

Outreach activities, Engineers Australia

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There is a wide range of outreach activities to stimulate interest in and raise the understanding of the role and purpose and value of engineering in Australia. These are:

- competitions eg Robocup, solar car challenges, spaghetti bridge building
- summer schools eg Honeywell Engineering Summer School
- speaker programs – volunteer engineers use CD roms and DVDs in their presentations
- site visits - a variety of places are organised by members through their work places eg Australian Submarine Corporation (ASC), Parks radio telescope, motor manufacturers
- careers advice – National Careers Advisor Service, participation in career expos
- teacher resources eg *Engineers Make it Happen*, *Engineering Our Future*

Further details can be obtained from www.engineersaustralia.org.au

Flagship activities of Engineers Australia are EngQuest, Engineering Week and engineering challenges for both primary and secondary students. EngQuest is a national program that provides a framework for teachers to include engineering projects in their programs. Engineering Week has broadened its focus to include events of public and schools appeal that occur around the time of National Science Week. The Science and Engineering Challenge is a day of challenges for teams of students. The winners then qualify for the national grand challenge.

Engineers Australia has a long history of developing and implementing such programs. They exist because the membership sees the need to promote the profession for public understanding and continuing the supply of engineers for the future. The programs rely very heavily on the time and expertise of the members of Engineers Australia and they do this as volunteers.

In 2003, the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) established a working party on Science Education and Engagement. As a member of PMSIEC, Engineers Australia was a member along with the Australian Science Teachers Association (ASTA), CSIRO and other organisations involved in outreach programs.

The working party found that there are hundreds of programs, some national, many state based that all have similar long term aim. It also found that there is duplication of programs and resources used for similar activities. Due to lack of communication and coordination between outreach program organisers, recipients of programs often had either a feast or a famine. What emerged was that for many of these programs there was often little follow up and a lack of rigorous research to determine the effectiveness of these programs, both in the short and long term. Anecdotal evidence suggests that these programs are effective and have a positive impact. It should be noted that the rigorous gathering, recording and analysing of data, either short or long term is costly in terms of resources and human expertise required. It is however, what sponsors, whether they be government or industry, and members of industry professions increasingly requiring from organisations such as Engineers Australia that seek assistance, either

monetary or in kind for their programs. The working group also recognised that teachers are the key to engaging students in science and making the links between it and engineering.

Engineers Australia recognises these findings. It is looking at its own organisation to maximise coordination and minimise duplication. It is building partnerships with other stakeholders, especially at a national level. It has begun engaging with teachers. For its programs to develop and be maintained it will need to honestly evaluate and be critical of its activities.