**Graham Fraser Memorial Fellowship Report**

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It was a great honour to receive the exciting news that I had been awarded the first of a new batch of annual Graham Fraser Memorial fellowship (GFMF) awards. I would be Associate Professor Catherine Birman’s first fellow following the retirement of Professor Bill Gibson. I had a year between being awarded the fellowship and heading off on my educational adventure to Australia.

My initial priority was to pass my FRCS, a requirement for commencing the post. I was then able to get on with the administrative tasks necessary for arranging an Australian fellowship. I started in June 2013 and was issued my visa 2 weeks before my flight on 31st December (quite a close run thing)! It is a difficult, and at times, frustrating process with a lack of guidance from abroad and an astonishing amount of form filling and postage to Australia. I have written a separate document for future fellows outlining the steps involved. Although it looks daunting it is without any doubt worth all the late night phone calls and multiple emails.

I arrived in Sydney on 2nd January a couple of weeks before the fellowship was due to start. I was greeted at the airport by a friendly driver arranged by A/Prof Birman. Thankfully he had a big enough vehicle for my 75kgs of luggage, which included a bicycle. It wasn’t long before he was ribbing me about our dismal performances in the Ashes. A/Prof Birman and her family (husband - David and two daughters - Emma and Rebecca) welcomed me that evening by taking me out for dinner in Darling Harbour. The next morning was my baptism of fire attending the test match in the member’s enclosure at the Sydney Cricket Ground. It was a fabulous way to get to know David and Emma and about the only decent day’s cricket that England produced in the entire series - phew!

I was incredibly fortunate to be able to spend my first 3 weeks in Sydney, house-sitting a Killara mansion for A/Prof Birman’s neighbours. My daily routine involved a swim in their pool, feeding the chickens and the cat, collecting a few eggs for my breakfast and a knock with the ball machine on their grass tennis court. This was a tough way to start my Australian experience! It provided the ultimate base for sorting out my own accommodation, a car and visiting the Royal Prince Alfred (RPA) Hospital to get my contract, occupational health and joining documentation finalised. I then did an unofficial first week shadowing A/Prof Birman and being introduced to the various hospital sites. Once again there was quite a bit of paperwork involved, including a working with children check that had to be verified at a New South Wales Motor Registry!

Broadly speaking, my aims for the fellowship were to improve my operative skills and clinical decision-making, be involved with teaching the junior staff and carry out some research. I would be immersed in a world of cochlear implantation but I also wanted to maintain my general otological skills and gain as much middle ear experience as possible. A/Prof Birman and I had a meeting a couple of weeks after my arrival where we discussed potential research opportunities, as well as our aims for the 6 months and our expectations in theatre and beyond.

Here is an outline of the working week with A/Prof Birman:

Monday: Theatre - Children’s Hospital Westmead (CHW)

Tuesday: Clinic – Sydney Cochlear Implant Centre (SCIC)

Wednesday: Am – off. Pm – Clinic Royal Prince Alfred Hospital (RPA)

Thursday: Theatre - Sydney Adventist Hospital (SAN) / Research

Friday: Theatre - Macquarie University Hospital (MUH) / Research

(CHW and RPA - public, SAN and MUH - private)

There were also general paediatric ENT/ paediatric otology clinics, a monthly microtia clinic at CHW and the weekly clinical meeting at SCIC. A/Prof Birman’s timetable varies slightly from week to week on a 4-week cycle. I spent 3 days / week with A/Prof Birman (Cathy), had 1 day for research and Wednesday mornings off.

I learned a lot from Cathy in the clinics at SCIC and CHW. She has an outstanding rapport with her patients and has a very methodical approach. After a couple of weeks I was seeing patients and soon began to plan a number of research projects. The clinic template in their public sector is far less onerous than in England with fewer patients to be seen per doctor. This enables more time for discussion and teaching.

Cathy has a vast amount of Cochlear Implantation experience and has driven very early paediatric implantation at SCIC. We did a number of infant implants and my youngest solo bilateral was a 5-month-old on a morning list at CHW. Switching between operating on adult and infant mastoids was a challenging and rewarding part of my surgical learning curve. A particularly difficult and enjoyable case was a unilateral cochlear implant for a patient with a prosthetic pinna on the operative side. He had a past history of a burn to the right side of his face and had also had radiotherapy and a STSG for a BCC. The 2 titanium abutments for attachment of his prosthesis were embedded in the mastoid leaving very limited access for the cortical mastoidectomy, the posterior tympanotomy and access to the round window for CI insertion. Positioning the receiver-stimulator to avoid the scar tissue and skin grafts while providing an optimum route for the electrode array was a challenge (see photos).

In terms of numbers, I was involved in 69 cochlear implants, I was primary surgeon for 33 and inserted the implant. 34 I assisted, the majority of which were private cases with Cathy and I did the cortical mastoidectomy. The private hospitals provided an alternative learning environment and also enabled me to earn assistance fees, which were a great help to supplement my living costs.

Criteria for implantation are less strict in Australia than in the UK. This allows a greater variety of residual hearing and speech discrimination in their CI recipients, which enables more scope for pushing research boundaries.

Two things I really missed were the Hughes and Beales elevators but it was a good challenge to adapt to using the curved Rosen needle for the finer dissection.

Cathy was involved in the controlled market release of the Cochlear**®** BAHA Attract. Cathy was doing BAHA Attracts privately and I was able to assist her on a few occasions to learn the technique. We listed a couple of patients from outpatients at CHW and when the opportunity arose to do the first public BAHA Attract in New South Wales, I jumped at the chance and did so at CHW on 23rd June.

I was fortunate to develop a good relationship with Dr Jonathon Kong (another of the SCIC / RPA surgeons who did his fellowship in Cambridge). After 3 months I started to operate with him on alternate Tuesdays at RPA, this definitely enhanced my fellowship experience and he became another valuable mentor and trainer. He has a broad otology practice of which about 40% is implants with the remainder being middle ear and a small proportion of skull base. Cathy’s practice is ~80% implants, which is obviously appropriate for the GFM fellowship. However, I think there is a limit to how much you can learn surgically about cochlear implantation from one person and hence the additional surgical sessions with Jonathon complemented my time with Cathy very well. Jonathon has an interest in endoscopic ear surgery and I learned a lot from him in this area. The endoscope achieves a far superior view of the hypotympanum, posterior mesotympanum and epitympanum. I believe this is an invaluable addition to our otological armamentarium and that we are on the verge of a paradigm shift in cholesteatoma surgery.

I thoroughly enjoyed training and teaching the registrars and residents in the public hospitals, particularly in theatre and the RPA general clinic, which was a great environment for discussing challenging cases. As a fellow who aims to become a teaching hospital Consultant this was an area of significant importance to me. This intermediate step, being able to train, but also watch how Cathy and Jonathon train their juniors, was invaluable experience.

I was warmly welcomed by the staff at every hospital site but developed a particularly good bond with the team at SCIC. I did the bulk of my research data collection there and the administrative staff and audiologists were always helpful and encouraging. They also bake incredibly well! I thoroughly recommend Liz’s Caramel slice and Steph’s ‘lolly cake’, which are second to none.

Dr Halit Sanli is a key member of the SCIC team. He is a dual qualified Biomedical engineer with a wealth of knowledge on diagnostic and peri-operative electro-physiological testing and electrical ABR. Working with him has helped me to appreciate the importance of and indications for the numerous diagnostic tests and use these to better predict outcomes, particularly for complex paediatric patients.

There were a few research ideas that grew from my initial discussions with Cathy. I met a number of audiologists who had done PhD work at the National Acoustics Laboratory in Ryde and was fortunate to visit the anechoic chamber. I also had discussions with scientific experts in Melbourne regarding potential localisation / lateralisation research. After a lot of background work we decided that this study would be suitable for a PhD or MD rather than a project that could be accomplished in the available 6-9 months and the ethics alone would have taken significant time. This groundwork will not be wasted and I intend to pursue these avenues of research on my return to London. We have written a paper reporting cochlear implant impedances in LVAS patients, which is almost ready for submission to Otology and Neurotology. Having teamed up with one of the audiologists from Australian Hearing at Macquarie University, we gained ethical approval and have two papers in the pipeline on bone-anchored devices. As and when these are published my GFMF award will be acknowledged appropriately. I have returned to the UK with a number of future project ideas as well as an improved understanding of the research process and the importance of good quality prospective data collection.

The Australian system contrasts with the NHS in numerous ways and there are many positives about both the public and private departments in which I was privileged to work. However it is not necessarily the utopia that I had been led to believe and I was pleased how often I could be proud of the quality of care we provide in the NHS. I do not think this is the place to list all the differences but hopefully I can incorporate some of the strengths of their departments and system into my future UK practice.

Other achievements and experience during my time in Australia:

* Useability validation of the new CI532 - Cochlear Ltd.
* Observing A/Prof Glen Croxson and Dr David Pohl at RPAH
* Attending RPAH Balance clinics with Prof Halmagyi and Dr Welgampola
* ASOHNS Annual Scientific Meeting - Brisbane
* Faculty - RPAH Otology course
* Observership – Rob Briggs and Stephen O’Leary - Melbourne
* Observership – Ben Panizza - Brisbane
* Visit to Toowoomba to assist Ranit De with 4 Med-El Bonebridge cases.
* Surgical aspects of cochlear implantation, presentation - Med-El training day.
* Delegate – Australian Endoscopic Ear Surgery Course - Sydney.

These aspects of the fellowship broadened my experience and definitely gave me a variety of surgical exposure crucial for high quality surgical training.

Finally, I was fortunate to rent a flat with views of the Harbour Bridge and Opera House in McMahons Point, a lovely suburb on the north shore. The flat was a little run down with somewhat tatty furnishings but this allowed me to have ample space in a prime location. Having brought my bicycle I was able to explore Sydney on 2 wheels at every opportunity. I made friends and colleagues that I will stay in touch with throughout my career and beyond. There are a plethora of great beaches, restaurants, and sports venues in Sydney and there was never a dull moment with numerous cultural, culinary and outdoor pursuits. When time permitted I was able to sail in the harbour and explore some of New South Wales and farther afield.

Overall my Graham Fraser Memorial Fellowship has been an invaluable learning experience in every way and I am enormously grateful for all the opportunities it has afforded me. I have no doubt that it has helped me to bridge the gap to Consultancy and that what I have learned will make me a better clinician, surgeon and trainer when I become a Consultant. I aim to work in a cohesive department and will strive to create a strong teaching and learning environment and drive future research wherever I may be.

THANK YOU