAE Systems/Concept2Creation scholarships were recognised at an awards ceremony at Edinburgh Parks. Stephen Harris, Louise Thomas and Denni Mackrill were presented with their scholarships by Jim McDowell, Chief Executive of BAE Systems and Bernie Fitzsimons, General Manager of NAMIG.

The scholarships allow the graduates of C2C to pursue tertiary courses that meet BAE's engineering needs. Selection is through an application and interview process with successful candidates demonstrating course results, employability skills and an analysis of their C2C experiences.



Besides providing an allowance to assist with each year of study in a university or TAFE course that aligns with BAE's skills needs, the scholarships also include paid work experience, support from a BAE Systems mentor and buddy, plus potential employment opportunities on completion of courses.

Stephen (The Heights) and Louise (Riverton & District High School) have both commenced at the University of Adelaide undertaking a double degree in Mechatronic Engineering and a Bachelor of Mechanical Engineering (Sports Engineering) respectively. While Denni (Valley View Secondary School) is undertaking a Bachelor of Engineering (Electronics & Communications) at the University of South Australia.

These young undergraduates now join five other recipients from previous years who are not only engaging with BAE Systems but also acting as project mentors for current C2C project teams in schools.

NAMIG welcomes enquiries from other employers interested in a range of scholarship options.

**Department of Transport, Energy and Infrastructure (DTEI)**

In 2011 DTEI has become an active project partner with NAMIG and is keen to develop a working relationship with C2C schools to assist teachers in developing projects for students.

As part of C2C's program of teacher professional development, 23 teachers from 8 schools participated in two separate tours of DTEI sites to create awareness of potential student project opportunities. The tours included visits to the Port River Expressway Bridge, the new South Road Superway site, the Traffic Management Centre in Norwood and the Seaford Rail Extension project.

If the level of enthusiastic conversation over lunch and on the tour bus is an indicator, the teachers will be coming up with a range of engaging projects incorporating elements of the real life application of maths, science and engineering that they witnessed during the visits.



## Woomera/Roxby Downs

Tentative arrangements are in place for approximately 30 Year 10/11 students to visit Woomera and Roxby Downs from 27 June to 1 July 2011.

Once the details are confirmed, expressions of interest will go to established C2C schools.

The draft itinerary includes a visit to the:

- RAAF Woomera Test Range;
- Woomera Heritage Centre;
- BHP facility at Roxby Downs.

Students will also visit local schools to share their C2C experience.



## Coming Events

Thur 12 May 7.30-10.00am  
NAMIG Management Board Meeting

Tues 17 May 12.30-3.00  
C2C+ Teachers Induction Day (UniSA Mawson Lakes)

Wed/Thurs 18-19 May  
Year 12 RAAF Leadership Program

Tues 31 May 3.45-5.00  
Teachers Meeting Tyndale Christian School

Tues 28 Jun 3.45-5.00  
Teachers Meeting Windsor Gardens Vocational College

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## Expansion of C2C

This year NAMIG has commenced the expansion of the C2C program, both consolidating and building upon its success in the northern region.

In 2010, 18 secondary schools and over 1600 students participated in the full C2C Program. In 2011, it is expected that over 2200 students from at least 27 schools will take part in some aspect of C2C as the suite of programs is made available outside of the northern suburbs of Adelaide.

While a focus on working with schools in the northern region is retained, a cluster of new C2C schools and industry partners is emerging in the southern and western suburbs. Discussions are also taking place with potential education and industry partners in the Upper Spencer Gulf.

Not only will the expansion of C2C see a successful education and workforce development initiative introduced into other regions of the State, it will contribute to the sustainability of the program.

A number of organisations have agreed to assist the C2C expansion in the south and will be attending an industry forum later this month. Companies include Copeland Industries, Fibrelogic, Redarc Electronics, Seeley International, Sage Didactic, SMA, Toyoda, Zeiss Vision plus local councils Marion and Onkaparinga and the southern Business Enterprise Centre Networks.

## C Program

The C program is the preliminary stage of the C2C suite of programs and provides opportunities for middle school students to be introduced to Advanced Manufacturing through tours, talks and introductory projects. Although this level of program introduces the C2C focus on engineering and innovation, it retains more teacher guidance than in the more senior student-led teams and projects.

Building on the successful introduction of Engineers Without Borders in Schools (EWBIS) and last year's pilot C2C In Space Project undertaken at Xavier College, additional C projects are being introduced in 2011 providing a defined pathway for C2C schools.

In 2011 the C Program offers:

- **C2C In Space** - Through the Mars Exploration Design Challenge students are introduced to the concept of problem solving in an alien environment. This is a hands-on enquiry based program for year levels 7 to 9 with extension opportunities to year 12.
- **C2C In Cars** - A coordinated series of workshop and project experiences that is aimed at establishing an automotive pathway for C2C students from year 7 to 12. These experiences will develop an appreciation of designing in the manufacturing processes and product, from constructing a simple vehicle to competing in an eco-challenge.
- **Power & Sustainability** - A major natural disaster situation has occurred and students are challenged to determine the best operating voltage to operate a solar water pump to provide the maximum flow rate of water in a day from sunrise to sunset.
- **Introduction to UAV** - Created by two post graduate students from the University of South Australia, this project prepares students for the senior UAV Challenge through introductory design and build of a UAV.
- **EWBIS** - C2C schools choose to participate in various projects that develop engineering solutions with developing communities. This is a school version of a tertiary program that is undertaken by Engineering under-graduates.



Teacher PD sessions were held in Term 1 and materials are available via the C2C Coordination Team or [www.concept2creation.com.au](http://www.concept2creation.com.au)

## Sonnex Engineering Engages in a Valued Way



NAMIG is indebted to Jano Turchyna and his team at Sonnex Engineering for laser cutting the chassis component of the model cars that will be used in the C2C in Auto project.

This demonstrates another way in which small to medium enterprises can contribute to C2C and introducing Advanced Manufacturing to our next generation.