

Report on *Girl Talk* 2007

Engineering Presentation to Schoolgirls

Canberra Pilot Program



Girl Talk Flyer with Lanyard and Wristbands

Introduction

The *Girl Talk '07* program is an initiative of the Canberra Division Women in Engineering (WIE) group to celebrate *2007: The Year of Women in Engineering*. The *Girl Talk '07* program is aimed at young women in their senior school years and highlights the contribution that women can make to society and the engineering profession. The program acknowledges and promotes the rewarding career opportunities which exist for women in engineering, as well as providing insight into the various pathways of study which can lead to becoming an engineer. The *Girl Talk '07* program comprises two parts, the first being a presentation delivered at schools by members of the Women in Engineering group. This is complimented by a follow-on one day engineering workshop for girls which is scheduled for National Science and Engineering Week.

Background

In 2006, the Canberra Division WIE raised the idea of developing a presentation for schoolgirls about engineering careers. As a result, several WIE joined the division with a strong motivation and interest in bringing the concept to reality. For five months, several Canberra WIE volunteered many hours to develop and refine the content and design of a highly graphical and interactive presentation that would become, *Girl Talk*.

The Presentation Overview

The *Girl Talk* presentation is intended to enlighten secondary schools students, girls in particular, of various pathways of study which lead to engineering, as well providing an insight into the rewarding career opportunities that exist within the profession. It is divided into the following key information areas that would be useful for a secondary school student to know if considering becoming an engineer:

- An overview of what engineering is.
- Types of engineering disciplines.
- Qualities and attributes of an engineer.
- Studying engineering at university.
- Working roles for engineers.
- Being a woman in engineering.
- Benefits of being an engineer.

Each presentation was delivered by 2-3 members of the WIE group and often included a final year university student delivering the university life and study aspects of the presentation. All the WIE speakers volunteered their time to present at the schools, and the group of speakers represented a broad cross-spectrum of engineering disciplines, career backgrounds and professional experience. The presentation was followed by the female engineering presenters speaking briefly about their own engineering careers, offering a personal insight into why they became an engineer, the type of work they do, and the advantages of being an engineer.

The presentation was entertaining, engaging and interactive, and allowed the speakers to freely relate their own personal experiences to the delivered content. Lollies and chocolates were provided as encouragement for the students to answer questions and offer their ideas about engineering. The treats were not only excellent icebreakers, but also ensured maximum student participation. The presentation was tailored for a half-hour time slot which made it convenient for the schools to schedule into a spare lesson period or lunch break. *Girl Talk* was open to both boys and girls of any year, with girls in years 10 – 12 who are contemplating their career choices being the intended primary audience. While highlighting engineering as an exciting career choice with extensive opportunities was a focus for the presentation, there was also the added emphasis that engineering is not limited just to boys.

***Girl Talk* Presentation Content**

Further detail on the key presentation topics is provided below:

- * **Short video** – Prior to commencing the presentation, two 1-minute fast paced video's including a Young Engineers clip was played:
 - showing exciting technology and engineering concepts.
 - showing a young woman and man in an engineering environment.
- * **Introduction** emphasising the two key things girls should take away from *Girl Talk*:
 - that they will have heard about engineers and know a bit about what engineers do.
 - that they realise that girls can be an engineer if they want to – it's another career choice for them to consider.
- * **Opening Global Warming context** – uses brief discussion on global warming to highlight a major global problem that needs attention and engineering solutions:
 - shows the link between science and the need for engineers to help provide solutions to this problem.
 - many young people are environmentally aware and this was a good example they could relate to, and one that best demonstrates the wide range and types of engineers required.
- * **What is Engineering?** – explains the link between science and engineering, and that engineering is about solving problems and turning scientific theory into real practical solutions.
 - Emphasises problem solving, creativity, designing and that almost everything around you is in some way connected to engineering.
- * **Types of Engineering.** Gives a short description and examples of the traditional (and some more recent) engineering disciplines (civil, mechanical, electrical, software and environmental) followed by a listing of the wide range of other disciplines that do exist.

- * **Qualities of an Engineer.** Highlights general qualities of problem solving, creativity, curiosity and interpersonal skills.
 - Emphasis is placed on the fact that engineering will teach a lot of these skills so students shouldn't panic if they don't fit the mould just yet.
 - Also emphasise that students DO NOT need to be 'top of the class' students – average students can still be engineers.
- * **Studying engineering at university.** Discusses the length of the engineering degree, combined degrees, university subjects and life, work experience, subjects to pick at school, university entrance scores, scholarships for girls, options if you don't get a good score, TAFE, part-time work, part-time study and government assisted programmes.
- * **Working as an engineer.** Highlights the types of jobs, locations of work, job variety and excellent opportunities for advancement to management and other career development opportunities.
- * **Women in Engineering.** Highlights that women are not equally represented in engineering and that a gender balance is important. Gives a few examples of prominent engineers to demonstrate the unique qualities that women have, and continue to bring, to engineering.
- * **Benefits of Being an Engineer.** This is the final encouraging slide to sell engineering as a great career choice – broad and exciting career opportunities, challenging work, excellent financial and job security, professional recognition and that engineers make a valuable contribution to society.
- * **Personal Profiles.** Each WIE presenter speaks for 2 minutes about how they went from school to being a professional engineer and give their personal thoughts on engineering.
 - A slide with photos of their work helps show the engineering lifestyle and ultimately sell engineering.
 - This is a chance for students to hear first hand from an engineer and for WIE to inspire and encourage students into engineering.

***Girl Talk* Showbags**

An integral part of the success of *Girl Talk* were the purple showbags, which were packed with all sorts of goodies and were handed out to each student who attend the presentation. The showbags contained:

- *Girl Talk* wristbands and lanyards (purple colour, white writing).
- Australian National University Engineering Faculty Handbook.
- Engineering Scholarships for women.
- Helpful websites.
- Graduate program information from various engineering organizations.
- Promotional material from organisations – pens, paper, rulers etc.
- Any information that can help show engineering 'suitable for a student'.

Several local organisations enthusiastically provided showbag material which significantly increased the value of the bag in terms of engineering content and information, and general appeal to students. The following organisations contributed showbag material:

- Engineers Australia
- Australian National University
- Defence Materiel Organisation
- Defence Signals Directorate
- Northrop Engineering Pty Ltd
- Snowy Mountains Engineering Corporation (SMEC)
- CEA Technologies

***Girl Talk* Launch - Teacher Night**

Girl Talk '07 was officially launched in March 2007 at a preview presentation for schoolteachers. The aim of the launch was to showcase the proposed presentation to schoolteachers, seek their feedback for improvement and ultimately motivate them to support the *Girl Talk* concept. The launch was very successful with all teachers highly praising the presentation and expressing their support for bringing *Girl Talk* to their schools. Importantly, the teachers also provided valuable feedback to help the Canberra WIE focus the presentation for the school student audience.

Promoting *Girl Talk* to Schools

The WIE were very proactive in engaging schools. Emails were sent to the majority of high schools/colleges including Yass, Goulburn and Queanbeyan seeking expressions of interest in *Girl Talk*. Personal phone calls were also made to teachers to further encourage their interest in *Girl Talk*. As each school responded, a variety of *Girl Talk* flyers were emailed to the teachers to assist them in promoting *Girl Talk* at their school.

Visiting the Schools

Some quick facts on the *Girl Talk* school visits are as follows:

- 13 WIE presentation speakers (including 3 university students)
- 11 schools/colleges with some schools having multiple presentations
- 370 students, mostly girls
- 500+ showbags distributed (teachers passed showbags to students who couldn't attend the presentation)

The schools/colleges included:

- Lake Ginninderra, Daramalan, Hawker, Merici, Narrabundah, Copland Colleges
- Canberra Girls Grammar
- Stromlo, Lyneham, Melrose, Karabar High Schools

Student Questions

There were a range of very constructive and impressive questions asked by students throughout the presentations. Some examples were:

- Why are only 10% of engineers female?
- What is the most exciting thing you've done as an engineer?
- What's the difference between avionics and aeronautical engineering?
- What's the difference between a civil engineer and an architect?
- Do I have to do chemistry to do engineering?
- What level of maths do I need to do to study engineering?
- Is it hard to 'get to the top' in engineering as a woman?
- How much do engineers get paid?
- What is the best university to study engineering?
- Do you learn how to do disaster relief work at university?
- What do you do in your daily job?
- What steps are involved with building something like a radar or the other things you've worked on?
- What is biomedical engineering?

WIE Speaker Comments

All WIE speakers willingly volunteered many hours of their time to present *Girl Talk*. The WIE thoroughly enjoyed the experience and found the opportunity to talk 'engineering' to students very rewarding. Each speaker usually identified with a select few students who showed genuine interest in engineering and found it very satisfying to know that they had influenced at least one student in some positive way.

Girl Talk provided an excellent opportunity for the WIE to further develop their personal WIE friendships and professional networks, and allowed the speakers a unique opportunity to present to a 'different' audience about a topic they were each passionate about. The success of *Girl Talk* is undoubtedly, directly attributable to the motivation, enthusiasm and passion of the WIE speakers.

Future Sponsorship

The Canberra WIE developed *Girl Talk* with a view to it simply being a local presentation and there was no formal sponsorship for *Girl Talk '07* except for the donation of showbag material. However, *Girl Talk* has attracted immense national interest from various organisations including the Federal Government, expressing a desire to sponsor *Girl Talk* in 2008 and beyond. Engineers Australia is managing future *Girl Talk* sponsorship opportunities.

Lessons Learned

Girl Talk '07 was conducted as a pilot program in Canberra and the following suggestions for improvement would benefit both students and future *Girl Talk* programs.

- Year 10 students are the most ideal students to target *Girl Talk*. Although other Year's benefit from exposure to engineering, Year 10 students were the most responsive and are in an ideal position to choose subjects suitable to prepare them for tertiary engineering studies.
- Stronger emphasis should be placed on teachers to encourage maths/science students. Students with this background generally showed more interest in the presentation and engineering in general.
- The presentations should be managed to less than half-hour in order to allow questions from students.
- *Girl Talk* promotion to schools should commence as early as possible and should *Girl Talk* become acknowledged as a valuable part of the school careers week program, more schools would be keen to schedule the presentation into their curriculum each year.
- WIE speakers would benefit from having a dedicated portable projector, laptop and audio facilities to take to each school as this would overcome the technical problems and set-up delays encountered with the computer systems at each school.

Girl Talk 1-day Workshop

The workshop is a follow-on event to the *Girl Talk* school presentations aimed at schoolgirls in Years 10-12. It will be held at Engineering House and conducted by the Canberra WIE. Approximately 20-30 students will be selected and the workshop aims to:

- Provide mentors and a networking opportunity to female students.
- Provide information on engineering/technical trades to female students.
- Encourage interest in engineering/technical trade careers.

The workshop activities include:

- Small group discussions to talk about personal ambitions.
- Discussions about engineering and what engineers do in the community.
- Motivational guest speakers – female and male from technical/engineering backgrounds.
- Group bonding activities such as quizzes and games.
- Insights into the female engineering experience.
- Practical 'show and tell' sessions, hands on experience.

Thanks

The Canberra WIE would sincerely like to thank all organisations who proudly contributed showbag material to *Girl Talk* and in particular, the staff of the Canberra Division, Engineers Australia for their support in making *Girl Talk '07* a success. Finally, the WIE would especially like to thank Gabbi Cusack, Project Manager for 2007 Year of Women in Engineering, who has provided endless support and encouragement to the WIE and, both the current and future success of the *Girl Talk* program.

Merryl King, MIEAust
on behalf of
Women in Engineering
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