

The past fifty years has heralded many positive developments for the status of women in society. Liana Friedman and Rebecca Lew interviewed eight senior Australian biochemists and molecular biologists to discover their experiences as women in science. From a range of backgrounds and career paths, the interviewees openly share their anecdotes, opinions and hopes for what ASBMB can do to promote equality of the genders. It is clear that our interviewees have achieved personal and professional success – regardless of whether they feel it was against the odds or as equal players.

What changes for women in science have you observed during the course of your career?

Audrey: There has gradually been an improvement in the attitude to women as scientists. It was certainly not evident in my day in the University of Melbourne, where the subjects I taught were Nutrition and Dietetics, which the male-dominated university staff regarded as some form of cookery. There were quite a lot of women on the University of Melbourne staff, but they were never accorded high positions in Science. So in my time, for instance, there were no woman professors, there were one or two associate professors. I was always regarded as something rather lowly in the hierarchy of the Biochem department. I know that things have improved slightly but not enough. There was most definitely an attitude held by the male members of the university staff council that women were not capable of taking on senior positions. I was one of the first female students to do Agriculture, that was just peculiar in those days.

Daphne: The most obvious change is the increase in girls studying science, and to a lesser extent, the number of women in senior academic positions, still growing at an incredibly slow rate. In a paper I presented to a UNESCO Conference I quoted government figures for 1991. While 24% of all science academics were women, only 4% of tenured staff above the senior lecturer level in all science disciplines were women. But still, since then some progress has been made. Especially in biochemistry and the medical sciences, there are equal numbers of women and men studying in these areas now, which is a big change from the days when one was a trailblazer. Of course this has been followed by a greater participation in ASBMB, but looking through the pictures of ComBio2004, there weren't a lot of women. So I don't think they're coming up in numbers as much as I'd like to see.

Jan: I've seen lots of changes! When I started at CSIRO in the Dark Age in '61, women received 20% less salary and if you got married you had to resign and give up your tenure. By and large, I think women accepted the way things were, change came as other gradual changes happened throughout society. If we get to happier days [laughter], there is greater opportunity for women now to advance to higher levels, although there are still fewer women at these higher levels. Now there

are more opportunities to have a career and a family, although I still think it is quite difficult to manage both of these things. It's very interesting to note that Swedish girls have had the same opportunity for education and positions in whatever field since the latter part of the 19th century, but this has not resulted in more women being scientists or politicians.

Edith: For me, the change has been that there's heaps of women in science now and they're just part of the normal scientific scene. Whereas when I was going through, at school the science class was small, and although I did go to at a women's college in London University, in science there weren't so many women. When I went to work in Agriculture in Sydney, I was the first woman to attend Faculty Meetings and much later on I was told that some of the staff who were there then didn't know what to do about it! It never occurred to me to be worried about what these guys might be thinking. I just grew up in a society which expected you to look after yourself and get a job, most women worked, but mainly in unskilled jobs, and it never occurred to me to be bothered about anything other than getting good marks, getting things finished, getting a job, and getting on with it. When I went to Sydney, I got a huge exposure because I was different, real positive discrimination.



*Audrey Cahn in
the role of
Dietician at St
Vincent's
Hospital, 1937.*

Liz: Employment opportunities for women have gotten better. When I first started, women were paid less. In fact, the early 1970s Science refused to take advertisements for CSIRO because it advertised that women would be paid \$406 a year less. There was discrimination if you were married; I tried to get rental allowance like all the men and they said, "Married women are treated as single men" [laughter]. And worse, before that, married women were dismissed from the public service. In my time there was Women's Lib, Women's Electoral Lobby and Germaine Greer, so we were prepared to fight, so it changed relatively quickly then. Now there is positive recognition that they should have women in positions of leadership or senior roles in laboratories, but if you look at the statistics, there hasn't been all that much improvement. So while I can see that structurally, people have really tried, but it's still been very difficult to overcome the idea that men will appoint people like themselves, even unconsciously. There are many women at postdoctoral and junior levels, but by the time you get to the senior levels, there's still very few. A survey in CSIRO found that women felt that they didn't fit the men's expectations. And women left, not necessarily because they weren't promoted or that they felt that they were particularly being discriminated against, but because they didn't want to end up in that role like men - maybe it's an authoritarian way of running things. In general, women like to have more consensus and shy away from conflicts. So when they see the more authoritarian things that you have to do to be in charge, perhaps that also puts them off. Perhaps they're not prepared to sacrifice their family as much as men are.

Leanna: They've certainly increased. My first undergraduate degree was Agricultural Science which was a fairly male-dominated degree. I think I came in that transition period where women were going for traditional careers, I was going to be a hairdresser originally! I went to a technical high school to do typing and so forth as a backup. But then I really loved science from early high school and ended up going in that direction. I have seen changes and I think they've been

for the better. It would still be nice to have more women in higher positions and management.

Leann: Things haven't changed that much. As an undergraduate student in the late 1970s, around about 20% of the academics were women, mostly clustered around Level A, B and sometimes C, no professors. Generally they were involved in academic teaching, they ran the practical classes, did some of the mentoring and caring roles, but they didn't make it up the ladder. However, one didn't really have the feeling that there were no opportunities for women then: successful female figures included Mary-Jane Gething, Liz Blackburn, Edwina Cornish, Christina Cheers and Nancy Millis, Adrienne Clarke, Suzanne Cory, Jan Anderson and Liz Dennis. I feel there was inspiration then, and I feel as though there's still inspiration now. Numerically, there's a problem, but there are certainly opportunities for women to get though - most departments are aware of the need for gender balance and they would like to do something. What has changed are the sexist attitudes we had to put up with in those days. I remember professorial members of a Department talking at morning tea about how women weren't cut out for science. At the time we laughed about it, it wasn't as if we were devastated by this. Things have definitely gotten better in that regard, people are actually much more polite these days. If there is any discrimination it's much less overt.

Christina: I haven't really observed many changes and I don't think there are specific barriers to women. The barriers are the choices women make, often due to social pressures, rather than impositions that society, institutes or universities place on them. Often family and social pressures stop women from getting that level of independence. I've never felt that women were disadvantaged. Institutions have realised that they have to do something, but there are still isolated examples where there are places that don't recognise the contribution that women make. But most of it's the women themselves: I've got postdocs and PhD students who have decided that family comes first and therefore they won't do both.

Leanna Read

Leanna Read is a founder and the Managing Director of TGR BioSciences Pty Ltd. TGR BioSciences discovers and exploits novel bioactivities from complex, natural products or drug discovery libraries. Leanna obtained her PhD in Biochemistry at Flinders University in 1981. She has extensive R&D and management experience, establishing South Australia's only independent research institute the Child Health Research Institute in 1989 and serving as its director for ten years. She was CEO of the Cooperative Research Centre for Tissue Growth and Repair (1999-2002) and member of the Federal Government's Industry Research and Development Board (1995-2002). Current board appointments include Novogen Ltd and the Australian Proteomic Analysis Facility. Leanna also serves as an independent member on the Prime Minister's Science Engineering and Innovation Council, and the Australian Research Council. She was appointed Fellow of the Australian Academy of Technological Sciences and Engineering in 1999. In 2000, Flinders University awarded her the Convocational Medal and a Professorial Fellowship. In 2001, she was presented with the inaugural Industry Service Award by the Australian Biotechnology Association.



Leanna in 2004.

ASBMB Women's Forum

Liz Dennis

Liz Dennis is Program Leader of genomics and plant development research at CSIRO Plant Industry, Canberra and Adjunct Professor, Australian National University. Her research interest lies in plant development, particularly the initiation of flowering, plant gene regulation and the molecular basis of the plant response to stress. Liz acquired her PhD in 1968 at the University of Sydney. She is a Fellow of the Australian Academy of Technological Sciences and Engineering (1988) and the Australian Academy of Science (1995). She has been awarded a Senior Scholar Fulbright Fellowship (1982), the ABS Pharmacia LKB/Biotechnology Medal (1999), the Avon Spirit of Achievement Award (1997), the ASBMB Lemberg Medal (1998) and the Prime Minister's Science Prize (2000). Liz was Chairman of the Multinational Arabidopsis Genome Project, ASBMB President 1992-94 and Director of the International Society of Plant Molecular Biology 1990-93, and was Editor of *The Plant Journal*.



Above: Liz when she was elected as a Fellow of the Australian Academy of Science in 1995.

Below: Liz inspecting plant cultures at the bench in CSIRO Plant Industry, Canberra, in the late 1990s.



How has your career impacted on your personal life and vice versa?

Daphne: I could go on forever about this – for 13 years I was at home bringing up three children and in those days there was not much opportunity for part-time work, certainly there were no child-minding facilities associated with where you worked and very little elsewhere. Also, in the 50s when men were coming back from the war, there was a lot of brainwashing going on to get women back into the home. I was a victim of this myself - I had a set of tea towels which said I did the washing on Monday and the ironing on Tuesday and so on – I think I must have followed this religiously [laughter]. Nevertheless, I would have liked to have more opportunity to have been in the workforce during the time these children were growing up, and, if I had my time again, and, given the way I myself have changed, largely due to the women's movement during the seventies, I would be more active in seeking out a part-time job. (I appeared before a Senate Committee in 1982 presenting evidence from AFUW research on Permanent Fractional Employment). When I did get back to work after 13 years, there was inevitably a set back in my research career. So what I suffered from, when I returned to work, was loss of seniority (I went back as a demonstrator), loss of practical skills, loss of confidence in that way and in dealing with people. I constantly felt the perception around me was that, as a married woman, I didn't need the money, and therefore my career advancement wasn't a big priority, they were just keeping me amused. But in fact, my research output during the time when I was in those junior positions was at least equal to senior lecturers. I got the same opportunities for research money, conferences and study leave as other members of staff, and I took these things very

avidly, and indeed these were very positive and enjoyable aspects, regardless of my position. So it didn't stop me doing research but it stopped me being appointed to important committees and being on a career ladder, so there was nowhere to go. That was frustrating. I think I made up for it in a way by putting quite a lot of energy outside the university into the Australian Federation of University Women, where I have held positions nationally and in the International Federation. I was on the IFUW Committee for the Status of Women and I took periods of leave without pay for meetings in Geneva. So I made a second career in that area.

Leann: It's all been positive rather than negative. I feel as though I've had a terrific life – personal and professional, in that as a scientist one gets to travel: I'm a country girl, so even coming down to Melbourne University and then going to Sydney University was already pretty exciting. My first postdoc was in the Netherlands and my second in Paris. I have made research visits to London, Bologne, Grenoble, Marburg, Basel, Delhi, Lucknow, Bangkok, Port Moresby, Madang and St Louis. It's relatively easy for me to do all those things because I don't have any children, it's harder for women who do have children, but I've seen male colleagues who have children who manage to travel around and have an exciting time, and so I think it certainly is possible. If anybody wants to have a career in science and wants to use that as an opportunity to go to lots of exciting places and meet lots of exciting people, then it's the perfect profession. I have also had the advantage of having a very supportive partner who has always enjoyed my successes and been there when things are not going so well.

ASBMB Women's Forum

Christina: I see them as one and the same, I don't separate them. And I always just do what I enjoy or what I get excited by. So if there's a period where I have to work really hard in my career, I'll just do it. I'm not someone who has worked every night of the week and every weekend. So I don't think that's compromised my social life at all. A lot of guys work all the time, but I don't. I think you can do both. It's really important to have an active social life and to be able to go home and have nothing to do with work.

Liz: It's certainly impacted on my family in the fact that I work very hard. We've had to come to a different arrangement, where the family accepts that I come back at nights and work, but if I'd been at home and not doing anything, maybe that would have impacted on us! It certainly has affected my lifestyle. So I've probably been a bit more laissez faire with the kids than I might have. I guess in the end I had kids because I didn't want to miss out, it was not very well-thought out [laughter]. I didn't take much time off when I had them, it was over Christmas – good timing. And I went a bit easier at that time. But my social life was much less at that time. You adapt to what you have to do. I want my boys to have a scientific outlook because I think that's rational and I want them to end up like me in that they do something they enjoy doing. But I don't try to push them into biology or biochemistry.

Jan: I think my personal life largely involved my commitment and passion for my research, so I didn't ever see them in separate boxes. I didn't have vast clashes, perhaps because I didn't have any children. But I was very lucky: I inherited a family of four children, and now have seven grandchildren, so that's lovely. As a student, being one of a handful of women was delightful; we had a marvellous time. But I found it very hard working in CSIRO because it had very few

female researchers when I started. My male colleagues accepted me as a researcher, but somehow you were put into a box of not being quite right as a woman, which was rather uncomfortable.

Edith: I don't normally fill in questionnaires, but I did have one many years ago that said, "Has your professional career affected your femininity?" and I put No, and I've always regretted that I didn't put down, "Working with all these lovely men has done wonders for me," which would really screw up their database. [laughter]

Leanna: I find it very hard to try to do everything. I don't have children for example, but this was as I was interested in other things, not actually because my career has made me not have them. I think it would be difficult to do my job with children, and I admire the people who do effectively combine the two. The problem with a science job in general is that you have to react quickly, do things quickly, deadlines come up and you've just got to drop things and do them. And also, for most scientists, science is a life, not a job. You can't leave it behind. It never goes away – you go on holidays, it's still there, you usually find yourself doing some good thinking, it's too exciting. Therefore by design or desire, it tends to take a dominant effect but most scientists enjoy that.

Audrey: It was very difficult and time-consuming, the three subjects that I lectured in practically took up all the week's work during term time. And of course, you had a lot to do between terms. So that it was difficult, I could not have done it without help from my family, my parents; it was difficult to combine the two. It meant that I had two lives; bringing up daughters and as a member of the academic staff. There were no allowances made. I had to do what had to be done in the Department.

Leann Tilley, "I feel there was inspiration then, and I feel as though there's still inspiration now."

Left: Adrienne Clarke when she was elected as a Fellow of the Australian Academy of Science in 1991. In 2004, Adrienne was awarded the most prestigious Companion of the Order of Australia, for service to science and academia as a leading international researcher, for the application of economic benefit to scientific discovery, and for mentoring future leaders.



Above: Internationally renowned speaker Elizabeth Blackburn addressing ComBio2003. Elizabeth obtained her undergraduate education at the University of Melbourne, and is now a Professor at the University of California, San Francisco.

ASBMB Women's Forum

Leann Tilley

Leann Tilley is Professor in Biochemistry, La Trobe University. She attained a BSc Honours degree from the University of Melbourne in 1980 and her PhD from University of Sydney in 1984. After postdoctoral fellowships, at the University of Utrecht, The Netherlands and the College de France, Paris, Leann returned to Melbourne. In 1998 she was bestowed the Australian Academy of Science Traveling Fellow Award. Leann's laboratory undertakes research in malaria, using molecular approaches to study the malaria parasite and its interactions with its host. She has set up a facility for fluorescence photobleaching and pioneered the use of this technique for measuring protein dynamics in live cells. Leann helped develop and continues to co-ordinate a new Bioinformatics degree and is Postgraduate Co-ordinator for the Department of Biochemistry. From 2002-2005 she was Convener of the Program Committee for the Annual Lorne Conference on Protein Structure and Function and is Vice President of the Lorne Committee.



Leann in 2004.



Below: Leann enjoying her travels as postdoc at College de France, Paris in 1986. The bike trip (right) was taken in the Loire Valley in France on a weekend away from the lab. Whilst working in Paris, Leann also made a research trip to Italy – she is pictured by the sea in Genova, Italy.



Do you feel that being a woman is an inherent advantage or disadvantage for a career in science?

Jan: I would say neither. Your research or teaching, or whatever you do in your career depends upon yourself. There were splendid opportunities for sabbaticals and overseas conferences. That said, in the early days, it was probably harder for women to advance at the same pace as male colleagues. But I don't think there was any disadvantage or advantage of being a woman in my career.

Leann: The categories are not necessarily male/female, rather alpha personality and beta personality. When you think of the disadvantages that women have, it's often because they're not alpha-male personalities. So they're not pushing themselves forward, they're not super-confident and not sufficiently aggressive. However I have male colleagues who aren't particularly good at these things either. And there are advantages of being less aggressive – an alpha-male personality tends to be very domineering and to have real crises when they don't get what they want. Whereas women are probably more even; having lower expectations, they have fewer disappointments. The main thing that women have to overcome is self-discrimination. It's not that they're being overtly discriminated against, it's that a lot of women are choosing not to go for promotions, not to go for grants, not to go for opportunities to present themselves because they feel as though, "they have other commitments," "it's too difficult" or "I'm not going to succeed." We've got to encourage women to put themselves forward when opportunities for

promotion or presentations at conferences arise. They've got to say, "I would love to do that," and not say, "I don't know if I'm ready for it."

Men probably do feel more comfortable with each other rather than with women. But in some ways women are better at networking at a scientific level, going out and asking for help when they need it, being prepared to try new techniques. And certainly women have better skills in terms of written communication, they write better grants and explain themselves more carefully [laughter].

Christina: I don't think it makes any difference. People look at what you've done, achieved and published, and it's got absolutely nothing to do with whether you're a man or a woman. The thing I've noticed is that very successful high-achieving men are happy to have partners who are not successful and high-achieving and who may not have their intellect or ability, they basically stay at home and nurture the man. But for women, it's much more difficult, I don't know of a very successful woman who's got a stay-at-home partner. But you see very successful women who've very often got equally successful partners. So a woman just has to work that little bit harder. It's got something to do with imprinting of what are acceptable social interactions. They might have a team of cleaners and ironers and gardeners, but the woman would have organised them, not the man!

Daphne: At my time it was certainly a disadvantage, it might be different now. Working in teams might protect women from getting left behind and it might be a more understanding environment. In terms of advantage, women are able to deal with a lot of variables, they can pull together a lot of areas of experience to bring to bear on a decision. Another skill I think women have is a lot of acuity in observation, one has to be observant when you are multiple-tasking and something's happening over here with a child out of the corner of your eye, you have to know what's going on all around you. There have certainly been occasions where I have surprised myself by observing something that wasn't in my direct line of research. Whereas I think men are more channelled, they focus more, and they go straight forward. I think women are better team workers but there are always exceptions to this.

Liz: I think it's both, actually. It might be a disadvantage in that you don't have the societal support – a husband staying at home and look after the kids and not being in the mould of the Old Boys. But there is an advantage in that women can bring in different insights into problems and they work well in groups and teams – I don't want to suggest that women are different from men in a particular way. Now with science being bigger and more complex, multidisciplinary, perhaps women don't have as big egos as men, so they make good collaborators, and they can work together. People also feel obliged to put women on this, that and the other thing, so sometimes it is an advantage! [laughter]

Edith: I don't think it really makes a lot of difference. I did come from a background where women worked and coped and managed, but I think there's more support now than there used to be. There have been high-profile women in science for a long time: I remember as a student in the '50s hearing Professor Dame Kathleen Lonsdale give a lecture. She was an early crystallographer who worked in the '20s and '30s in England at University College in London, she was a little tiny wizened lady by that time, with owlsh

glasses and frizzy hair. She was a quite high-profile lady, crystallographer who was one of the first women to become an FRS in 1945. It was said that in her younger days she took a set of photographs with the dots on them, and had a baby, nursed the baby for 18 months, and worked out the structure, probably with a slide-rule. Some of those early women just got on with it in all areas of life. So I think if you want to do it, you can do it. Look, it's hard work, but it's hard work for men too. I never felt I was discriminated against, because I didn't think about these things.

Leanna: Everyone's going to have a different experience. I think it's a good career for women, they are welcomed and there are opportunities for senior positions. I haven't seen any really significant prejudice and I don't believe that I've ever experienced a glass ceiling. But there are ceilings there for people who want certain aspects of life. For example, it's hard to say that you'll give up science for more than a few years and expect to then be top of the field. A man would be the same – time out is not forgiving in this field because you get behind in science, it moves quickly. I don't believe that if you want to do it, the barriers are there, I certainly haven't experienced it. In fact, I'd say quite the contrary. There is a strong push for more women on board and in senior positions, so opportunities are likely to arise more often than for men. I am sure there has been an element of that in some of the positions that I have been asked to take. But that can be a two-edged sword because if you are a competent woman you are approached a lot for that reason: that's good because it gives you opportunities and I think I've been very lucky in that regard. On the other hand, you can be distracted (if you don't know how to say no), and end up a jack of all trades. In regard to industry, specifically, there is not an impediment, in my view, to becoming a CEO of a company as a female. And it's nice to see a growing number – we need more of it!

Daphne Elliott

Daphne graduated BSc (Hons I) and MSc from the University of Sydney. She left Australia in 1948 with an I85I Exhibition Scholarship and completed a PhD in plant biochemistry at Cambridge working with Robert Hill. She has also worked in laboratories in Oxford, Los Angeles and Gif-sur-Yvette. Research highlights have been the discoveries of the reaction between arginine and fumarate producing arginosuccinate (with W.H. Elliott), and of cyanide insensitive respiration in mitochondria (with W.O. James), and inter-relations between stress and cytokinin action. Daphne is co-author of two books (Oxford University Press), *Data for Biochemical Research*, 1959 (3rd Ed. 1986), and *Biochemistry and Molecular Biology*, 1997 (3rd Ed. 2004). She is now Visiting Scholar in the School of Biological Sciences, Flinders University, having retired as Senior Lecturer in 1991. Honours include a Chancellor's Medal from Flinders University in recognition of her contribution to the education of women (1994) and in 2002 she was awarded the AM for service to the promotion of women's education in science, and as an advocate for improving the status and human rights of women.



Daphne in 2004.

ASBMB Women's Forum

Jan Anderson

Jan Anderson is Adjunct Professor at the Research School of Biological Sciences, Australian National University and Honorary Research Fellow, CSIRO Plant Industry, Canberra. She grew up in New Zealand, obtaining her BSc and MSc, and then travelled to the University of California, Berkeley to acquire her PhD in 1959. Jan investigates the molecular mechanisms of light regulation in higher plants, the molecular organization of thylakoid membranes, molecular mechanisms involved in the regulation of dynamic function of photosystem II *in vivo* and chlorophyll-proteins of plants and algae. Jan has taken nine sabbatical research trips to institutes and universities in Sweden, the US and England, and has hosted 51 international visitors to her laboratory. She is a Fellow of the Australian Academy of Science (1987) and a Fellow of the Royal Society (1996). She has been awarded the ASBMB Lemberg Medal (1983), the ASPP Robertson Medal (1998), the Australian Centenary Medal (2003) and ISI Australian Citation Laureate for Plant and Animal Scientists (2004). Jan has been a member of numerous national committees and editorial boards of various plant journals.



Jan in 2004.

LADIES PROGRAMME

AUSTRALIAN BIOCHEMICAL SOCIETY MEETING, 1966

The wives of the Queensland members of the Australian Biochemical Society wish to extend a cordial welcome to all visiting wives. To ensure that visitors have an early opportunity of meeting their interstate counterparts and seeing some of the features of Brisbane, the following programme has been planned. (Please note that it has been necessary to alter the original arrangements for Thursday morning, notified in the third circular).

Monday, 23rd May

A member of the Ladies Committee will be present during Registration in the morning and will provide information on the Ladies Programme, local places of interest, day tours, etc.

On Monday evening, visiting wives are invited to attend the Society function in the Biochemistry Department (wine, cheese, films).

Tuesday, 24th May

In the morning, a display of Queensland Art will be held in Finney's new second floor Auditorium, Queen Street, Brisbane. A number of the local wives (identifiable by Australian Biochemical Society name tags) will be present at 10.15a.m. and after viewing the display will escort the visitors to morning tea in the adjacent restaurant (\$0.85).

A buffet supper (\$1.20) will be available at the Union before the evening lecture. As an alternative to Professor Cori's lecture, an illustrated talk on Japanese Culture has been arranged for the ladies in the evening. This will be held at 8p.m. in the Story Room which is immediately inside the main door of the Union Building.

Thursday, 26th May

For the morning, a visit to the Audrey Blackman Collection in the Kennigo Street Gallery is planned (see attached sheet). It is anticipated that Mr. Blackman will be present at this time. Then, this will be followed by a tour of the Botanical Gardens, and a luncheon at the Bellevue Hotel (\$1.50). Private transport will be arranged for the morning; intending participants are requested to contact Mrs. Masters (phone 78.2737) early in the week, and assemble in the foyer of Biochemistry Department at 10.00a.m. on Thursday morning.

The Facts – ASBMB Women's Statistics

Career Progression

☞ Of a total of 160 ASBMB members who are full professors, about 10% are women.

Society Honours

☞ Of the 89 recipients of ASBMB's Medals and Awards, 7 have been women:

Lemberg Medal

1983 Jan Anderson

1995 Suzanne Cory

1998 Liz Dennis

Roche Medal

1984 Marilyn Sleight

1993 Frances Shannon

2005 Jenny Martin

GE Healthcare Bio-Sciences Award

1988 Liz Dennis

The Applied Biosystems Edman Award, which began in 2003, has yet to be awarded to a woman.

☞ Of the 71 recipients of ASBMB's Fellowships, 39 have been women. This approximately equal representation of the genders has been consistent since the Fellowships were initiated in 1992.

Del Doherty, an unidentified delegate and Edwin Webb at the 1966 ABS Conference, University of Queensland. Del was the State Representative for Queensland 1973-1974, the second female to hold such a position.



Society Leadership

☞ Liz Dennis and Edith Lees became the first and only female Executive members as President and Secretary, respectively, in 1992. Liz served till 1994 and Edith served till 1996.

☞ At the Council level, 16 of the 133 members have been women:

Name	State Represented	Year
Beth Neville	South Australia	1958-1959
Beth Neville	Tasmania	1971-1972, 1976-1978, 1983-1984
Del Doherty	Queensland	1973-1974
Patricia Weaver	Western Australia	1974
Patricia Stevenson	Western Australia	1975-1977
Rosemary Sutton	New South Wales	1980-1982
Dianne Watters	Queensland	1992-1995
Jill Gready	Australian Capital Territory	1995-1998
Marie Bogoyevitch	Western Australia	2000-2002
Jenny Martin	Queensland	2001-2003
Susan Howitt	Australian Capital Territory	2002-2004
Samantha Richardson	Victoria	2002-2004
Adele Holloway	Tasmania	2003-current
Jacqui Matthews	New South Wales	2004-current
Gene Wijffels	Queensland	first half 2004
Ylva Strandberg	Queensland	second half 2004-current
Noelene Quinsey	Victoria	2005-current

ASBMB Women's Forum

Audrey Cahn

Audrey Cahn was born in 1905 in the Cloisters, University of Melbourne. She graduated from an Agriculture degree at University of Melbourne in 1928 and then took a position as a Microbiologist and Food Analyst with Kraft in South Melbourne. In 1930 Audrey married and had twin daughters. Audrey completed a Hospital Certificate of Dietetics at St Vincent's Hospital and rose to the post of Chief Dietician at the hospital. She then took a position at Kraft/Walker and Cheese Factory in Drouin as a microbiologist. Employment as the first Chief Dietician for the Victorian Mental Hygiene Department followed, before spending a year at the Royal Perth Hospital. During World War II, Audrey enlisted in the Australian Army Medical Women's Service and became Chief Dietician at the Heidelberg Military Hospital, obtaining the rank of Major. Audrey attained a position as Lecturer (1947) and then Senior Lecturer (1959) in Nutrition and Applied Dietetics at the University of Melbourne. She ran the BSc (Nutrition) degree for 20 years before retiring in 1968. Now approaching 100 years old, Audrey lives in Murrumbateman.



Above: Audrey looking good for 98 in 2003. She is pictured with her granddaughter, Merran, a Nutrition and Health writer, and great grandson Ethan.

Below: Audrey as Senior Lecturer in Nutrition and Dietetics, University of Melbourne, late 1960s.



What can be done to further facilitate women's careers in biochemistry and molecular biology today? And what role could ASBMB play?

Daphne: Childcare is always of primary importance and I don't know how much ASBMB organisational effort goes into seeing that women or men who have to come to a meeting with young children are able to find places for them in a strange city. It's a big ask, but I think it is a good thing to aim for.

Because people work in teams so much more these days, it also means that it takes a long while for anybody to get noticed. So I think more awareness ought to be aroused amongst leaders of teams that women members do need special nurturing, mentoring. I don't think a mentor needs to be a woman, I don't think it needs to be set up formally, although I believe that such a system has worked very well at Flinders and people who are mentored there publish more papers and advance more quickly. Just suggesting that you apply for a job you might not think yourself fit for (and then be surprised) and encouraging you to put in a paper where you might think it might not be accepted (but you find it is), that's right on the nail.

Liz: When I was a graduate student, I found ABS to be very good, it gave me a new view to understand that there was a scientific world outside the Biochemistry Department at Sydney University. I always have a lot of women in the lab, so I think it's clear that women often find it easier to work with other women, maybe they don't feel so threatened. ASBMB should ensure that they have women office bearers, women lecturers at the annual

meetings, that there's no discrimination against women for awards (I don't think there is) and really try to actively encourage women.

Christina: I think it's really important – women don't see that there's a potential career in biochemistry, at least as an undergraduate. There's no clear delineation of what the options are and how they can get jobs. Biochemistry's not a particularly popular option because it's seen as being hard. We struggle to get the undergraduate students, despite having a big research department.

Women in medicine are much more confident, they will decide what they want to do, whereas the women in science appear to opt out because there's no clear career path. It's much easier in medicine to work part time and make a very good living, because of the shortage of doctors, so you're in a very privileged position. If you've got both medicine and research you've got a lot of choices, the disadvantage is if you do medicine, training in a specialty, and then you start research, you're starting at a very old age. But you've got an advantage because you're used to working in the wards which is very high paced. So often you've learned how to write and you're very efficient. You've made a decision you want to do this, there's a maturity thing, there's a lot of drive, because by the time you're thirty the stipend doesn't seem like a lot of money, and it's a sacrifice to undertake it so you approach it differently.

ASBMB Women's Forum

Jan: I think the opportunities for all young scientists need to be made hugely better, because it's such an uncertain career following a PhD, what do you do? At Federal elections, there is rarely any mention of all these billions given out that there's anything to science. You hear people making remarks about "we need to be the clever country", but very little is done. Particularly in the universities, it's very difficult for younger scientists. More money needs to be given to the ARC postdocs.

ASBMB could play two roles – firstly by supporting women by running a luncheon for women graduates with speakers, I've seen it in Sweden and the USA. It is a really good way because students can maybe find other women that they relate to, and often they gain in confidence. Secondly, by having graduates organise their own symposium slot where they get to choose their own speakers and they choose what they want to do – have talks about their posters, invite ARC people or people who can tell them about future careers, and so on. I think it's very successful if the students organise part of a meeting themselves.

Edith: In terms of ASBMB, I would say that it's been incredibly valuable to me through getting to know people in other universities, getting to know in science what was going on. I was asked to be the Treasurer and I've never felt that there were any other reasons other than, "She'd be able to do the job". And I feel that it has been very valuable for my career. What I think needs to be done in terms of facilitating careers in biochemistry applies to both men and women. It's incomprehensible the amount of money that the business community earns and the extravagance with which their extra work activities get funded. And if the government says we need to be scientific and we need science for the environment and the community, it should be easier for everybody, and the good people should be remunerated and supported properly. I don't think there's a specific way for facilitating for women – in fact, the way things are going in NSW schools these days, what they're really starting to worry about is underachieving boys.



*Mrs Violet Webb
behind the information
desk talking to
J. Gordon Lennox
at the 1966 ABS
Conference, University
of Queensland.*

Leanna: Society in general needs to come to terms a bit more with flexibility of working and that's not just in our industry, it's across the board. Taking several years off is tough, so the more we can do in programs to help them come back, the better. It's probably actually easier in companies. I think the career structures in science are challenging for anyone, and certainly in research organisations and academia, we need to rethink how we can restructure that. ASBMB could raise awareness of this issue and encourage change. It could also help by profiling successful women as role models for young women scientists.

Audrey: Women should try hard to seek high positions. We have some very illustrious women in science, such as Adrienne Clarke, outstanding people who have reached the status that they should have. There should be more of them. Many times I thought of giving up my position, but I stayed on because I was interested in the promotion of nutrition. In the Department, the emphasis was on research and teaching was regarded as not a really very good aspect of the science.

Edith Lees

Edith Lees was born in England in 1938 in industrial south-east Lancashire and then studied Chemistry at Royal Holloway College, London University. After 18 years presuming she was a normal person it was disconcerting to find that most people couldn't understand what she was talking about! Meeting the challenge of the divisions in British society may have helped her to adjust to life elsewhere. With a PhD in Organic Chemistry she came to Australia in 1963 to work with Professor R.K. Morton in Adelaide. After his death and several years in Bill Elliott's Department, she moved to Agricultural Chemistry in the University of Sydney where she taught Agricultural Chemistry. There she sought to convince Agricultural Science students that chemistry and biochemistry really do matter in agricultural production, supervised graduate students, and undertook substantial administrative duties, including being the first woman directly elected by the academic staff as a Fellow of Senate. She was Treasurer of ASBMB for a 5-year period in the 1990s and the Society's representative on the JAOBMB Council for several years. She doesn't plan to return to the UK now that she has retired. If she didn't like it here she would have left long ago.



Edith in 2004.

ASBMB Women's Forum

Christina Mitchell

Christina Mitchell trained as a physician scientist specialising in clinical hematology. She received her medical training from the University of Melbourne and consultant training in Hematology at the Alfred Hospital Melbourne. Her advanced clinical training in Hematology included a PhD characterising the natural anticoagulants protein C and protein S. Her postdoctoral studies were undertaken in the field of intracellular signalling in Professor Phil Majerus's laboratory at Washington University Medical School, St Louis USA. In 1991 she returned to Australia and became an independent investigator at the Department of Medicine, Box Hill Hospital. In 1999 she was appointed Professor and Head of the Department of Biochemistry and Molecular Biology, Monash University, a position she currently holds. The research group led by Christina is currently pursuing the identification and characterisation of novel proteins that regulate cell growth and differentiation.



Christina in 2004.

Leann: ASBMB could do more to find ways to increase the number of women who receive the Society's awards and medals. I don't blame the award committees; they are making their decisions based on what's being put forward to them. Women are not being put forward often enough. Most women are shocked to hear that our male colleagues look for senior Society members to nominate them for ASBMB awards. Meanwhile the women are slaving away at the bench hoping they'll be noticed [laughter]. They're not pushing for themselves to be nominated and there aren't people out there who are nominating them.

I have been involved with Phillip Nagley and Samantha Richardson in suggesting that the Society could do more to promote women, and I've been very favourably impressed in that the Society has taken that on board in instituting a Career Development Forum at ComBio2005. We can use this forum to encourage women to apply for ASBMB Honours. We need mentors and role models to provide that encouragement and to show that it can be done. What the Society can also do when developing programs for ComBio, is to ensure that the set of speakers to some extent reflects the age structure and gender balance of the audience: it's not easy to achieve that balance, but it's something that organisers have to be aware of.



Above, from left to right: Philanthropist Sir John Proud, Dr Susan Howitt, Dr Dianne Webb and Sir Bob Robertson in the 1990s.

Edith Lees, "The change has been that there's heaps of women in science now and they're just part of the normal scientific scene."

Right: Jacqui Matthews working on a FPLC in the Department of Biochemistry, UNSW, 1990.

