



Welcome to the April/May issue of the **In2science** Update. Term one ended well and our Peer Mentors have now made three or four visits to their schools and are starting to get to know the students and vice versa. Teachers and Peer Mentors are now working together to give the students a better experience of science and mathematics. Many teachers are utilising their Peer Mentor in innovative ways to help them engage the students and show the value of science. In some cases we have Peer Mentors sharing their subject knowledge with teachers who are teaching away from their specialism.

As Term 2 gets underway we will begin our placement visits in earnest. Jacinta (Monash Uni), Alison (University of Melbourne) and I enjoy seeing the Mentors in action and talking with students and teachers about science and mathematics. Several of the Mentors have made presentations in the schools about what they study which has been well received by the students. Others have begun planning activities to do with the students on particular topics.

In2science prizes - reminder

Prizes will again be available for participants in the program this semester. Here are a couple of the things on offer but more will be awarded at the end of the semester as they become available. Prizes will be drawn out of a hat or awarded based on an application (if applicable):

Prize	Donated by:
An interactive talk at the winning school about Free Radical Chemistry, biotechnology research (with examples of Centre research) and chemistry careers for Yr11 and Yr12 Chemistry students. Hopefully this may be scheduled near a practical class so that the Centre researcher can interact with students during the practical. Timing of this is flexible to fit in with school. School to be drawn from hat.	ARC Centre of Excellence for Free Radical Chemistry and Biotechnology, School of Chemistry, Bio21 Molecular Science and Biotechnology Institute
Half a day placement within the Bio21 Centre laboratories for <u>four</u> Yr 11 Chemistry students (teacher's presence optional). The students will do chemistry lab exercises with the Centre postdocs/ PhD students. Timing of this flexible in negotiation with the school (school holidays an option). School to be drawn from hat - Students to be selected on merit and enthusiasm by the winning school	ARC Centre of Excellence for Free Radical Chemistry and Biotechnology, School of Chemistry, Bio21 Molecular Science and Biotechnology Institute
The Weather Makers: How Man Is Changing the Climate and What It Means for Life on Earth. Signed copies by Tim Flannery 2x Mentors	In2science
Science motivation pencils pack of 25 2x teachers	In2science

STELR

This project will continue to run in 2009. Initiated by the Australian Academy of Technological Sciences and Engineering (ATSE) the Science and Technology Education Leveraging Relevance (STELR) program is now running in several Victorian and interstate schools. **Northcote HS** and **Preston Girls SC** are **In2science** schools that are participating and **In2science** will be supporting them through placed Mentors. The main theme of the STELR program is renewable energy:

"This taps into the high level of concern about climate change in our community and engages the interests of students and teachers alike. In 2008, the units of work being developed are 'Introduction to renewable energy', 'Photovoltaic cells', 'Wind turbines' and 'Biodiesel', which will be combined into a six-week program on renewable energy."

Extract from ATSE Focus, volume 148, February 2008

In2science was asked to talk about the program at a recent training session for schools participating in STELR. It was great to meet with interstate schools who participate in similar Peer Mentoring programs and hear their praise for the support it can offer teachers and school students.

In2science is keen to offer support for the teaching of new initiatives in the classroom as the Peer Mentors can provide an additional dimension for the students.

To find out more about STELR contact Peter Pentland, Project Manager, tel: (03) 9340 1212, email: peterp@atse.org.au

CSHE independent evaluation - Semester one 2009 will see the **Centre for the Study of Higher Education** conduct an external evaluation of the In2science program. Schools and Mentors may be contacted during the placements to seek their participation.

In2nanotech visits DIIRD

On Wednesday 1 April **In2science** Manager John McDonald and the In2nanotech Mentors made a presentation to Department of Innovation, Industry & Regional Development (DIIRD) staff based upon the In2nanotech roadshow.

Mentors Dan, Emma and Leigh gave snapshot presentations to give the attendees a flavour of the roadshow and introduce many of them to nanotechnology for the first time.

The session was warmly received and we thank Harry Buskes for inviting us.



Mentor Dan discusses nanotechnology and industry after the presentation.

Mentors mentoring Mentors



Teacher (and former Mentor) Pramana with Mentor Kristen at Balwyn HS

In2science has come full circle this semester. After five years of the program we now have Mentors placed with teachers who were In2science Peer Mentors themselves.

We have three such placements and it is great to see our former Mentors now doing a great job as teachers in our schools. Teacher Pramana Tedjosiswoyo who works at **Balwyn HS** was a Peer Mentor in 2006-07 when he undertook four placements in Melbourne Girls' College, Lalor North SC, and Fitzroy HS. This year Pramana is hosting Mentor Kristen in his classes on a Wednesday morning. Kristen is undertaking a BSc/Science Education double degree and is enjoying working with Pramana.

At **Montmorency SC** former Mentor Renee Dal Nevo is now teaching and has Mentor Adele with her classes on a Monday morning.

It is great to see many of our ex-Mentors being inspired to become teachers and working in our partner schools. We look forward to placing **In2science** Mentors with more of them in the future.

Date for your diary:

In2science Day for Y9
Wednesday 2 December 2009
The University of Melbourne

RACI event

Chemistry with a Bang - (The Science of Explosions)

2009 Hartung Youth Lecture - and a National Science Week Event

The 2009 Hartung Youth lecturer is Dr John Reid, an explosives expert from Thales Australia.

In the 2009 lectures, students will learn about a whole range of high energy reactions from the past and present - including the reaction for inflating car air bags. This lecture promises to be a spectacular experience, in the tradition of the lectures given by Professor Hartung over 50 years ago.

The dates and locations are:

Monday 17 August, Albury-Wodonga Campus, La Trobe University

Tuesday 18 August, School of Chemistry, The University of Melbourne

Wednesday 19 August, Powerworks Energy Technology Centre, Morwell

Friday 21 August, Warrnambool Campus, Deakin University

For enquiries contact Jenny Sharwood, Secretary, RACI (Vic) Education Group

Email: jenny.sharwood@oup.com Phone/fax: (03) 9816 3786

Peer Mentoring in Action

Our Peer Mentors are getting actively involved in a wide range of activities in the schools. Here is a snapshot of what has been happening over the first few weeks of placement.

Mentor Tim has been helping students get to grips with psychology at **Crusoe 7-10 SC** in Bendigo. Tim has been building his confidence interacting with the Y10 students and really enjoying the rapport he has built with the students and their learning. Well done Tim.

At new school to the program **Eaglehawk SC**, also in Bendigo, Mentor Teagan has been getting her hands dirty helping students make fossil casts and understand the processes involved in fossil formation. Teagan also works at the Discovery Centre in Bendigo and is hoping that she can organise a visit there for the students in Term 2. Teagan was recently on the front page of the Bendigo Advertiser as part of an Earth Hour article. Great work Teagan.

A visit to **Eltham HS** saw Mentor Erica helping students extract DNA from wheat germ. Students enjoyed the activity and Erica was able to help them identify the DNA strands and understand the process of extraction.

Ringwood SC is another school new to the program in 2009. This semester they have two Mentors working with teachers in the school. Mentor Josh is an ex-student of the school and has enjoyed being back with some of his former teachers helping them engage their students. Also at the school is Mentor Erin who has been supporting students learn about the properties of light.

Another school new to the program this year is **Wantirna SC**. Mentor Peter is working with students in Y8, helping them understand food chains. Also at the school is ex-student and now Mentor Jenny who has been helping students in Y8 get to grips with probability trees in mathematics. The students have enjoyed having the additional support in class and value Jenny's ability to explain the work in a clear and understandable manner. Jenny is one of our Mentors who is interested in teaching as a career and is finding the placement has helped confirm her career plans. Well done Jenny.

Northcote HS once again has several Mentors helping out with the STELR project. Mentor Fred (who does mechanical engineering) is looking forward to helping the students investigate aspects of sustainable energy and putting his broad engineering knowledge to good use supporting the students in their investigations.



Mentor Jenny at Wantirna College

Mentor Tina was having a great time on a recent visit to **Mac Robertson Girls' HS**. The students were learning about genetics and inheritance and Tina was able to put her sound knowledge to good use answering student's questions to aid their understanding. Tina has also planned an introductory talk on Mitosis for the start of Term 2. Well done Tina.



Mentor Dan demonstrates mass and density

Long term partner school **East Doncaster SC** once again has two Mentors working with several teachers. Mentor Lori is now on her third placement at the school and is a regular fixture in the science department. Lori has been doing a great job of explaining titration processes to Y10 students, passing on her valuable knowledge to both students and teachers. Lori is also undertaking her Duke of Edinburgh Gold Award – well done. Also at the school is Mentor Dan. He has been helping Y7 students get to grips with the mass and density of objects. It was excellent to see him and the teacher working well together to engage the students. The class teacher had identified an extension task and directed Dan to introduce this to those that had finished the main activity. This was a really good example of teacher and Mentor working well together to maximise the engagement of the students.



Mentor Lori helps students set up their titration.

Mentor Christa at **Reservoir District SC** has been talking to students about her own studies. Christa is undertaking a Master of Biotechnology and Bioinformatics and was able to explain to students some of the research she is undertaking.

Teachers at **Bundoora SC** are very enthusiastic about the extra classroom support that the Mentors can offer. Mentor Michael is helping out in Y8 Maths and his explanations were being actively sought by students.

Information for Schools

Many thanks to all those teachers who are planning lessons to involve the Mentors and utilise their skills. Some teachers have made changes to the sequence of topics for Term 2 to link to the Mentors subject specialism.

During recent placement visits, some teachers were a little unsure of how they can use the Mentors. It is important that they have read the [‘maximising the benefits of having Peer Mentors in the classroom’](#) document.

Having Peer Mentors in the classroom is an ideal opportunity to deliver the curriculum in a different way. If the Mentor is a specialist in the field the students are studying then try to involve them in the sessions by talking about what they do. Very often they know more than the teacher!!

Here are a few hints and tips from the above document about using the Mentors for general class activities:

- *The Mentor becomes an **extra** person offering advice and support and sometimes alternative explanations. Mentors are trained to **focus** on helping students who are ‘**on task**’. This acts as a good motivator to the students; if they want the Mentors attention they need to be talking about the work.*
- *Try where possible to ensure the Mentor has the **information in advance** of a lesson so they can be familiar with what you are trying to achieve – usually best done by **email**.*
- *Allocate the Mentor to a group of students who may need more help or who may need stretching (they could sit together on a separate table).*
- *To avoid the Mentor’s time being monopolised by certain individuals help by checking they have **genuine** questions for the Mentor.*
- *Be aware that sometimes students will ask for help from the Mentor instead of you. Students have said they are sometimes reluctant to ask the teacher, who they see as assessing/judging them, especially if they are unsure about something that has been explained in a previous lesson.*
- *Some teachers have found they are able to **focus** on working with certain students while the Mentor looks after the others who are asking for general help.*
- *Try to include a **discussion phase** in the lesson, going through the answers that the students have done. This way the Mentor can be actively involved in the feedback process and contribute their views to the class as a whole. Mentors often comment that they would like to contribute to whole class discussions more often.*

Several teachers have asked about excursions to the university campuses and elsewhere – this is great. The Mentor is the person to talk things through with initially as they can start contacting the staff at the university. **In2science** is happy to help in any way we can and we do have some funds to help schools make such excursions with their Mentor if the expense is a barrier.

National Science Week
August 15 – 23
Theme: Astronomy: Science Without Limits

If you are starting to plan for **National Science Week**, then maybe the Mentors can help out. Science week takes place during the next block of placements for semester two so let **In2science** know if there is anything you would like to do and we will see if we can help out.

In2science evaluations – will be in schools in mid may for completion during the last week of placement.

Information for Mentors

Congratulations on settling into your placements so quickly. There were a few hiccups at the start for some of you though these seem to have been ironed out.

By now your initial nervousness will have gone and you can start to build a rapport with the students. Try to think about how you engage with them and the sort of questions you ask them. Hopefully you will find yourself moving from answering questions (being reactive) to having more in-depth discussions with the students about what they are doing and the place of science and/or mathematics in the wider world (being proactive). Also try to learn names (can be difficult) and challenge their thinking on the topics being studied. Keep trying to engage with all the students and if you have any concerns talk them through with the teacher. Often having a chat at the end of each lesson about what has happened and how you found your role is extremely valuable in preparing for the next time you are there.

Let us know if you want any help with any aspect of your placement (visits to the uni, activities, presentations etc) Remember we have some resources you may find useful or you may have some yourself or at uni. Offer to do some 'show and tell' activities if you are feeling confident. Also keep us informed about activities you are doing in the classes and feel free to send in a summary of what you have been doing to share in the newsletter – we are always on the lookout for photographs of Mentors in action.

In2science blog

Don't forget we have a blog for Mentors to share their experiences and support each other. Have a look and we hope you use it. The focus is on sharing your experiences and seeking possible support for ideas in the classroom.

Access the blog through the Mentor's page of the **In2science** website or [go direct](#).

News from the Institutions

La Trobe University

Molecular Plant Breeding CRC - offer a **FREE** genetics education program "[Get into Genes](#)". This program has been very successful and bookings are being taken now.

Alternatively you can contact Belinda Griffiths:

Tel. 9479 5185, email: belinda.griffiths@getintogenes.com.au

[Science Teachers Assistance Program \(STAP\)](#) - aims to assist teachers by providing a range of activities for students and teachers within select areas of Science, Technology and Engineering.

[Robots are there for you!](#) Dr Rhajiv Khosla and NEC Japan have been working together to help robots recognise and understand human emotions.

The University of Melbourne

[Earthshine reflects Earth's oceans and continents from the dark side of the Moon](#)

Researchers from the University of Melbourne and Princeton University have shown for the first time that the difference in reflection of light from the Earth's land masses and oceans can be seen on the dark side of the moon, a phenomenon known as earthshine.

[Not just a long distance relationship: immune cells in skin fight off infection better than the rest](#)

Scientists at the University of Melbourne have discovered the local action of immune cells in the skin, which could improve treatment of viral skin infections.

Monash University

[Astronomy In A Nutshell!](#) - The Monash Science Centre will be hosting an exhibition to celebrate the International Year of Astronomy which will run from the end of April to December.

The exhibition caters for students from P to 12 and is free but bookings are required.

Contact the Monash Science Centre on 9905 1370 for bookings and further information.

[New approach needed to assess climate change](#)

A Monash University ecologist has called for a rethink on how climate-induced ecological change is measured, saying Australia's wilderness areas - not urban and agricultural land - can provide the most accurate picture

Websites to try

Here are a couple of sites that may be of interest:

Welcome to teachsustainability.com.au

This website has been designed specifically for Australian teachers to make it as easy as possible to find education resources on sustainable development that are suitable for a range of students and classes.

[Teaching Climate Change](#): a resource for teachers and students

[Creative Chemistry](#) - has some good resources for a range of year levels in Chemistry

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