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GSITMS Graduates of Distinction

News and Views for Alumni
Graduate School of Information Technology and Mathematical Sciences

Succeeding Professor Sid Morris the Graduate School will continue to succeed

Celebratory Gala Morning Tea – GSITMS Promotions (story page 3)

This edition is occurring at a time of 'changing of the guard', and also a time of very positive outlook for GSITMS. There has been a remarkable 50% increase in enrolments of local students for programs offered by the Graduate School at its Mt Helen campus. Further the distinguished mathematics scholar and researcher Professor **David Gao** has arrived at UB and will have a major input into the School's programs and research projects. A profile of Professor Gao will feature in the next edition.

More good news is associated with Professor **Jon Borwein's** delivery of the Alexander Rubinov Memorial Lecture which has now been firmly established as a prestigious, annual public lecture.

Other encouraging pointers to the Graduate School's rise and rise include the record number of Bachelor and Masters degrees conferred at the recent graduation ceremony in addition to the outstanding six PhD's conferred.

At this time of change with Dr **Charlynn Miller** commencing as Deputy HOS and a new appointment of HOS (pro-tem) imminent, it is also appropriate to revisit the Graduate School's Statement of Strategic Intent (2007-2011) where among other outcomes it includes: "*The mission of this School is to be known for excellence in teaching and research resulting in* **graduates and researchers of distinction** *whose achievements have regional, national and international impact.*"

That statement was forged under Professor Morris's leadership and has been very relevant over these past years. This goal will very much remain high on the Graduate School's agenda as it moves through this transformational period in GSITMS and UB generally.

The candidate selected as the Head of School (pro tem) will have a rich field from which to mine. As the recently adopted UB promotion goes - "*University of Ballarat – Learn to Succeed*".

T Eugene Kneebone, Editor
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Congratulations due all round-IBM

IT Services Centre opening

This strategic facility represents a partnership between IBM Australia, the State Government, the City of Ballarat and the University.

UB's Vice-Chancellor and President Professor David Battersby commented on the significance of the facility:

"This $10.8 million development is the result of great vision, commitment, innovation and collaboration. It represents a vote of confidence in Ballarat and regional Australia. UB remains very proud to work with IBM, one of the world's leading technology and service providers."

The project will deliver to the region:

- ✓ 300 new, high level, sustainable **jobs**
- ✓ An improved regional **skills** base; and
- ✓ Increased **learning and career** opportunities for our students through the IBM – GSITMS *'Earn As You Learn program'*.

The new building will join IBM's existing delivery centre, which already employs some 800 people, as a new delivery hub for IBM's Global Technology Services (GTS) business. This state-of-art facility will provide IBM clients with innovative ICT services including Remote Technical support, eSecurity, Business Processing, ICT support and consulting for

IBM's global operations and will service clients across Australia, Europe, Asia Pacific and the US.

The facility will build on IBM's long standing investment in Ballarat and the Victorian economy, which aims to provide opportunities for IT professionals in the area, and continues to develop the specialist skills sought by IBM's clients.

For nine years, IBM Australia has participated in UB's Bachelor of Information Technology (Professional Practice) course, by offering GSITMS students an '*Earn As You Learn*' placement at IBM with guaranteed employment upon the successful completion of the course. Students have appreciated

By focusing on regional Victoria and partnering with the University, IBM will also continue to create educational and employment opportunities for young IT professionals

the experience gained working with this IT industry 'giant' as part of their studies.

"*The opening of this new facility is an exciting evolution of our investment in Victoria and Ballarat, and presents a great opportunity for our clients to take advantage of our growing services capacity in Australia,*" said **Peter Campbell**, General Manager, IBM Global Technology Services, IBM Australia and New Zealand. "*It also builds on our commitment to keep cultivating interest and skills in the IT industry which are so important to Australia's economy and prosperity.*"

The IBM Services Centre was formally opened on December 4, 2009 by the Victorian Premier, the Hon **John Brumby**.

For more information about IBM, visit www.ibm.com or contact **Connie Klimko**, IBM Communications. Please phone: 041 966 5753

Preparing to face future challenges

Promotions on parade

At the end of 2009 GSITMS enjoyed the 'lion's share' of academic promotions (based strictly on merit), with ten out of UB's total of 15.

Those that were promoted to Academic Level B were Dr **Richard Dazeley**, Mr **William Harvey**, Mr **Sasa Ivkovic**, Dr **Nadezda Sukhorukova** and Mr **Sunam Pradhan**.

Those who were promoted to Academic Level C (i.e. Senior Lecturer) were Mr **Frank De Luca**, Dr **Alexander Kruger**, Dr **Siddhivinayak Kulkarni** and Dr **Charlynn Miller** with Dr **David Yost** promoted to Academic Level D (Associate Professor).

At the end of 2009 the appointments of Dr **Adil Bagirov** as Associate Professor in Optimization and Dr **Zhiyou Wu** also as Associate Professor in Optimization were announced.

HOS Professor **Sid Morris** said:

"These are two outstanding individuals and we are so lucky that we have attracted these fine researchers and scholars to take leadership roles in GSITMS."

Professor Morris believes that these key appointments and promotions, together with the recently announced appointment of Professor **David Gao** as the Alexander Rubinov Professor of Mathematics, will renew and energize the Graduate School.

Dr **Charlynn Miller** has also been appointed as Deputy Head of School (DHOS) from 1 February, 2010 for three years. Charlynn is well known to readers of *GSITMS Graduates of Distinction* through her many academic and administrative roles within the School and UB generally.

Professor Morris confirmed his confidence in these appointments:

"These appointments are indicative of GMITS having become a much more mature School and well-prepared to face whatever challenges are ahead."

The Graduate School enjoyed a well attended celebratory 'Gala Morning Tea' to congratulate promoted colleagues.

GSITMS breaks records

GSITMS December graduations

This Ceremony was notable, not only for a record number of GSITMS graduates (well over 200 individuals receiving awards under some 26 categories) but especially for the six students who received a PhD (Doctorate of Philosophy) awards, pursuing with passion their chosen area of study . These included students from an impressive range of international backgrounds (including Guillermo the sole UB student from Cuba). Warm congratulations go to:

Dr **Shamsul Huda**; Thesis: *Hybrid Training Approaches to Hidden Markov Model Based Acoustic Model for Automatic Speech Recognition;*

Dr **Alyx Macfadyen**; Thesis: *An Interaction Framework for 3D Environments Using Structured Reasoning;*

Dr **Bahadorreza Ofoghi**; Thesis: *AOP and HLA: A New Aspect on Distributed Simulation Development;*

Dr **Guillermo Pineda-Villavicenio**; Thesis: *Improving Upper & Lower Bounds on the Order of Large Graphs Under Degree & Distance Constraints*;

Dr **Timothy James Pokorny**; Thesis: *AOP and HLA: A New Aspect on Distributed Simulation Development;* and

Dr **Asef Nazari Ganjehlou**; Thesis**:** *Derivative Free Algorithms for Nonsmooth and Global Optimization with Application in Cluster Analyses.*

L to R: Alyx, Asef, Guillermo and Tim

Of special note was the recipient of the prestigious **University Medal** that went to a GSITMS Honours (by research) graduate, **Julie Frances Ross,** who completed her studies as a mature age student, parent and part time professional consultant.

The Occasional Address at the GSITMS graduation ceremony was given by the Consulate General of India (Melbourne), Ms **Anita Nayar**, partly in recognition of the many enthusiastic students who study at the Mt Helen campus or at partner sites that originate from the sub-continent. See stories following on Page 5 – Ed.

The Graduate Speaker in response **Phillip Leicester** echoed the feelings of many when he commented:

"…today we graduates have successfully obtained our degrees not only by our own individual efforts, but by the efforts of our dedicated lecturers and tutors. Their assistance and guidance in helping us achieve the relevant knowledge and skills in readiness for the obstacles that we will encounter throughout our chosen careers, is a reflection on their motivation and inspiration to see their students succeed in the outside world.

"Many of the lecturers and tutors in GSITMS are from overseas and they too have had to deal with the many challenges in adjusting to the Australian way of life and to their new working environment within UB. By choosing to come to Australia and this University, they bring with them many experiences and an in-depth knowledge in accomplishing learning and practical tasks in vastly different ways. This depth of knowledge is very much appreciated by their students, their fellow lecturers and the university in general.

"GSITMS and UB itself can take pride not only in providing us with knowledge; they have also prepared each of us for a lifetime journey of discovery."

"This journey will see us as ambassadors of this fine university in the ongoing development of our working lives and as individuals. The journey will include discovering ourselves through the successes and setbacks that we will encounter, including the respect and understanding of others that we will meet from various cultural backgrounds.

"So go forth, embrace discovery and live the journey."

Graduates in Action

India at Home provides a career away from home

Andrew Snehal P Dave is a graduate with both a Bachelor of Information Systems & Master of Information Systems from UB. Previously Snehal successfully completed a range relevant ICT studies over three Semesters in an Indian University. Hence UB was able to grant him 'recognition of prior learning' which reduced the length of his UB programs. Due to the GSITMS 'consideration' Snehal has been able to complete both of these degrees in minimal time.

"The GSITMS syllabus was fantastic, combining Business Management with IT Communication Systems."

Snehal now feels confident to pursue his career in these fields, both of which are relevant to his present job. He is enthusiastic about his position as a permanent full-time Manager in one of the biggest Asian food Import-export companies, *India at Home Pty Ltd*, a specialised supermarket located in Hawthorn, Further, Snehal is also working part-time as a Sales Executive for *3 Mobiles Pty Ltd*. and earns what he regards as a 'princely sum'. Snehal in response says:

"Thank you so much UB and GSITMS – your flexible academic programs have transformed my career and whole life."

Contact: Snehal (Manager) *India at Home Pty Ltd*, E-mail: davesnehal1@yahoo.com.au or visit his website: www.indiaathome.com.au.

Quick to learn on the job

HariKrishna Yerragunta graduated from GSITMS in December 2006. In his first year of employment he worked successfully for the *Telstra Corporation*. Hari achieved excellence in this position, leading to his name being featured on the *Telstra* website indicating that he had been identified as one of the Company's better employees, it stated that:

"Hari is always ready to assist 'new joiners' and help them to achieve their targets."

Subsequently Hari joined *Accenture Australia* where he remains gainfully employed. There Hari has received *Celebrating Performance* Awards for professionally leading teams (both his primary team and other ad hoc teams). He has also received positive recognition from the senior executive, who manages the total project. Hari's ongoing career successes are recorded in certificates that note:

"As a new hire joining 'Step up Data' migration, Hari has climbed the learning curve quickly and made positive efforts to become productive, doing an excellent job in the production team."

Hari is very grateful for the opportunity to share his career successes at *Telstra* and *Accenture Australia*

Hari encourages other GSITMS graduates to likewise share their career stories as an encouragement to those on the academic road, showing that it does eventually come to a profitable and positive ending. *Yes please* – Editor.

A 'satisfied customer' provides positive feedback for GSITMS academic staff

*"Dear Professor Robinson - I am a student at UB and would like to pass on feedback about recent experiences with one class – STATS1000. The lecturer, **Peter Martin** and my tutor, **Kathy Neal**, were brilliant. They were approachable, professional and clearly conveyed course information and expectations. Kathy always made time to answer my many questions about exercises I had worked through at home and Peter Martin's doors were always open for subject queries. Their attitude to the course and their attitudes towards students were positive and encouraging which really made a difference for me".* **"I enjoyed my experiences in this unit. It reminded me how wonderful learning can be."**

Well earned retirement

The Verna Barry Story

Verna is a long-term employee of UB (for well over 40 years) and in many ways her story reflects the many (and regular) mergers, reorganisations and iterations of the prevailing academic entity (GSITMS and its predecessors) that have delivered Engineering, Mathematics, Science and Computer Science post-secondary (now Higher Education) studies to regional students.

For the past two decades Verna been in fractional/casual employment but nevertheless has kept her hands on the 'administrative pulse' of the organisation. Verna has reflected:

"Time is only long as you look forward, never as you look back."

As fifteen year old, accepting a position in the office of the School of Mines and Industries Ballarat, Verna could hardly have predicted or imagined spending all of her working life in what is essentially one institution. In the work place, Verna has come into contact with innumerable people and has genuinely appreciated the help and cooperation afforded by staff across all levels. In particular Verna says:

"I'm grateful for staff, younger than myself, who have been very ready to help solve various computer queries and get me out of many tight corners."

As a testament to her career, Verna has proved that working full time in central administration and part-time in two academic areas has provided all of the change, challenge, advancement and job satisfaction that any person could hope for in their working life.

Verna's Employment Summary

November 1960: Junior Typist, School of Mines and Industries, Ballarat (SMB)

February 1963 - June 1976: Secretary to Principal, School of Mines and Industries, Ballarat

July 1976 - August 1988: Secretary to Director, Ballarat College of Advanced Education (CAE).

September 1988 - December 1994: Administrative Officer, Faculty of Engineering; later Division of Engineering & Science

January 1995 - December 2009: Administrative Officer, School of Mathematics and Computing, then School of Information Technology & Mathematical Sciences and currently the Graduate School (GSITMS).

The photo at right depicts the entire Administration Staff of the Ballarat CAE, 1978. Verna appears in the back row, together with familiar names such as Alan Webb and Robert Hook. Photo courtesy of Kaye Lewis – can you identify her?

Verna has also seen many technological developments over the period and not just in the academic offerings but also in carrying out her duties as a senior Administrative officer. These have included:

- ✓ Manual **typewriters** replaced by computers (as word processors) with applications well beyond these;
- ✓ Manual **switchboards** become automatic, with a direct-dial facility and local networks;
- ✓ *Gestetner* (wax stencils) and *Fordigraph* (fluid) means of producing **multiple copies** of documents have thankfully been replaced by speedy photocopiers and printers and ultimately computers due to technological convergence; and
- ✓ Speedy **communication** generally via email and fax and a myriad of more recently developed social networking sites and the like;

Verna's domestic interests have revolved around the joys of her garden, creative flower arrangement, sewing & needlework all of which she will have more time to pursue in her very well earned retirement.

CIAO Chat about this and that

Second Annual Alexander Rubinov Memorial Lecture

CIAO welcomed Professor **Jon Borwein** as guest speaker at the 2009 **Alexander Rubinov** Memorial Lecture. The second public lecture in the now established series, was held on 9 November at UB's Brewery Lecture Theatre. This annual event is held to honour the late Professor Rubinov, the Founding Director of CIAO. More than 70 people, including Alex's two sons **Mika** and **Eldar**, academics from other universities, local secondary school teachers attended the event. This event is held annually to dovetail with the UB Research Conference.

Guest speaker Professor Borwein's topic for the evening was "*The Computer as Crucible*: The End of Theory?" His book explores experimental mathematics, which utilizes computers to run computations.

These computations are sometimes no more than trial and error tests which look for patterns, to identify particular numbers and sequences, and gather evidence in support of specific mathematical assertions.

This process can be likened to the work of contemporary chemists, who mix various substances together in a *crucible* and heat them to a high temperature to see what will happen.

Similarly, the experimental mathematician puts a potent mix of numbers, formulas and algorithms into a computer in the hope that something of interest emerges.
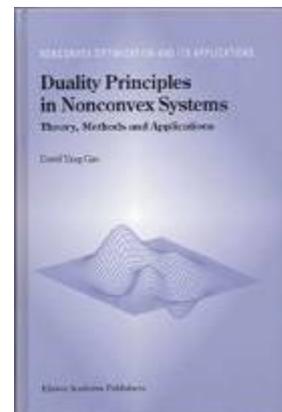
Professor Borwein is Laureate Professor in the School of Mathematical & Physical Sciences at the University of Newcastle, New South Wales and Director of CARMA, the *Centre for Computer Assisted Research Mathematics and its Applications*. He first encountered Professor Rubinov's work in 1980 after meeting him in person in 1997 they went on to become collaborators and good friends

Note: the report above is largely reproduced from the recent *CIAO Newsletter* - Summer 2009 Edition, by courtesy of its Editor **Elizabeth Matuschka**. For information about CIAO and its consultancy and

research capacities please contact Elizabeth at e.matuschka@ballarat.edu.au

Mathematics on the Go with Professor Gao

David Y Gao is well known in the world of higher mathematics for such works as his joint editorship of *Advances in Applied Mathematics and Global Optimization*. The book explores research topics including the residual bounds for non–potential equations, analysis of brain neuron–dynamics, dualistic Riemannian manifold structures, canonical duality, and redundant Klee–Minty cubes. Much of this content resonates with the ongoing work of CIAO.

> *This book is intended to stimulate early career graduate students to venture into this rich domain of research.*

The content within the volume reflects the highest level of scientific research, while concentrating on the methodological thinking that will allow the non–specialist reader to understand it.

Given that David has very recently taken up his appointment as the Alexander Rubinov Professor of Mathematics in GSITMS (Feb. 2010) as the Graduate School's third Chair, his approach to encourage graduate research as evidenced by this volume, will build confidence for his future stewardship at UB.

Indian Researcher Visits and Delivers

Associate Professor **Joydeep Dutta** from the Department of Mathematics & Statistics, Indian Institute of Technology, Kanpur, India is currently on sabbatical leave for six months, but found time to collaborate with colleagues Associate Professor **Adil Bagirov** and Dr **Alex Kruger**. His major research areas are optimization theory and variational analysis, with specific interest in convex and nonconvex optimization, vector optimization, bilevel programming and abstract convexity. While at GSITMS he presented a public seminar on his topic: *Is Bilevel Programming a Special Case of Mathematical Programming Problems with Complementarity Constraints?* (The answer is Yes – but…Editor)

'Honourable' Presentations

L. to R: Chris, Luke, Matthew, Charlynn, Joel & Cameron

At the end of 2009 final presentations were made by the seven Bachelor of Computing (Honours) and Graduate Diploma of Computing students. The presentations were assessed, using criteria which included content, presentation and response to questions, by a panel of academic staff, led by Honours Coordinator **Charlynn Miller**.

The presentations included those that were steeply rooted in industry practice like that of **Charles Esson**

whose thesis was "*The Transitive Closure, Inbreeding Coefficients, Pedigrees, on line collection and on line presentation*" (as applied especially to pig breeding in a complex agricultural organization).

Luke Rogers explored the '*Second Life*' environment which creates a 'Virtual Island' where researchers can create real life simulations. His thesis "*Simulating Clinical nursing Scenarios: Exploring Student Experiences and Perceptions of Second Life as a Simulation Platform*" has a direct application to the teaching of Nursing at UB.

Matthew Kelly gave new meaning to following a 'story line' with his research thesis "*Enhancing Drama in 3D Interactive Narratives*". This topic provides a detailed analysis of four case-studies conducted that involved individuals playing a 3D computer game developed using Polti's Dramatic Situations as the foundation of the story. (**George Polti** postulated that there are a maximum of 36 Dramatic Situations that can make up any story).

Mature-age student, **Christopher Kerrich** who had articulated from TAFE courses to Higher Education, chose a research theme relating to a problem he had encountered during earlier studies and gave it an IT solution. His thesis was "*Attitudes and Perceptions of Source-Code Plagiarism*". Plagiarism can be a particular and distinctive issue where computer programming is concerned and has been largely ignored to date by researchers. After interviewing suitable subjects Chris concluded: *"…a majority support a holistic, educative approach as the most effective way of tackling source–code plagiarism."*

Riko Rakmanto, a capable international student under the Supervision of Dr **David Stratton** and Mr **Glen Stevens** chose a more computer oriented thesis "*IPSec Implementation in IPv6 Network on Business to Customer Model*".

Exploring the popular growth area of Computer Games Technology was **Joel Thewlis**, who was under the supervision of **Grant Meredith** and Dr **Richard Dazeley**. Joel's chosen thesis was "*Usability and Immersive Characteristics of Virtual Reality Head-Tracking using a Nintendo Wii Remote*".

The final presentation was by **Cameron Tudball** who under the supervision of Dr **David Stratton** pursued the thesis "*Management of HLA simulations using existing web interfaces*".

Whilst most students were somewhat nervous in the terms of the assessment criteria (especially in their response to questions) they did very well overall.

The School has recently carried out the required five yearly review of its Honours Programs. This process ensures that GSITMS programs remain rigorous and relevant at all times.

How David 'hiked' in Vancouver, Canada

David Stratton (Senior Lecturer in Computing and the supervisor of two of the above Honours students) has recently returned from his Long Service Leave travels. He says the highlight was hiking in the spectacularly beautiful forests of Canada with the assistance of a special one-wheeled *Trail Rider* chair (hired for only $10 rental per day) plus two strong helpers. (David's son **Sam** is shown on the left).

Remaining relevant to industry and the community

'Capstone' celebrations 'cap-off' a productive year

GSITMS lecturer **Kathleen Keogh** coordinated the final year program that put students firmly in touch with 'the real world' connecting them with the IT needs of the surrounding region.

In 2009 GSITMS had students in Capstone projects working on and delivering a range of useful products for their local community.

Kids Foundation is a Ballarat-based organisation that specialises in educating children about safety at school & home and has worked with a team of students second semester 2009, to explore the possibilities around making their website more interactive and exciting for primary school students.

> *A team of GSITMS students developed a prototype website with animated characters, online puzzles and a forum for schools to interact about safety issues.*

The photo (above) shows students at the final handover meeting with *Kids Foundation* Staff in Wendouree.

The Graduate School has evolved a strong relationship with the Ballarat Special School, developing multiple projects with them over the past few years. The latest project delivered a very useful multimedia teaching tool - a virtual supermarket, to the Special School. This will enable students who cannot easily move in the threatening 'outside' world to practise and develop shopping and budgeting skills in a 'virtual' supermarket in their classroom. This virtual supermarket is simple yet visually stimulating and has great potential in the classroom context.

Students also delivered a new athletic club management system to the *Eureka Athletics Club* to help manage membership, record and process race results and automatically generate certificates.

BIT (Computer Games) students developed a prototype game called '*Ninja Raptor*' in partnership with **Steve Fawkner** the CEO of the Melbourne-based *Infinite Interactive*. This is an innovative IT company best known for its *Warlords* and *Puzzle Quest* series of games. *Ninja Raptor* was a side-scrolling platform style game which included puzzle elements. The game was created and coded from scratch using the Ogre 3D engine and included a custom-made level creator. The team was in part mentored by **Sam Mayo** who himself is a recent GSITMS graduate and works for *Infinite Interactive* in quality assurance.

Kathleen has put a heart-felt challenge to others who have previously graduated, to provide feedback and potentially participate in future Capstone programs:

"Now that you have been working in the 'real world' for some time, think back to your own Capstone project experience and please provide us with some feedback.

"We would welcome comments on how your final year project work has prepared you for your career. Can you suggest changes that could be incorporated to improve the project experience? Can you confirm if your Capstone project did in fact prepare you well? How does your work now relate to your experiences in 'project' and could it perhaps generate a future project?

"Do you have the time and motivation to visit the Graduate School and talk to our current project students one day? If you are, we would love to make arrangements for your visit."

Please email the 2010 coordinator **Shamsheer Syed** *s.syed@ballarat.edu.au*, with your reflective comments in response to the above invitation and/or questions.

NewsFlashNewsFlashNewsFlash

Schools Adopt *fdlGrades*

The Database, developed by GSITMS staffer **Frank De Luca,** that puts all student information into the one convenient place, continues to be extended and enhanced. It now has the capability to work across schools and has been adopted by the Schools of Business, Education and Nursing. Further additions will proceed over future months.

They caught a 'whopper' whilst Phishing

Congratulations go to Dr **Liping Ma**, and her co-authors Professor **John Yearwood** and Associate Professor **Paul Watters**, on winning the Best Paper Award at the *APWG conference on eCrime* in Tacoma, Washington, USA in late 2009. Paul reports, "…*Liping gave a fantastic presentation*". The paper was titled "*Establishing Phishing Provenance Using Orthographic Features*". This high recognition reflects very well on all contributing areas of UB's organisation, (namely ICSL, CIAO and GSITMS).

Vice-Chancellor's Seasonal reflection

Professor **David Battersby** in his annual Seasonal Greeting, lists a number of highlights which have involved UB's Resources, Community Development, Research & Knowledge Transfer and Staff & Students. GSITMS was specifically well represented with:

- ✓ $10.8 **IBM IT Services Centre opened by the Premier of Victoria**, the Hon. John

Brumby, at UB's Technology Park (See story on page 2- Editor);

- ✓ Mr **John Dawkins awarded an honorary doctorate** at a mid-year GSITMS ceremony where he was also the keynote speaker. His occasional address reflected both on the place of regional universities during his time as Minister and his peceived challenges for the future;

- ✓ The **second Annual Alexander Rubinov Lecture** delivered by Professor **Jon Borewin** (See story on page 7 – Editor);

While we are boasting…

UB (and GSITMS) also claim the following 'niche' advantages in servicing the needs of its students;

- ✓ Victoria's **Number 1 ranked university for good teaching** in Sciences, Computing and Engineering;

- ✓ **Developing strong Industry relationships** and programs (see '*Capstone project*' story – Page 9 Editor);

- ✓ **State-of-art facilities** including computing and virtual reality laboratories; and

- ✓ Smaller classes - with **friendly, individual attention given to UB students**.

Professor **Sid Morris** has recently authorised up to seven GSITMS Education Costs Scholarships for 2010 each at the value of $2,254 and one GSITMS Indigenous Scholarship, also valued at $2,254.

For further information on any of GSITMS's Graduate Diploma or Bachelor Programs contact the Graduate School on (03) 5327 9770, or via email itms.enquiries@ballarat.edu.au or visit UB's website:

Baby, Baby, Baby

Baby congrats go to GSITMS staff members **Shannon Bell** and **Troy Heland** (*Jenna May*, a sister for *Brodie*), **Theresa Watson** (*Lola Kate*, a sister for *Oscar* and *Scarlett*) and **Kellie Osborne** (*Jack*).