2005
Annual review

Welcome to the annual review of the **In2science** Peer Mentoring in Schools Program for 2005.

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Sponsor

In2science is proud to have the support of **the William Buckland Foundation** as its major funding partner. It is only with this kind support that we have been able to achieve what we have done so far.

Board of Management

In2science is overseen by a Board of Management whose members are:

Chair: *Dr Barry Jones AO*

***Prof David Finlay**, Dean, Faculty of Science, Technology & Engineering, La Trobe University*
***Prof John McKenzie FAA**, Dean, Faculty of Science, the University of Melbourne*
***Prof Bob Officer**, Trustee,Tthe William Buckland Foundation*
***Dr Les Trudzi**k, Director, The Allen Consulting Group*
***Mr Tony Cook**, General Manager, Student Learning Division, Dept of Education & Training*
***Ms Soula Bennett**, Science Coordinator, Northcote High School*

Peer Mentor Christina helps students from St Helena SC load dyes for gel electrophoresis.

Achievements of In2science in 2005

During 2005 there were two rounds of placements; one in each Semester.

Semester one Summary of Placements
Despite a much disrupted semester, due to the timing of holidays for both the schools and the universities, **In2science** was able to add three new schools to the program and grow the number of students participating as Peer Mentors.

Placements ran for approximately ten weeks from 14th March to 3rd June. With an increased number of students wishing to be involved in the program during this time **In2science** placed 25 Peer Mentors into **13** schools:

Semester one placements		**Total**
Mentors		**25**

	Metro	**Regional**	
Schools	12	1	**13**
Teachers	36	2	**38**
Students (based on an average of 20/class)	820	80	**900**

Placement No. of weeks	**10**
Total hrs in schools over semester (approx)	**490**

Our original ten schools where joined by **Strathmore Secondary College, Mac. Robertson Girls' High School** and **Glen Waverley Secondary College for this semester.**

Trial Outreach Program

This semester also saw us conduct a trial outreach program, using two of our Peer Mentors to support a physics-based project at Pembroke College, Mooroolbark. The Peer Mentors introduced the project, on making a device to measure time, and then made a repeat visit a couple of weeks later to check on progress. Finally after a further two weeks they returned to judge the end products. The project was highly successful and allowed **In2science** to include an alternative method of supporting schools.

Semester two Summary of Placements
This semester saw **In2science** grow to 17 schools in which where placed 37 Peer Mentors. The additional schools included **Reservoir District Secondary College** and **Footscray City College** in the metropolitan area. We also launched **In2science** in Bendigo at **Flora Hill Secondary College** and **Golden Square Secondary College**. Here students from La Trobe University's Bendigo campus were trained as Peer Mentors.

Semester two placements		Total
Mentors		**37**

	Metro	Regional	
Schools	13	3	**17**
Teachers	38	9	**47**
Students (based on an average of 20/class)	1080	300	**1380**

Placement No. of weeks	**10**
Total hrs in schools over semester (approx)	**906**

Since **In2science** started in 2004 we have been able to have **77** Peer Mentor placements interacting with **140** Year 7-10 classes working with approximately **2800** students. Our Peer Mentors have provided over **1805** hours of mentoring support, which is a fantastic achievement.

Current schools involved in the program

Eltham HS	Princes Hill SC	Strathmore SC – *new '05*
St Helena SC	Mitchell SC, Wodonga	Reservoir District SC – *new '05*
Mill Park SC	Melbourne Girls College	Flora Hill SC, Bendigo – *new '05*
East Doncaster SC	Mac Robertson Girls' HS – *new '05*	Golden Square SC, Bendigo – *new '05*
Macleod College	Glen Waverley SC – *new '05*	Footscray City College – *new '05*
Pasco Vale Girls C		
Northcote HS		

Launch event – Bendigo September '05

In2science was proud to establish itself in two schools in Bendigo for Semester Two. A launch event was held at Flora Hill SC on Friday 16th September and was attended by local MP and state Minister for Educational Services the **Hon Jacinta Allen**. It was wonderful to have such support and with the local newspaper in attendance, and a spot on the local ABC radio, **In2science** got some good local coverage.

ASISTM Funding Project

During semester two **In2science** along with Monash University and eight additional schools received funding to broaden the scope of Peer Mentoring. This funding was part of the *Australian Schools Innovation in Science, Technology and Mathematics Project* funded by the Australian Government Department of Education Science and Training as part of the *Boosting Innovation in Science, Technology and Mathematics Teaching (BISTMT) Programme.*

The University to School Peer Mentoring Program in Victoria project will run for 18 months from October '05 till June '07.

These new schools are:

Haileybury College	Huntingtower School
Doncaster SC	Kurnai College, Morewell
Carwatha College	Mazenod College
Whitefriars College	Sacre Coeur

Peer Mentoring Activities in Schools

Throughout the year our Peer Mentors have supported the teaching of Science and Maths in a wide variety of ways. The most common activity is for Peer Mentors to support students to undertake their class work and practical activities. Peer Mentors help the students understand the topics being covered and help them take an investigative approach to their studies. Much of the time they have worked on a one-to-one basis with students. Teachers have had the opportunity to do new activities supported by a Peer Mentor and to gain some professional development from them on subject areas with which they are less familiar.

Here are a few examples of the variety of ways in which Peer Mentors have contributed to the teaching of Science and Maths this year:

- Organised fish dissection for a class supported by fellow students from university.
- Made presentations about fieldwork trips they have undertaken.
- Organised visits to The University of Melbourne and La Trobe University.
- Lead sea star dissections.
- Attended regular visits to the Melbourne Aquarium with their class.
- Supported IT sessions in both Science and Maths classes.
- Supported visits to the Melbourne Museum, ScienceWorks and to Melbourne Zoo (running project presentations there).
- Demonstrating practicals.
- Made presentations on their own career path from Y10 to current year.
- Run DNA extraction from onion skin practicals.
- Made presentations about their own area of research.
- Demonstrated electricity experiments and the impact of extreme cooling using liquid nitrogen.
- Heart and lung dissections.
- Supported research for science projects.
- Allowing teachers to try new methodology.
- Arranged for academics from the university to run gel electrophoresis sessions.
- Have 10-15 minutes at the end of each maths lesson to run a simple activity to engage students.
- Presented a physics practical workshop supported by fellow students from university.
- Run micro biology practicals.
- Tessellation activities in maths.
- Supporting revision activities in both Maths and Science.

Overall our Peer Mentors have been extremely active throughout the year supporting many varied activities and helping to engage the students.

Peer Mentor Angela supervises students from Glen Waverley SC during a chemistry experiment.

Evaluation Process and Findings

The evaluation process took place across the full year, incorporating 90 informal mentor placement visits by the Peer Mentoring Coordinator to see the Peer Mentors in action and support them on their placements. These visits also offer the teachers the opportunity to give feedback and ask questions about mentoring in general.

Internal assessment
At the end of semester one there was an internal assessment of the program. This involved questionnaires being given to students, Peer Mentors and class teachers. It had the following key findings:

Mentors' perceptions:

- Peer Mentors had a sense of doing something useful.
- Training received positive feedback due to having past Peer Mentors present to help trainees understanding of what will happen in schools (23% increase in those answering 'yes' regarding feeling prepared for the placement compared to '04).
- Peer Mentors liked the '**feel good**' factor they received from involvement.
- Peer Mentors valued the presence of the Peer Mentoring Coordinator at the initial visits to schools.
- Peer Mentors highlighted the importance of having continuous communication between themselves and the teachers to ensure they were fully aware of the lesson activities being planned.

School students' perceptions:

- Students felt they learned more (45.3% said most of the time, 48.4% said some of the time) and lessons were more interesting (80.2%) when there was a Peer Mentor in the class.
- 87.2% felt they understood the work better with our Peer Mentors present, mainly due to there being more adults to ask for help.
- 38.7% were now interested in pursuing the subject beyond Yr10.
- 90.1% of students want a Peer Mentor in future lessons (up 7% on last year).
- Students liked the extra individual attention they received.

Schools' perceptions:

- Teachers continued to give a very positive response to the program.
- Schools felt there were numerous benefits from the program and all schools and teachers who responded to the questionnaire wished to continue their involvement.
- Teachers generally felt there was little or no additional preparation needed.
- Communication between the teacher and the Peer Mentor was again seen as crucial and this needs to be facilitated more readily on future placements.
- Many of the 37 teachers were new to having a Peer Mentor which was a good way of diversifying involvement within the schools – the controlling factor tended to be staff available when a Peer Mentor was free.

CSHE Evaluation
In September 2005 **In2science** commissioned the Centre for the Study of Higher Education (CSHE) based at The University of Melbourne, to undertake an in-depth external evaluation of the program to date. The findings of this will be available in 2006.

Outcomes Planning by Teachers

During this year teachers were asked to identify outcomes that they would like to achieve with the support of Peer Mentors. 30 teachers returned outcome planning forms.

Outcome targeted:	% (n=30)
To use the Peer Mentors to allow more group work in lessons	83%
To use the Peer Mentors to stretch the more/less able students	80%
Use alternative ways of organising the learning environment	63%
To use the Peer Mentors to try new practicals/experiments in lessons	53%
To use the Peer Mentors to generate more scientific discussions in class	50%
To use the Peer Mentors so the teacher can learn more about a topic	43%
To use the Peer Mentors to establish a longer term scientific project	10%

In most cases teachers were able to show evidence of achieving their aims. However, sometimes time constrains were often the main impinging factor to success. Several teachers commented that often a lack of time to discuss the lessons with the Peer Mentor as part of the planning process and other teaching pressures led to less possibly being accomplished.

Peer Mentor Dale meets a snake at the Zoo with students from Reservoir District SC

The Future

In 2006 **In2science** aims to build on the successes it has achieved so far by allowing more tertiary science and mathematic students to get involved in the program and offer their support and enthusiasm to more students in more schools.

Along with the ASISTM funded project there will be about 29 schools in Victoria where Peer Mentoring is taking place.

In2science will continue to seek additional partners for longer term funding to ensure the benefits continue to be available in the foreseeable future.

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Background and benefits of In2science

Established in 2004 as a joint venture between La Trobe University, The University of Melbourne and The William Buckland Foundation, **In2science** places tertiary students in schools to work alongside teachers of science and mathematics to help engage high school students in these subjects. **In2science** is based on the highly successful STAR program run from Murdoch University, WA.

The principle is simple in that peer values and interests are among the biggest influences on teenagers and that positive influences from peer role models, in an academic context, need to be sustained if they are to have lasting impact.

The **In2science** program has four main aims:

- To generate enthusiasm for Science (especially the enabling subjects of Chemistry, Mathematics and Physics) in students in the middle years of their secondary education (Years 7-10).

- To place university students in schools to act as positive role models to secondary school science students inspiring them to achieve their potential.

- Through the role models, promote the value and rewards of Science as a positive career choice

- To foster links between schools and universities.

To achieve these aims, tertiary students from La Trobe University and The University of Melbourne undertaking science degrees at both undergraduate and postgraduate levels volunteer to participate in the program and become Peer Mentors.

These Peer Mentors visit allocated schools for 2-3 hours per week for 10 – 12 weeks during a semester. Here they are a role model for the students, inspiring them to raise their aspirations and achieve their potential in Science and Mathematics. The Peer Mentors also develop a close working relationship with the class teachers, supporting them in their teaching, allowing them to try new activities and teaching methodology. The Peer Mentors also act as a scientific resource for the teachers often having a subject specialism that the teacher may not have.

Primarily the Peer Mentors interact with the students, getting to know them and supporting their learning. In addition many Peer Mentors have organised activities and practicals, made presentations and supported learning in various different ways.

In2science offers placements to government schools within Victoria.

From overseas and interstate programs along with our own evaluations, Peer Mentoring has been able to provide a range of benefits for all involved:

Benefits for high school students,

- Through interactions with a Peer Mentor students in the classroom gain an enhanced experience and increased engagement in science and mathematics.
- Students are able to interact with a current university student who acts as a positive role model to them.
- School students are able to develop their communication skills and, through discussions, the Peer Mentors can challenge the students to learn more about the world in which they live.

- Through the placement of Peer Mentors in classes, students are gaining increase value from their lessons i.e. more teacher time, support, alternative explanations.

Benefits for Science and Mathematics teachers,

- With the support of the Peer Mentors in the class, teachers are able to develop resources, new projects and experiments and strategies to increase engagement along with new teaching pedagogy.
- Teachers gain that extra pair of hands to help during practical activities.
- Teachers gain additional support within the classroom to assist students at all levels.
- Peer Mentors are an up-to-date and valuable resource for the classroom teachers especially for new curriculum areas such as genetics, biotechnology and nanotechnology.
- Peer Mentors can inject additional energy and enthusiasm into the classroom.

Benefits for Peer Mentors (tertiary students),

- Peer Mentors have the opportunity to develop their communication, organization, problem-solving and interpersonal skills throughout their mentoring experience.
- Peer Mentors gain an insight into the teaching profession as a possible career choice.
- Peer Mentors are able to participate in a volunteer-based activity that can enhance their CV and their employability.