Irene Leigh

Irene Leigh was born and educated in Liverpool. She obtained her undergraduate medical training and intercalated BSc (Hons) in Anatomy at the London Hospital Medical College and specialised in dermatology at postgraduate level. She spent two years as a lecturer in medicine at the University of Dar es Salaam, Tanzania, before returning to registrar and senior registrar positions in London. In 1983, she was appointed as Consultant Dermatologist to the London Hospital. She was attached as a research fellow to the ICRF (now the Cancer Research UK London Research Institute) and established a research laboratory at the London Hospital in 1983. She became Professor of Dermatology in 1992, having completed an MD degree. Her laboratory, the Cancer Research UK Skin Tumour Laboratory, is part of the Centre for Cutaneous Research (Barts and the London, Queen Mary's School of Medicine and Dentistry), which she leads. In 1999 she became Professor of Cellular and Molecular Medicine and obtained a DSc. She is currently Joint Research Director of Barts and the London School of Medicine and Dentistry/NHS Trust.

Irene's research area is keratinocyte biology. She initially focused on the role of keratins in non-melanoma skin cancer and epidermal hyperproliferation. Subsequently, she contributed to the discovery that keratin mutations underlie multiple hereditary skin diseases and helped to elucidate the phenotypic consequences of specific mutations. She has gone on to find further disease-causing mutations in connexins and desmosomal components. Irene's studies of epidermal differentiation led to her interest in non-melanoma skin cancer, particularly the role of cutaneous oncogenic human papilloma viruses and the interactions between viral oncoproteins and keratinocytes. She is currently investigating the effects of ex vivo gene therapy for type VII collagen deficiency on the development of non-melanoma skin cancer.

In the interview that follows, Fiona Watt, Editor-in-Chief of JCS, asks Irene about her experiences as a woman in science.

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

IML: Since I qualified as a medical practitioner over 30 years ago, there have been huge changes in the pattern of medical careers and in the numbers of women in medicine, which have immensely improved medicine as a career for both men and women. When I was a woman medical student (one of only eight in my year), there was a 10% quota of places for women. This was before equal opportunities legislation; now more than 50% of medical students are women. When I did an intercalated BSc in Anatomy, I was the only woman in my group. This early introduction to scientific techniques and current advances (about something called messenger RNA…) was important in laying the foundations of an interest in medical research, as shown by the fact that many of the men in my BSc year are now medical professors (albeit ageing and wearing out!).

Over the years, attitudes to women in medicine have changed, or at least become less overt. It is now laughable to think that my husband had to ask the dean of the medical school for permission to marry me, and that I was forbidden to go abroad for an elective training period as I needed to look after my husband (whom I never saw, since he was also working long hours as a junior doctor!).

It was unusual for a medical student to be married, which meant that I met discrimination at many points. A galvanising experience was an interview for a medical rotation post, at which all six members of the committee refused to ask me questions about medicine, as 'married women could not expect to have a hospital career'. Instead they asked me how my husband was doing. "I'll show them", I thought, undeterred by the fact that I was pregnant at the time. Of course, I could not disclose my pregnancy, even though when I was assisting at five-hour rectal reconstruction operations it was the retractor holding me up, rather than the other way round.

Thereafter, of course, all interviews included questions on my ability to care for my family (a responsibility I shared with my husband, who was never asked the same question during his stellar medical career). This sort of questioning is now out of bounds, I am pleased to say. I was greatly amused recently to be on an interview panel that asked prospective male appointees about their childcare arrangements; a woman candidate had been asked that unacceptable question and the chairwoman insisted on equality. Their puzzled responses that it was their wife's job showed some things haven't changed.

Irene with her two children and a friend on holiday in France 1978.

When my first child was born I was a junior doctor in a post that required me to be resident in the hospital. There was no maternity leave entitlement and so I worked until I went into labour and returned after my 4 weeks annual leave, new baby under one arm, nanny and equipment taking over the spare bathroom in the residency. I also did my MRCP (the postgraduate qualification in general medicine that is a prerequisite for specialist training in the UK) exams in that year, and I can honestly say that I was in a complete daze. I am really glad that proper maternity and paternity leave is available for my doctor daughter and her husband, who is also a doctor.

When I was in training, hospital careers were very extended, heavy service jobs.

Recent changes in training introduced in Britain have improved junior doctors' lives immensely. It took me 11 years to qualify as a specialist dermatologist, and junior doctors could work up to 108 hours a week with on-call responsibilities. Now, the number of hours that young doctors work and the length of training have been reduced. I had to work full-time to become a consultant, but now flexible training is possible, and the option to work part-time can help women doctors at critical ages and stages in their careers.

I did not become seriously interested in research until late in my medical training (perhaps because of the above), but was greatly helped on my way by the mentorship of a woman scientist, Joyce Taylor Papadimitriou (see previous Women in Cell Science article: *J. Cell Sci.* (2004) **117**, 371-372), at ICRF. I asked her whether psoriatic keratinocytes responded differently to epidermal growth factor than normal keratinocytes and she encouraged me to come into her lab to learn the (then) new technology of keratinocyte culture. She also supported me when I was appointed as a consultant dermatologist at the London Hospital.

A consultant specialist is the highest clinical grade in the British National Health Service (NHS), and reflects autonomy and decision-making responsibility. Only 15% of consultants were women in 1983, but this percentage is slowly creeping up. As my NHS consultant job involved six clinics, three ward rounds and much student teaching per week, my desire to establish a lab was met with almost total disbelief. I was, however, allocated two empty broom cupboards and these became my first laboratory. ICRF gave me some second-hand equipment and a wonderful technician, Trisha Purkis.

The first five years of running a lab were really tough. Changing cell culture medium after a heavy clinic was exhausting, but dogged determination (or bloody-mindedness) carried me through until I began to get grants. The lab grew, I moved to an academic contract, and now, 20 years later, I have a terrific research group at the Centre for Cutaneous Research, with more than 65 researchers. I oversee research programmes on non-melanoma skin cancer, HPV, hair biology, genetic disease, tissue engineering, stem cells, epithelial differentiation and urogenital cancer, each led by a team leader/faculty member and still centred around keratinocyte biology.

I would like to make a plea for unorthodoxy. The classical academic medical career now involves early selection of the brightest for training in research (the golden track). Therefore, late starters like myself have difficulty in getting into research. In addition, I think it crucial to have plenty of project grants to help young medical researchers in their first five independent years, as even the golden trackers get discouraged at this stage. I am heartened by recent changes to grant funding by the British Medical Research Council that will help to address this problem. Academic careers in dermatology are suffering from the same shortage of candidates as other branches of academic medicine, partly because of rapid progression into vacant consultant positions. Let me remind ambitious young doctors that they will have over 35 years as a consultant; delaying a consultant position by three years in order to obtain a PhD is not a real hardship, and truly it is great to be able to mix clinical and basic science.

FMW: *How has your research career impacted on your personal life and vice versa?*

IML: Being facetious, I would say that experience with a household of unruly teenagers is a great preparation for running a lab: sibling rivalry and professional rivalry have a lot in common. The immense organisational skills required to run a working household can only be an asset. My politicisation, which includes being a founder member of an organisation called 'Women in medicine', has led me to run the lab in a collegial and democratic way. A lab management group of team leaders runs the Centre for Cutaneous Research. This flat management structure doesn't always sit well within medical hierarchies, and medics particularly find it very difficult. However, the centre works well. The medical PhD students still cannot bring themselves to call me by my first name, however, even though the scientist PhDs universally do.

Being a pioneer woman has had a significant personal cost. Certainly my marriage to a fellow medical professor did not survive the 30-year mark. Perhaps it is the overpowering need of successful women of my generation to forge ahead that has caused the epidemic of midlife crises in their spouses. These men have had to cope with a rapidly changing set of values, from home-based mothers to working wives. Many have now embarked on second marriages, often with members of their team such as their secretaries, nurses or junior doctors. Hopefully younger generations will not find such personal conflicts, because there is genuinely greater gender equality.

I have been very lucky to find a wholly supportive second husband, who is neither medically qualified nor a research scientist. At least he knows the grown-up me, however absent-minded I have become. The juggling of my personal and professional life still goes on, since I now have four children, three stepchildren, and an adored grandson. I hope it helps me understand the younger people in my lab. I am pleased to say my children are proud of me and don't blame me for a deprived infancy, although I do wish that I had had more time with them when they were small.

My personal history does mean that I cannot complain about the large number of women in my lab who go off on maternity leave. I am pleased that young women in medicine do not believe themselves disadvantaged by their gender and that, Presidents of Royal Colleges apart, they see themselves as full players on the medical stage. I look forward to all the improvements in medicine and science that they will produce.

FMW: *Do you feel that being a woman is an inherent advantage/disadvantage for a career is science? Why?*

IML: Women are well equipped for successful careers in clinical science. They have excellent communication and organisational skills and are perhaps better than men at team working, a key NHS activity. In the upper echelons of medicine there is still a tendency to assume that medical women want to work part-time and to shirk the full responsibilities of work. Children have fathers as well as mothers, so this should

apply to both parents, although we know that women still take most responsibility for childcare. European working time directives might make this easier; at present, part-time work in the NHS/Universities is full-time work at part-time pay. Many women would be happy to work a so-called 'part-time' week of 40 hours, rather than the traditional 50-80 hour full-time working week beloved of our male colleagues. Senior women need to learn not to overwork as well!

There is still a serious scarcity of women in senior medical and scientific positions (female medical deans, for example). There is still a tendency for senior appointments to be invited members of the club, rather than truly open to all. The glass ceiling has moved up a long way but it is still there, so watch out for bangs on the head.

FMW: *What are your remaining career ambitions?*

IML: Over the last 8 years I have had, in addition to my other commitments, the role of Research Dean for Barts and the London School of Medicine and Dentistry. I am now joint research director for the hospital and medical school. I have enjoyed playing a role in shaping and developing the research of this institution, formed by the recent merger of two medical schools. I have also learnt new languages of NHS and university management speak. I look forward to further new challenges in research management and planning. In the meantime I still enjoy the ability to translate clinical observation into laboratory research and vice versa, particularly in skin cancer and genetic skin disease. Perhaps I will finally answer that question about psoriatic keratinocytes.

Journal of Cell Science 118, 655-657
Published by The Company of Biologists 2005
doi:10.1242/jcs.01664

*Feedback on our series of **Women in Cell Science** articles is always welcome and should be emailed to wics@biologists.com*