



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

UQ Chemistry &
Molecular Biosciences

ALUMNI NEWS

ISSUE 1, 2010

The first edition!
Welcome!

Alumni Reunion
July 2010

What are you doing
these days?
Faces and stories



Photo: Undergraduate science
students Katelin Haynes and
Michael Milevskiy

100
YEARS AHEAD



Photo courtesy of Lucas Goh

Research Students Symposium

The fifth annual School of Chemistry & Molecular Biosciences (SCMB) Research Students Symposium was held in November 2009 to much acclaim. Head of School, Professor Alastair McEwan, hailed it as one of the most successful to date.

The symposium, held at The Women's College in St Lucia, attracted nearly 200 registrations from MPhil, PhD and Honours students, amongst others. For the first time, postgraduate coursework project students were invited to participate.

Nearly 50 posters were presented, and students were selected on the basis of submitted abstracts to give oral presentations.

The day, which also included scientific equipment supplier displays and participation by a number of learned societies, was rounded off with a fascinating talk from guest speaker Professor Michael Good, AO, Director of Queensland Institute of Medical Research. Professor Good spoke on the immunological challenges of developing vaccines for variant organisms.

Prizes were presented for the best posters and oral presentations in a range of fields.



A prospective student experiments with SCMB equipment at UQ's Open Day 2009

What does UQ offer its alumni?

Discounts with various UQ facilities, clubs and services, including **UQ Library**, **UQ Connect** (Internet Service Provider), **UQ Staff & Graduates Club**, **Schonell Theatre**, **Customs House**

Alumni **career and graduate employment opportunities**

Receive the quarterly alumni newsletter, **The Connector**

We can help you get back in touch with old friends

If you travel overseas, the local UQ alumni group may be able to help with advice, networking and friendship

Keep in touch with UQ news through **Graduate Contact** and your faculty/institute or school/centre newsletters

Obtain assistance in organising a reunion or receive invitations to your next reunion

For details on these benefits, go to: www.alumni.uq.edu.au/stay-connected

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Welcome

Welcome to the inaugural newsletter especially for UQ's graduates in the disciplines of Biochemistry, Molecular Biology, Biotechnology, Chemistry, Microbiology & Parasitology.

Our plan is to issue future editions in an electronic format. If you'd like to ensure that you continue to receive the UQ Chemistry & Molecular Biosciences Alumni News roughly three times a year, please go to www.alumni.uq.edu.au/update-your-details and complete the form. We hope you find this newsletter interesting and that you might be able to join us at this year's reunion event.



ALASTAIR McEWAN
Professor of Microbiology
Head, School of Chemistry & Molecular Biosciences

Alumni Reunion: July 2010

Register now!

UQ celebrates its Centenary in 2010. Graduates of Chemistry, Biochemistry & Molecular Biology, Microbiology and Parasitology are invited to a special day to catch up casually with old friends, with staff, and to see how things have changed.

- See historical displays and 'where are they now?' alumni profiles.
- Tour the research and teaching facilities, some of which have won architectural awards for their refurbishment.
- Hear seminars from staff on topics of interest, highlighting developments in certain fields over the last century and future directions.
- Catch up with friends and staff members over a complimentary, light, casual lunch with drinks.
- Network with industry representatives.
- Join in the launch of the UQ Chemistry & Molecular Biosciences Alumni network.

This is a free event for alumni, industry partners, current and past staff. It will be held at St Lucia on Saturday 3 July 2010 from 10.00am.

To register your interest, go to: www.uq.edu.au/centenary/chem-mbs-reunion or telephone: **+61 (7) 3365 4043**

What are you doing these days?

We'd love to hear your story of what's happened since you graduated. Don't think nobody's interested! With your permission, we're publishing stories like those below in our newsletter and on our website – not just stories of spectacular success, but stories about everyday graduates so you can catch up with people you knew as a student. Go to our on-line form at: www.science.uq.edu.au/share-my-story



Suzy Baxter

Suzy Baxter's Chemistry and Biochemistry degrees have taken her from the bench to the boardroom...

"WHATEVER you can do, or dream you can, begin it. Boldness has genius, power, and magic in it."

Suzy Baxter (BSc [Hons], 1998; M Technology Management, 2004) lives by this Goethe quote, and, not surprisingly, her ensuing career path has been showered with success.

Starting her working life as an analytical chemist after achieving a Science Honours degree in 1998 (chemistry and biochemistry, under Professor Bill Kitching and

Dr James De Voss), Suzy's rise to a leading position with a worldwide company was both smooth and swift.

From her beginnings in science, Suzy has seen her career blossom, with a recent highlight being her enviable role as the European Consulting Business Development Leader at PricewaterhouseCoopers, based in the charming western European city of Luxembourg.

Returning home, Suzy took up a role as a business development director for KPMG Queensland – part of a global network of firms providing audit, tax and advisory services to clients and communities.

In January 2010, she started work in Dubai as Business Development Director for the Middle East region (14 countries) for PricewaterhouseCoopers.

Suzy attributes her latest career achievement to her two UQ degrees, which she says equipped her with essential abilities to take on her new role – from the likes of analytical skills to "big picture" business skills.

"Although I may not operate in a traditional scientific laboratory environment, I believe that my ability to facilitate and leverage the differences between the commercial world and science has enabled me

to deliver practical innovations and performance improvement to our clients and internal business globally, regardless of industry," she says.

Suzy says her time at UQ was also linked to the development of her "curious mind, personal drive, determination and persistence" – which have been the foundations of her successes to date.

"I met lecturers, fellow students and mentors who encouraged me to reach beyond the borders of Brisbane and Australia to achieve my dreams and career goals."

With PricewaterhouseCoopers' European region covering no fewer than 20 countries, Suzy has savoured the fruits of completing her studies and following her heart, working and travelling all over the world.

"I loved the diversity of cultures, markets, clients and people I get to know through my previous job," she says.

"Now I hope to leverage my international experience locally, to help people achieve beyond their best."



Andrew Bennett

Andrew Bennett (BA, BSc [Hons], 2005) works as an Occupational Hygienist at BP's Brisbane plant...

From assessing chemical and noise exposure to the ergonomics of manual handling, Andrew is one person working to ensure the good health of hundreds of employees at Queensland's largest crude oil refinery.

While he is equipped with a solid grounding in chemistry, including a Bachelor of Science (biological chemistry) and Honours (organic chemistry), which he undertook with Dr Ross McGreary, Andrew's work is far from the lab-based environment many believe a chemistry degree leads to. Instead, his role is the perfect mix of science and social interaction.

Following a year at Bulwer Island as a laboratory graduate trainee, Andrew says he came across his position after gaining

some experience in the refinery's health, safety and environment department. "As luck would have it, I enjoyed the new role immensely," he says.

"I get to talk to new people every day, while at the same time build on my understanding of industrial toxicology, physics, chemistry as well as health and safety standards and legislation."

Andrew's tasks now range from providing expert health and safety advice to the island's 700 workers, to using scientific instruments and techniques to measure the refinery's hazardous substance output.



Joanne MacDonald

Joanne MacDonald (BSc [Hons], 1997, PhD Microbiology 2003) has designs on DNA...

Interwoven in the complexities of the body's DNA strands lies an incredible, life-enhancing potential – a potential Joanne gets closer to unlocking every day.

Virologist and molecular biologist Joanne Macdonald is an Associate Research Scientist at Columbia University's Division of Experimental Therapeutics.

Based in the heart of New York City, Joanne manages the biology portion of the division while pursuing her own research in molecular computation. Also known as DNA computing, molecular computation attempts to replace traditional, silicon-based computer technologies with DNA.

Alongside a multidisciplinary team of chemists, biologists and computer scientists, Joanne has co-constructed DNA computer technology, entitled MAYA-II, which

uses DNA-based logic gates to play tic-tac-toe interactively with a human opponent.

Amazingly, Joanne still uses the suite of techniques she learnt during her undergraduate and postgraduate studies at UQ – which included a Bachelor of Science (Honours) and a PhD (Microbiology), which was supervised by Associate Professor Roy Hall – in her current revolutionary research.

"Learning the research process has allowed me to change fields and become involved in work I would never have imagined I would be doing, based on my original Microbiology training," she says.

Long-standing staff retire

Two long-standing members of the academic staff known to many alumni have retired over the past year or two, but are continuing an association with UQ to help the next generation of science students.



Associate Professor Trevor Appleton

(BSc [Hons] 1967, PhD Chemistry 1970)

Associate Professor Trevor Appleton retired in November 2009 after 35 years teaching and researching Chemistry at UQ and providing guidance to students as a senior academic advisor.

Trevor made a considerable contribution over many years in chemical education at the University and also throughout the Royal Australian Chemical Institute (RACI) Chemical Education Division for which his contribution has been acknowledged with a number of citations. Trevor had an extremely active group in Platinum Chemistry with particular relevance to anti-cancer platinum compounds and was internationally recognised in this area of research. One of his publications has been cited ~1,200 times. Many of Trevor's PhD graduates have gone on to academic positions both in Australia and overseas. In later years, Trevor served as a student advisor, helping students in need of guidance. Trevor has run the RACI titration competition for high school students for many years, including at a national level. The competition brings hundreds of students to the St Lucia campus each year to see the opportunities in studying science. Trevor has kindly offered to assist in the ongoing organisation and staging of the titration competition as part of an honorary appointment with the University.



Professor John de Jersey

(BSc [Hons] 1966, PhD Biochemistry 1969)

Professor John de Jersey retired at the end of 2007. John's association with The University of Queensland goes back to 1962, when he started his undergraduate studies. He was awarded a BSc Hons I in Biochemistry in 1966 and a PhD, also in Biochemistry, in 1969.

John became a lecturer in biochemistry at The University of Sydney in 1969, and then a postdoctoral researcher at the Pennsylvania State University. He returned to UQ in 1971 as a Senior Tutor in the Department of Biochemistry. John was then appointed to a Lecturership in 1973, promoted to Senior Lecturer in 1978, Associate Professor in 1985 and Professor in 1996.

John served as Head of the Department of Biochemistry from 1992 – 2000, and then became Head of the School of Molecular and Microbial Sciences (now The School of Chemistry & Molecular Biosciences).

After four years as Head of School, John served for three years as Deputy Dean and Director of Research for the Faculty of Biological and Chemical Sciences before retiring. John was always an active member of the Australian Society for Biochemistry and Molecular Biology and served as President in 2001-2002. John is the Secretary General of the Federation of Asian and Oceanic Biochemists and Molecular Biologists. In 2005, he was awarded Membership of the Order of Australia for services to biochemistry and academe.

"Teaching well (inspiring learning) is always a challenge but also fun and rewarding, at both undergraduate and postgraduate levels," said John.

Since his undergraduate studies, John's main research interest has been protein structure and function. His current research collaborations include a study of the components of Australian snake venoms with therapeutic potential, and attempts to develop inhibitors of an essential enzyme in the malarial parasite *Plasmodium falciparum*, as antimalarial drugs. Recently, John has been involved in several patents of products from Brown snake venom with potential as antibleeding agents.

"UQ has been my working place and academic home for the vast majority of the time since I became a student in 1962. It has been great to see The University prosper over the years, particularly in my areas of interest and expertise, and to have played some role in its development," said John.

John is a Professor Emeritus and hopes to maintain his involvement with the University, particularly in research, for some years to come.

In a generous gesture, John and his wife Jan have made a benefaction to UQ consisting of:

- a \$1,000 annual prize to the best Biochemistry & Molecular Biology third year student entering Biochemistry Honours; and
- a \$10,000 contribution to the Wotif Young Achievers Program. The focus of this new program is on encouraging Year 10 school students in SE Qld who have been disadvantaged through financial hardship, rural isolation or their Indigenous background, as well as students who may be the first in their family, to consider a university education. The program provides a unique opportunity for extension and enrichment, without compromising a student's ability to focus on Year 11 and 12 studies. Students receive financial assistance and mentoring, with those who proceed to UQ receiving a scholarship. For more information on the program, go to: www.uq.edu.au/wotifachievers

Building refurbishments

Delivering good spaces to do good science



If you're a graduate of the 1970's to 1990's, you'll remember the first year Chemistry lab as looking like the picture above.

In 2003-4 the lab was completely refurbished. The space was split into five teaching modules, each housing both a 'dry' computer-assisted learning area and a 'wet' experimental area. Students start their practical classes sitting at computers in front of a tutor who can project images on to a large screen. They then move to the benches to conduct their experiments, returning to the computers to write up their reports.

A program of refurbishment of research spaces has also been occurring over the last few years. Some of these refurbishments have also won awards for architectural design. Recently, a section of the Molecular Biosciences Building was remodelled to accommodate a Structural Biology & Biomolecular Modelling group. The group's work includes computer simulation of protein folding and assembly, structure-based drug design, and bioinformatics.

We'll be offering tours of some of these and other teaching and research spaces at our Alumni Reunion Day (see page 2).



Student waiting area, Later Year Undergraduate Chemistry Laboratories



First Year Undergraduate Chemistry Laboratories



Later Year Undergraduate Chemistry Laboratories

Friend and neighbour's legacy

Rodger Morgan was a friend and neighbour of Professor Paul Young and took an active interest in Paul's research. Paul has worked on vaccine development and his current interests are in the molecular virology, diagnosis and control of dengue and West Nile viruses as well as respiratory syncytial virus. His group is also studying the engagement currently being enacted in the wild between a novel retrovirus and its host, the koala, and what this can tell us about cancer induction and viral evolution.

In May 2009, Paul received a US\$100,000 grant from the Bill and Melinda Gates Foundation to develop an altruistic vaccine for mosquito transmitted pathogens.

When Mr Morgan passed away, he bequeathed a sum of money for the advancement of Paul's research. Paul chose to establish a travel award for PhD students in the field of virology, funded from the bequest, which was invested by UQ's Advancement Office.

The inaugural Rodger Dallas Morgan Postgraduate Travel Award in Virology was awarded in 2009 to David Muller, who is conducting his PhD research into a structure-function based analysis of the dengue virus protein NS1 under the supervision of Professor Young. The award enabled David to attend the 4th Asian Dengue Research Network Meeting in Singapore in December 2009 where he presented his results on diagnostic markers

win a Vietnamese cohort of Dengue virus infected patients.

The 2010 travel award has been made to Ms Susann Liebscher, a third year PhD candidate also supervised by Professor Young. Susann will travel to the 9th International Symposium on Positive-Strand RNA Viruses, to be held in Atlanta, Georgia, in May, where she will give a presentation regarding West Nile virus.



Professor Paul Young

Advanced Scientific Facilities Available for Public Use

UQ has a comprehensive array of scientific instrument installations in the disciplines of Chemistry and Molecular Biosciences, used by research staff and students and accessible in many cases to the wider University and public communities. Access to outside clients is possible when the machines are not in use by staff and students. Facilities include:

- Instruments for protein identification by N-terminal sequencing, peptide mass fingerprinting (PMF), or internal sequencing:
 - Applied Biosystems Procise cLC automated N-terminal protein sequencer
 - Voyager DE STR MALDI-TOF
 - QSTAR QTOF Pulsar-i
- A high resolution Mass Spectrometry facility that carries out both low-res MS and accurate mass measurement work. Electrospray Ionization is carried out on a Bruker micrOTOFQ and Electron Impact on a Finnigan MAT 900 – XL Trap. Mass accuracies < 5ppm are achieved, generally in the 0-2 ppm range.

- LCMS accurate mass work is also carried out in both positive and negative ionization modes on the Bruker micrOTOFQ with a Dionex UltiMate 3000 micro flow LC system. Additionally, accurate mass MS/MS work is carried out on this system.
- ZEISS LSM 510 META: laser scanning confocal microscope, with multitrack imaging, optical sectioning and 3D image analysis; time series and photo-bleaching capabilities; and spectral analysis and emission fingerprinting.
- GE InCell 1000 High Content Analysis System – available for external users later in 2010, this instrument is a flexible, modular, cellular and subcellular imaging system for fast, automated imaging in fixed and live cells.

These installations are supported by highly experienced professional staff. You can view the list of facilities at www.scmb.uq.edu.au/scientific-facilities. Details of who you can contact to discuss your needs are shown there. Our staff will help you with access to the facilities and prices.



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