

Welcome to the last edition of the **In2science** newsletter for 2010. Placements have now finished and our Mentors are busy with their end of year exams at university.

We look forward to resuming placements again in 2011.



The **In2science Team** has been busy interviewing prospective Mentors for 2011 and we have been really impressed by the young people we have spoken with – so far we have had well over 150 applications and more by the day. It looks like 2011 will be an exciting year for the program.

Many of our current Mentors will be finishing university this year. It is always sad to see them leave, but we wish them all the best and hope they will keep in touch.

We wish to thank our 2010 funding partners, the **Department of Education and Early Childhood Development (DEECD)** and **the George Alexander Foundation**. Without their generous support **In2science** would not be able to continue and grow. DEECD have taken over the funding of the program and their generosity has allowed the program to expand to include three more Victorian universities who will commence placements in 2011:

**Deakin University**

**Swinburne University of Technology**

**University of Ballarat**

We wish all our Peer Mentors (past and present), teachers and their students a wonderful end of 2010.

## **In2science News**

### **Coordinator appointed for Deakin University**

**Rebecca Waite** is working as the **In2science** Coordinator for Deakin University. We are looking forward to working with her to establish the program from Deakin's Burwood, Geelong and Warrnambool campuses. Welcome Rebecca.

Founding **In2science** Board member, **Professor David Finlay** was recently awarded the status of Emeritus Professor at La Trobe University. David was an original driving force of the **In2science** program and this award is very well deserved.

### **In2science at [STAVCON '10](#)**

This year **In2science** will be presenting a session at the Science Teachers Association of Victoria conference in late November. Schools wishing to find out more about the program or current partner schools looking to develop their involvement with the program and seek new ways of using Peer Mentors will find this session informative.

### **In2science Roadshows - 2010**

This year we will once again be running regional roadshows in Term four. The **In2nanotech** and **In2biotech** programs will be on the road again this year. These programs allow more remote school student to have access to our **In2science** Mentors and teachers to gain an insight into new areas of science.

**In2nanotech** will be visiting schools in NW Victoria visiting Chaffey Secondary College, Irymple Secondary College, Red Cliffs Secondary College, Ouyen P-12 College and Charlton College.

**In2biotech** (run in conjunction with [Get into Genes](#)) will be visiting schools in NE Victoria aiming to visit schools in Bright, Beechworth, Euroa, Wangaratta and other towns in the area.

This year, **In2science** is also excited to be piloting a roadshow for regional primary schools based on the theme of 'Forces'. This roadshow will visit primary schools in Mildura alongside the **In2nanotech** roadshow and will be run in conjunction with the new [Quantum Victoria Science Centre](#). All the staff and our Mentors are looking forward to the trips this year. We look forward to reporting on our travels in 2011.

## Peer Mentoring in Action

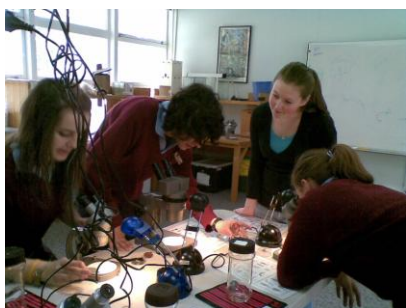
Since the start of Semester two, many Mentors have been actively involved in a variety of science and mathematics classroom activities. Mentor involvement has extended to helping with practicals, working on small group activities and presenting a 'show and tell' about themselves and their work at university. Here are some examples of what our Mentors have been involved with over the last couple of weeks of placement:

Mentors Beth and Anh have been getting into electric circuits using Brain Box electronics kits with the students at **Fitzroy Primary School**. They've made fridge alarms, police sirens and even a sound effects machine. Also at the school, Mentor Rodolfo is helping the grade five students to learn about air.

At **Sunshine College** Mentors Tam and Tuong have been helping out with maths and love the hands on way that students at Sunshine learn maths.

Mentor Dan was able to take in some samples of nanotechnology to make an interesting presentation to students at **Eltham HS**. **In2science** Manager John and Y10 Mentor Laura also made a nanotechnology presentation to her Y10 class.

At **Brunswick SC** mentors Dylan, Sebastian, Lauren, Lucky and Amit have been helping year 10 maths students get their head around indices.



*Mentor Brianna assists students with their investigations or water quality at Bundoora SC*

At **Bundoora SC**, **In2science** has been working with the school to establish a scientific investigation which is supported by the mentor and undertaken by Y8 students as an independent research project. Mentor Brianna has been heavily involved in this pilot project. She has been working with three students in the pilot. "We've been out to sample the water near the school and the students have tested temp, pH, conductivity etc and also identified the organisms in the water." The students were assigned the task of developing their own water quality investigations, looking at spatial variation around the school. As part of the activity the students have also visited the La Trobe Wildlife sanctuary sampling the water there and take advantage of the sanctuary's facilities. Sampling of water was also undertaken in Greswell Forest and after which the students wrote up their reports. The Mentors role was one of 'expert' and Brianna was able to ensure the students understood the scientific processes involved and kept the students on task. Great work Brianna – we look forward to other schools using this model.

Students at **CLTC – Olympic Village PS** were asked to draw pictures of a scientist at the end of Mentor Meagan's time in the school. The students really impressed Meagan with their representations of scientists, especially as most of them identified the scientist as female – best student quote "Scientists can be boys and girls".

Mentor Elizabeth at **Thomastown East Primary** has loved working with the students on a number of activities looking at forensic science including taking fingerprints and chromatography.

At **Northcote HS**, Mentor Rhiannon has been working well with her Year 9 class. As part of their topic on ecosystems, they have made an aquarium and were striving to monitor the temperature, pH and ammonia levels in the tank over the rest of the term to see how their fish survived.

Mentor Edgar is doing an excellent job at **Reservoir District Secondary College** again this year helping the year 11 psychology students prepare for their end of year exams. It was great to see how valued our experienced Mentor was by teacher and students who acknowledge that Edgar goes above and beyond to assist, even running weekend study sessions for students that want the extra help.

At **Ruthven SC** Mentor Bridget was giving a helping hand to Yr 7 Science students working on designing a food chain set in the African Savannah jungle. The task required students read a passage and from that identify then draw all the organisms in order of whether they are either a producer or consumer (1<sup>st</sup> order or 2<sup>nd</sup> order). Bridget was keen to interact with students as teaching may be a career option she may be considering. The class teacher sees the benefit of having an extra person in the room and her students do see Bridget as a Scientist.

At **Coburg Secondary HS** Mentor Akhil was assisting the year 10 maths students with their revision for fractional indices. Mentoring has allowed Akhil to approach the solution in a simpler way. He is used to being confronted with more complex problems / requiring more complex problem solving skills so this placement has allowed him to get back to basics.

Daniel was undeniably having a lot of fun at **Lalor North SC** on his placement with the year 10 robotics class. Daniel has been treating the students to a performance (rock and roll) demonstrating how pedal boxes they were designing actually functioned ...what they did in terms of delaying and dragging sound.

Mentors Jess and Sean both really seemed to be enjoying their placements at **Montmorency SC**, being on hand to help the teacher with the year 11 chemistry class. Students were learning how oxidation and reduction of Na occurs and mentors were proud to put their knowledge to use. Teacher says "they are invaluable... I don't know what I'd do without them. I would have them all the time if I could. I tell the kids these are real scientists! We have a great camaraderie. You should be really proud of them."



*Mentor Matthew assists students with their dissections*

Mentor Matthew has been working specifically with two Year 8 students at **Glen Waverley SC**. One recent biology practical they undertook was the dissecting of a sheep's heart to learn about the anatomy of the heart.

Mentor Victoria has enjoyed assisting Year 7 **Mt Waverley SC** students with project on robotics. They have had to use chemistry, physics and technology to make the robots work.

Year 7 students at **Westall SC** cheered when Mentor Jessica returned for Term 4. The students had sent Jessica 'Get Well' cards which cheered her up immensely when she was ill. The Science topic was Forces and the class had their stellar Mentor return to help them work on their exercise about constellations.

### Information for Schools

Many thanks for all your hard work this year. **In2science** hopes that teachers and students have gained from the experience. Many teachers comment that they were able to learn from the Mentor about a particular aspect of science and that the support in the classroom has been invaluable for their students.

Please try to get the **In2science Evaluations returned as soon as possible for inclusion in the annual report.**

**Teacher's and link teacher's evaluations are done online and emails have been sent out regarding this.**

**Student feedback from the classes hosting a Mentor is sought from each class and forms have been sent out to schools.**

It is only by undertaking evaluations that we can determine how successful the program is and the benefits being achieved. It is also a way in which we can learn about issues regarding the program and then endeavour to put them right.

We will be sending out letters to the principals of all the schools associated with the program to thank staff for involvement. Letters will also include some best practice of how teachers have ensured the program had a high profile in the school:

1. The Link Teacher keeps in regular contact with the program.
2. Departmental/faculty meetings allocate some time to discuss the **In2science** program and teachers share their experiences.
3. Students and teachers include articles in the school newsletter about the classes with the **In2science** Mentors.
4. Senior management within the school are kept informed via the Link Teacher.
5. Teachers are encouraged to participate in the program and to experiment with new pedagogy which is supported by the Mentors in the classroom.

**We look forward to working with the schools to help maximise the achievable benefits of the program in 2011.**

## 2011 Placements

Please ensure the **Link Teacher form** is completed even if your school did not host a Mentor this semester. Information you provide helps us with the planning and allocation of Mentors. We will be contacting schools in early February with details of the Mentors we have available. If schools have preferences for Mentors with a particular discipline background then do let us know so we can do our best to meet your needs.

## Information for Mentors

A big thank you to all our In2science Peer Mentors this year. It has been fantastic working with you all and visiting to see you in action.

Make sure you have completed the [evaluation form](#) - your feedback is extremely valuable whether this is your first or fifth placement.

If you have not yet informed us of your interest in mentoring again next year then please do so. You may be finishing your studies this year so again keep us informed.

Don't forget to submit your travel expenses for reimbursement of up to \$10.00 per week. Travel claim forms are located at the back of your Peer Mentor's pack or on the [website](#).

We have begun recruiting for 2011. If you have friends interested, get them to contact one of the **In2science Team** or apply [online](#)

- **Best wishes for the exams** -

## News from the Institutions

### La Trobe University

**2010 Nancy Millis Public Lecture - A cure for cancer - State and Perspectives of Infectious Agents Causing Human Cancers**

Nobel Prize Winner, Professor Emeritus Harald zur Hausen shines light on the path to science's Holy Grail.

An unmissable event, this free public lecture gives you the opportunity to hear one of the world's most eminent authorities discuss the science of cancer and the latest advances towards a cure. Former Scientific Director of the German Cancer Research Centre in Heidelberg, Professor Emeritus Harald zur Hausen was also Editor-in-Chief of the International Journal of Cancer and was joint winner of the Nobel Prize for Physiology or Medicine in 2008. Gain a special insight into virus induced malignancies and have your questions answered by one of the world's brightest scientific minds.

**Tuesday 9 November 2010, 6.00pm – 7.00pm**

Szental Lecture Theatre, La Trobe University, Melbourne (Bundoora) campus

**RSVP**, (03) 9479 2556 (Kristen Pascoe), [k.pascoe@latrobe.edu.au](mailto:k.pascoe@latrobe.edu.au)

### Monash University

#### [Mount Etna's mystery explained?](#)

Internationally renowned geophysicist Dr Wouter Schellart has developed the first dynamic model to explain the mystery of the largest and most fascinating volcano in Europe, Mount Etna.

Dr Schellart's results from fluid dynamic models provide an alternative explanation for the existence of Mount Etna, its geological environment and evolution, as well as volcanism in the surrounding region.

His theory suggests that Mount Etna is not directly the result of tectonic plate boundary activity, but that it resulted from decompression melting of upper mantle material flowing around the nearby edge of an Ionian slab that is slowly sinking into the Earth's mantle.

"Most volcanism on Earth occurs at plate boundaries in places where tectonic plates move apart (eg Iceland) and in places where tectonic plates come together with one plate diving (subducting) below the other plate into the mantle (eg Pacific ring of fire)," Dr Schellart said.

## RMIT University

### Analytical Instrument Workshops -

Sessions are still available for VCE chemistry teachers interested in this workshop for VCE Chemistry Unit 3 in February next year. This is an opportunity for Year 12 chemistry students to gain practical experience using analytical instruments in chemistry laboratories. Sessions still available for Wednesday 16th Feb 9 am - 12 noon and Thursday 17th Feb 1 - 4 pm.

More information and registrations visit: <http://www.rmit.edu.au/seh/chemtasters>

These sessions also run at other Victorian universities.

### Holographic balance bands: fact or fiction?

**In an Australian-first study, RMIT University researchers are investigating the efficacy of a sporting aid that has become a worldwide phenomenon, the holographic Power Balance wristband.**

The team of researchers from the Discipline of Chiropractic in the School of Health Sciences has begun trials to test one of the key claims made by promoters of the Power Balance bands, that the wristband improves balance. Worn by elite athletes around the world - from AFL's Nick Riewoldt and Brendan Fevola to Real Madrid's Cristiano Ronaldo - the bands have grown in popularity among amateur sportspeople looking to enhance their performance, as well as elderly people and others who struggle with balance problems.

Chief investigator, Dr Simon Brice, said the pilot project was developed in response to clinical experience with chiropractic patients who were seeking advice on the silicone wristbands, which are embedded with two hologram discs.

## University of Ballarat

'Hanging in With the Kids' in Tough Times – Engagement in contexts of Educational Disadvantage in the Relocation School

A new book based on research from University of Ballarat discusses the issue of "disengagement with schooling from the vantage point of the lives, experiences, interests and aspirations of the communities from which young people come, and within which they are embedded." Research Professor John Smyth and Research Associate Peter McInerney from the School of Education along with Professor Barry Down of Murdoch University, WA used a "narrative and representational approach which gives detailed insights into the wider context of poverty, class, power, relationships and identity."

### PETER DOHERTY SCIENCE AWARD

A group of young science students will be announced as winners of the 2010 Peter Doherty Science Award. Professor Peter Doherty AC FAA FRS, Laureate Professor, shared the Nobel Prize in Physiology or Medicine in 1996 with Swiss colleague Rolf Zinkernagel, for their discovery of how the immune system recognises virus-infected cells. He was Australian of the Year in 1997

Through Professor Doherty's generosity this award has been created to celebrate excellence in scientific thought and activity. The prize is awarded annually to the student group judged to have produced the best scientific research project during Year 9 or 10 in one of Ballarat's State secondary colleges.

**Guest Speaker:** Professor Peter Gell, University of Ballarat *"Victoria's Climate - it ain't what it used to be"*

**Date:** Wednesday 10<sup>th</sup> November. A light supper will be served.

**Contact:** Stephanie Davison 5327 9373 or [s.davison@ballarat.edu.au](mailto:s.davison@ballarat.edu.au)

## Swinburne University of Technology

**5 November @ 6:30pm**, Dr Robert Crain (Swinburne University) will be talking on "Galactic Fireworks", including presenting some of the amazing high-resolution computer simulations of galaxy formation he has been developing.

**19 November @ 6:30pm**, A/Prof Charles Lineweaver (ANU) will be describing "The Search for Extra-terrestrials". With the recent discovery of the "Goldilocks Planet" a mere 20 light years away, we may be one step closer to answering the ultimate question: are we alone in the Universe?

Bookings are essential for both public lectures, as places are strictly limited. For further information including booking details and directions to the venues, please visit:

<http://astronomy.swin.edu.au/outreach/?topic=freelectures>

### Deakin University

#### [Research to help visually impaired get a new feel for visual art](#)

People who are blind and visually impaired will have a unique way to 'view' art when they visit galleries in the future thanks to new technology being developed at Deakin University.

Alfred Deakin Professor Saeid Nahavandi, the director of [Deakin's Centre for Intelligent Systems Research](#) (CISR), and Dr Ben Horan from the [School of Engineering](#) are expanding the capabilities of haptic technology - which adds a sense of touch and feel to virtual or remote objects - to provide people who are visually challenged with the ability to interact with 2D visual art works in a way not currently possible. "Haptic technologies generate forces and vibrations that simulate a realistic sense of touch and feel to the human user," Dr Horan explained.

"Simple haptic sensations are already being widely used in video gaming and the new generation of mobile phones. More advanced haptic interaction is achieved through arrangements of actuators and sensors much like traditional robotic arms.

### Websites to try

#### [Science Buddies](#)

This is a great site for free science fair projects and other interesting resources. There are pages for teachers and students along blogs and ask an expert – a great resource.

**Time for mitosis** — In this common biology lesson, students learn about the time required for different phases of the cell cycle. This version of the activity includes suggestions for reflective questions to help students explicitly focus on the nature of scientific knowledge and the process of science. This lesson can be found along with several others at [http://undsci.berkeley.edu/teaching/912\\_exemplary.php](http://undsci.berkeley.edu/teaching/912_exemplary.php) Understanding Science is a great website from Berkley in the USA.

**There are also some great sites for public participation in science here are a few:**

**[BOINC \(boinc.berkeley.edu\)](http://boinc.berkeley.edu)** – this site allows you to use your idle time on your computer to cure diseases, study global warming, discover pulsars and do many other types of scientific research.

**[Einstein@home](#)** – uses computer time donated by computer owners all over the world to process data from gravitational wave detectors. Participants in Einstein@Home download software to their computers, which process gravitational wave data when not being used for other computer applications, like word processors or games. Let us know if you have a recommended website to share with others to aid learning in science and mathematics.

**[Climateprediction.net](#)** – this site runs numerous experiments modelling climate change. It runs a climate model on computer time donated by computer owners all over the world.

Did you know 2010 will be the [International Year of Chemistry](#) as designated by the UN.



## The In2science Team

John McDonald  
j.mcdonald@latrobe.edu.au

Alison Wray  
science-in2science@unimelb.edu.au

Catherine Higgins  
In2science@monash.edu

Barbara Dinsdale  
In2science@latrobe.edu.au

Amanda McKenzie  
In2science@RMIT.edu.au

Stephanie Davison  
in2science@ballarat.edu.au

Dr Chris Fluke  
cfluke@swin.edu.au

Rebecca Waite  
rjwa@deakin.edu.au