We are delighted to report that the UnIChe project will continue beyond the initial three-year pilot phase which began in 2000.

Following a very favourable external review in 2002, we have worked hard to secure further funding from the Commonwealth Government and the original partners of UnIChe – Orica Pty Ltd, the Universities of Melbourne, Newcastle and Australian National University; and we have a new university partner, the University of Queensland. Approaches are also being made to other industries, and universities in the west.

The expanded UnIChe project now includes new partners in biomolecular science and chemical engineering and new school outreach programs by joining forces with programs in Queensland and at the Australian National University. It will continue to include:

- an undergraduate enrichment program for the ablest students to increase the flow of high quality chemistry graduates to industry;
- a school outreach program to raise awareness and value of the many interesting career options in chemistry;
- an industry relevant research PhD and Honours program; and
- a staff exchange program to strengthen the links between industry and university increasing the capacity of business to exploit and acquire university knowledge assets.

FURTHER FUNDING FOR UNICHE

New initiatives of the project include:

- additional university and industry partners;
- the appointment of university-based school and undergraduate outreach coordinators and integration into VICS and UQ's Bright Minds program;
- expansion from chemistry to chemical engineering and biotechnology; and
- provision of university-accredited courses.

Honours and PhD projects 2004-5

UnIChe is now calling for new Honours and PhD projects commencing mid-year and onwards. Please send a one page proposal, agreed between the University and Orica staff members, and half page CV of the student to Philip Reynolds (phil@rsc.anu.edu.au).
Queensland joins the UnIChe Summer School

For the first time, ten students from the University of Queensland joined the popular annual UnIChe residential Summer School held from the 1-14th February 2004 at the Australian National University and the University of Melbourne.

Altogether, 34 students attended, all achieving distinction marks or better in their other University studies. There were also eight students from the University of Newcastle, ten from the Australian National University, and five from the University of Melbourne. Eight students classed themselves as chemical engineers, twenty-six as chemists, although many were pursuing both streams.

With the theme of “The Business of Chemical Innovation”, students were introduced to topics such as finance, project management, entrepreneurship, business skills and intellectual property.

Half-day visits were made to Orica Consumer Products Laboratory and Orica’s batch chemical plants producing adhesives, resins and ‘MIEX’ resins in Melbourne. Aspects of university research laboratories were investigated by visits to parts of the Chemistry departments at ANU and Melbourne Chemistry and Chemical Engineering departments. The latter gave a presentation on their research activity which was warmly received.

Again the anonymous student feedback was overwhelmingly positive. Many thanks to all Orica and university staff who contributed their time and enthusiasm to make the 2004 School such a success.

Winter Field Trip 8 - 9 July 2003

The fifth Uniche winter field trip was held on the 8th - 9th July 2003 in the Hunter valley. The theme was again predominantly “Ammonium Nitrate in Industry”.

Numbers were restricted to 22 students, because of strict safety regulations on industrial sites. Competition to attend was severe, and so the students were mainly selected from those topping the current end of semester examinations. There were nine students from the University of Newcastle, six from the Australian National University, and seven from the University of Melbourne.

The main body of the trip consisted of four half-day visits to:
- Incitec Ltd. At Kooragang Island where ammonium nitrate is produced from natural gas and air via intermediate ammonia and nitric acid stages.
- Orica Explosives Kurri Kurri Laboratories where emulsion explosives containing ammonium nitrate are developed at laboratory and at pilot plant scales.
- Delta Manganese’s electrolytic manganese dioxide plant
- Rix’s Creek mine where coal is produced at an open cut by use of explosives, and then further upgraded in a coal washery.

Winter Field Trip 2004

The 2004 UniChe winter field trip will be held in Newcastle from 6th - 7th July for chemistry undergraduates at ANU, Queensland, Melbourne and Newcastle.

If you are interested in attending, please contact Dr Philip Reynolds (phil@rsc.anu.edu.au) at the Research School of Chemistry, Australian National University. Numbers are limited.
Undergraduate UnIChe at ANU

As an example of UnIChe integrating with existing outreach and other learning programs, UnIChe has now joined two new initiatives for undergraduates at the ANU - an advanced studies course, the PhB, and iLearning, which offers research experience for undergraduates.

Advanced Studies Course - the PhB

The UnIChe summer school is now part of an advanced studies course (ASC) for the newly-created *Bachelor of Philosophy* undergraduate degree at ANU. The Bachelor of Philosophy (Honours) is an exciting research focused degree at the ANU. The PhB is offered initially through the Faculty of Science and is for intellectually ambitious students who want to study at the highest level. Every student receives intensive individual attention from an academic supervisor.

The Summer School ”The Business of Chemistry” with significant assessment for the PhB students now forms 50% of an ASC. The PhB student also undertakes a small research project with postdoctoral staff guidance within Research School of Chemistry, the Department of Chemistry, or any other appropriate area in ANU where there are suitably experienced postdoctoral staff.

This provides the student a number of advantages:

- Exposure to industry and younger industrial and academic staff; and
- Possibility of completion outside semester periods, ameliorating course overload.

iLearning

UnIChe is now part of the iLearning project which provides a research and professional experience program for undergraduates at ANU. The objectives of the iLearning project is to provide a structured approach to support students’ transition to independent learning at university and to develop their abilities to manage their own future research and/ or professional projects.

The core elements of iLearning are:

- inquiry learning courses
- undergraduate research and professional experiences.

UnIChe’s Business of Chemistry Summer Schools and Industrial Chemistry in Action Winter Field trips are now incorporated in the iLearning network at ANU. Opportunities for honours projects, summer research scholarships and industrial placements are also included as internship programs.

For more details, log onto the iLearning website at http://www.anu.edu.au/CEDAM/ilearn/.

Emerging Science Symposium
7th November 2003

The successful third “Emerging Science” symposium was held in Melbourne on the 7th November to present the results from UnIChe funded projects in 2003 to a wide audience of Orica technical staff.

There were about 60 participants, including 15 University staff and students, several CSIRO personnel and about 40 technical staff from all the Orica Research & Development areas. Fourteen presentations were made of the results of the 2003 UnIChe-funded Honours, PhD and summer research projects by the students themselves.

Orica Manager, John Lyons, presents summer school certificate to Melbourne student, Zoe Williamson.
This issue we decided to profile two UnIChe people who have participated in and worked for the project. Adrian is a student from Melbourne, now at ANU, who took part in a Summer School. Joanne Kuluveovski, the UnIChe Melbourne outreach coordinator, writes about her work for the UnIChe project.

**Adrian Hawley**
Honours student

During the 2002 Summer School, Melbourne third year chemistry student Adrian Hawley wandered into Professor White’s office at ANU and asked for an appointment. He wanted to talk about Professor White’s research, eventually leading to asking about working at the ANU. He went back to Melbourne, graduated and then returned to undertake a short term research contract during winter 2003 and, subsequently, further work as an ANU Summer Research Scholar. Adrian stayed on to start an Honours degree in February 2004, working with John White’s research group. Adrian’s honours project is the growth of self-assembled titania and zirconia films at the air-water interface.

Adrian writes...

> When I originally signed up for the UnIChe Summer School as a great addition to my resume I had no idea it would be such a source of future inspiration. I had expected a rather dry and academic program but was gladdened to find an interesting lineup among the pleasant company of fellow students and a goodly amount of time for socialising. The opportunities we were given to meet people in academia and industry were good for network building and the presentations provided a more solid idea of the activities of the career chemist. Ultimately my active participation in the program led to two months of work for Orica, at Chem. Eng. at Melbourne University before four months as a research assistant at Australian National University. This then flowed on to become a Summer Scholarship and an interesting honours project among a lively and successful research group. The opportunities, experience and enjoyment of the UnIChe program remain something I’d recommend (and do) to any dedicated chemistry student.

**Joanne Kuluveovski**

University of Melbourne Chemistry Outreach Fellow

In 2003, Joanne reached over 2500 Melbourne school students through school visits (34 schools) and on-campus tours (12 schools) to promote chemistry through presentations, workshops and demonstrations. Themes included “Do anti-wrinkle creams really work?”, “the chemistry of paint” and “UV light and you”. She also presented two lectures on time management to the 2004 Summer School.

Joanne graduated from The University of Melbourne with BSc (Hons) majoring in Chemistry. This was followed by ten years in the chemical industry where she worked for ICI Australia, Orica and Huntsman Surfactants in a variety of technical and commercial roles ranging from Graduate Chemist to National Account Manager.

UnIChe News is produced by Valerie Wayte at the Research School of Chemistry, Australian National University, for the UnIChe project.

http://rsc.anu.edu.au/uniche

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