New ASBMB President – Denis Crane

This is my first discourse as the new President of ASBMB, and I wanted to introduce myself and briefly outline some plans for my two-year term. For those of you who don't know me well, my early training was in biochemistry through the Biochemistry Department at the University of Queensland in the 1970s. This was also the start of the molecular biology revolution, and as with other scientists of my generation, I was soon compelled to engage with this new science – these days I consider myself a molecular cell biologist, for want of a better description. My major research interests over the period since then have been in understanding the biochemistry and cell biology of the peroxisome and the related peroxisomal disorders.

PhD, Postdoc and Peroxisomes

I started out in this field as a PhD student with Colin Masters, a prominent figure in the Australian Biochemical Society at the time, who had just taken up the new Chair in Biochemistry at Griffith University. Following PhD graduation, I moved to a postdoctoral fellowship in the early 1980s with Helmut Sies in Düsseldorf, Germany, a pioneer in the area of oxidative stress. I returned to Australia where I took up a lectureship at Griffith. In 1992, I had a very productive sabbatical with Steve Gould in Baltimore where I 're-skilled' and took up the challenge of using genetic approaches to address the molecular basis of peroxisome biogenesis and the genetic basis of the peroxisome biogenesis disorders, and refocused my laboratory accordingly.

My collaborative research has led to the identification of a number of genes involved in peroxisome biogenesis (PEX genes), the elucidation of the role of the encoded proteins in the mechanisms of protein import into the peroxisome, and the application of these findings to the determination of patient gene mutations, the latter through very successful collaborations with Barbara Paton and others at the Adelaide Women's and Children's Hospital.

My current research is centred on the use of conditional mouse mutants to investigate the molecular basis of neurodegeneration, and in particular the role of oxidative stress – a return to the interests of my first postdoctoral position! In addition, as an adjunct to my cell biology research, I have also initiated research collaborations aimed at developing novel bioimaging systems. Apart from a couple of periods overseas, the bulk of my career has been at Griffith, most recently as head of the School of Biomolecular and Biomedical Science.

ASBMB Presidential Plans

ASBMB has played an important part in the development of my research career, and I am proud to say that I have been a member since 1977! I also feel fortunate to have been involved more closely with the society in a number of capacities – as Queensland State Representative on Council for the period 1998-2000, as Organising Committee Secretary for the first ComBio meeting at the Gold Coast in 1999, and recently as program chair for ComBio2006 in Brisbane.

In my opinion, the strengths of ASBMB over the years have been three-fold – the annual scientific conference, the communication between the Society and membership (mainly through the Society magazine), and the ASBMB-supported state and local activities. Nevertheless, as a society we are under continual challenge to respond to the changing needs of the scientific discipline and membership that we represent, otherwise there will be a drift to the many other competing societies and conferences in Australia and overseas. Because of this, it is important that there is...
ongoing, effective feedback from members on the Society’s activities, and I therefore encourage all members to pass on their views to their ASBMB representatives at all levels.

One issue that I would like to focus on during my term is how the society can be more active outside of the current showcase activities encompassed by the annual conference and the Australian Biochemist. More specifically, this can be seen as an increased challenge of engagement with members at a local level. I believe such activity is necessary for attracting new, early career scientists to the society, and in continuing to engage more senior scientists and longstanding members. Certainly for students it is the local branch activities that can often shape their career paths. Looking around, it is also clear that there are currently a number of very successful activities in place around the country. One way forward, then, is to learn from the states about successful activities, and where appropriate, roll out similar types of activities elsewhere. Examples of such local activities, many of which are currently being offered through the Society’s special interest groups (SIGs), include mini-symposia, workshops, student seminars etc. These activities should be applauded and recognised for the important contributions they represent. They also provide an excellent platform on which we can build. Of course, such activities do not run by themselves but require input from dedicated society members.

In closing, let me say that I feel very proud and privileged to be taking on the position of President of a society that has such a proud and distinguished record as ASBMB. I am also privileged to be working with a very active and dedicated Executive and Council. Together, we will be doing our best to help position the Society for the challenges and opportunities that lie ahead. I hope you, as an ASBMB member, will continue to share our vision and join in with our activities where you are able.

Early Decisions on the Road to Signal Transduction

There are many decisions to be made in life, and of course the decisions that need to be made on study and careers can be difficult ones. However, I was inspired by my high school science teacher and I was lucky to have a number of opportunities to experience university and biochemistry firsthand in summer vacation courses during my high school years. By the time I needed to think seriously about life after high school, it was clear that biochemistry was for me. That has never changed, and I find myself now still fascinated by all aspects of biochemistry and molecular biology.

I completed my undergraduate BSc and Honours years in the Department of Biochemistry at the University of Queensland. In those years, Burt Zerner, Bob Blakeley, John de Jersey and Susan Hamilton were amongst the staff members who would take us on journeys through the complexities of biochemistry – metabolism and enzyme kinetics. Signal transduction, which now holds my interest, was in its infancy in the late 1980s. Biological membranes fascinated me, but in the end, the world of drug metabolism called and I was drawn in my Honours year into the world of cytochrome P450 with Paul Reilly and Don Winzor. It was a steep learning curve, but I will always remember the good times in the lab and Don's support and meticulous typing skills (computers were still in their infancy).

My PhD work saw me move to Susan Pond's laboratory at the Princess Alexandra Hospital and the Department of Medicine. The work on protein-facilitated drug clearance took me into new areas of mathematical modelling and cell biology, but I continued to be drawn to signalling. So, in the middle of 1989, I took a punt and applied for a position at the National Heart and Lung Institute in London to evaluate signalling mechanisms in the heart. I was delighted to be offered the position with Peter Sugden’s laboratory, even if it meant pushing the accelerator on my PhD project so that I could start in London in early 1990.

The London Years

For a young Queenslander, the opportunities offered by London were staggering. There was the world of museums and galleries to explore in London itself. The whole of Europe was just on the doorstep. My time in the lab began with exploring cAMP-dependent signalling then protein kinase C isoforms in the heart. It seemed like a well-trodden pathway, and certainly I needed to quickly learn more about heart anatomy and the tricks to establishing successful working heart perfusions as well as a new range of biochemical techniques to assess signalling events. But during this time, a new pathway was also looming on the horizon: the mitogen-activated protein kinases and their
upstream regulators were being described. It was an exciting time, as the pathway was pieced together by other researchers working in mammalian systems, yeast and *Drosophila*. It was clear that the combination of biochemistry, genetics, molecular biology and cell biology was powerful indeed. We were able to consider these new pathways in the context of cardiac biology and quickly established the activation of these kinases in the heart. Our work together with Peter Parker and Chris Marshall as well as colleagues in the US allowed us access to new reagents and it was possible to make good progress quickly.

A Return to Australia

By 1996, I was working in the Institute of Cancer Research with Chris Marshall's team and my focus had changed to more fundamental issues in signal transduction. Things were now moving more slowly, but the work was enjoyable and Chris's insights into signalling were truly inspirational. We were moving further and further into the unknown, and it was fascinating to consider all the signalling possibilities that our data could suggest. It was seemingly by accident that one lunchtime I found myself flicking through an issue of *Nature*, when I chanced upon an advertisement for a Lectureship at the University of Western Australia (UWA). I think they say, "the rest is history". After a whirlwind trip to Perth, I was happy to accept the position and return to Australia in mid-1997 to establish my own laboratory.

My time at UWA has been a steep learning curve. Moving from organising just my own research project as a postdoc to coordinating a research team, teaching undergraduate students, and becoming increasingly involved in university administration has been enjoyable and taxing. It has certainly meant that I need to always consider the best ways to use my time. There have been the good (great students in the lab, successful completions of Honours and PhD projects, getting grants funded, publishing papers, travelling to conferences) and the bad (lack of grant funding, late night exam marking, papers being rejected). Along the way, I have been promoted to Senior Lecturer and, in 2006, to Associate Professor. During all this, I have continued my involvement with ASBMB as Western Australian State Representative, as a member of the Editorial Board of the *Australian Biochemist*, and in the bidding and organisation for ComBio2004 in Perth, all of which have helped me increase my contacts with colleagues across Australia. Even throughout my time in London, the newsletters from ASBMB let me keep some feeling for what was happening in the Australian biochemical community.

2007 and Beyond

In 2007, I am taking on the role of ASBMB Secretary, and aim to continue the good work of my predecessor, Rohan Baker. A prime responsibility in this position is to facilitate the objectives of the Society, and thus to help in disseminating information on research and teaching in biochemistry and molecular biology amongst professional scientists and the Australian community. It will be an interesting year too with my move from the University of Western Australia to the University of Melbourne and the new Bio21 building. I am sure there will be many new challenges ahead with the role of Secretary and my new position. But the access to good coffee and some of the gloomier Melbourne days should help me concentrate and work through the initial setting up stages.

Travels in Europe remain part of the good times. In 2003, we attended the FEBS Special Meeting on Signal Transduction in Brussels. From left: Marie, Bahareh Badrian, Renae Barr and Naomi Court.