James IV Report

By Professor MJ Kerin

Professor of Surgery

National University of Ireland

Galway, Ireland

Based on the

James IV Travelling Fellowship 2002

James IV Traveller 2002

Itinerary

Foreword **December 2004**

During 2002 I had the honour of being a James IV Traveller. At the time I was working as the Lead Surgeon for BreastCheck, the National Breast Screening Programme in the Mater Misericordiae University Hospital Dublin. My duties involved breast cancer care, general surgery and surgical oncology. I wanted to enhance my ability to treat breast cancer, to evaluate how the unit I was developing compared with leading centres in North America and to get personal insights from leaders of departments who were international greats. I therefore chose an itinerary that allowed me to visit the Annual Society of Surgical Oncology and San Antonio Breast Cancer meetings (arguably the two best clinical/basic science surgical oncology meetings in North America) and major centres in Canada and the USA delivering cancer care and surgical education.

Looking back I now believe that the James IV Travelling Fellowship was my most formative educational experience. It allowed me to visit major centres and interact with clinicians there as a visiting professor. It helped my confidence and allowed me to get guidance from some of the greats of World Surgery who gave willingly of their time in allowing me to set my own agenda and meet with them. It reminded me that surgeons are human and some of the greatest human qualities of friendship and fellowship are seen in some of the worlds' finest Surgeons.

I have recently become Professor of Surgery/Head of Department at the National University Ireland Galway (one of the 5 medical schools in Ireland). My experience of being a James IV Traveller has helped me enormously both in the pursuit of my academic ambition and in the setting of goals for my stewardship and I thank the James IV Society most sincerely for the memorable and formative opportunity the travelling fellowship afforded me.

Michael J Kerin
December 2004

Society of Surgical Oncology 55th Annual Cancer Symposium
Denver, Colarado

I commenced my James IV itinerary with a trip to the Society of Surgical Oncology which was held in Denver from March 14th – 17th. I have attended several annual meetings of this Society since 1996 and find the content to be a very good combination / compilation of developments in clinical cancer surgery and molecular biology. In addition, I found the social side of the meeting to be very productive and an opportunity to catch up with friends in practice in North America and colleagues who are former MSKCC fellows. In 2002 I was accompanied by Diarmuid O'Riordain, a friend and former MSKCC fellow.

A particular feature of the Society of Surgical Oncology is the early morning breakfast meetings. On the first day of the 2002 meeting, the breakfast symposium was on trends in research and trial update for breast cancer detection and treatment. This for me was one of the meeting's highlights. Dr Frank Vicini from Ann Arbor spoke on accelerated radiation therapy and in particular partial breast irradiation. This is based on the fact that most recurrent tumours occur in the index quadrant. In his studies, he was randomising low risk patients to either intraoperative radiotherapy (IORT) or conventional external beam radiotherapy and he was quite convincing in suggesting that the former may turn out to be the most appropriate treatment.

A second presentation at this Symposium described the evolving and expanding role of aromatase inhibition and showed that at 33 months follow-up the ATAC trial demonstrated a 17% reduction in overall events in favour of anastrozole (vs Tamoxifen). This data has subsequently held up at 5 years follow-up.

Dr Jeffrey from Stanford then gave a very informative talk on DNA microarrays in breast cancer which were developed at Stanford. This technology is based on a single microscope slide which is spotted with thousands of different gene

fragments. Using a technique of differential labelling with red and green fluorescence on reference DNA and tumour DNA, it is possible to identify the gene expression profile molecular signature of a tumour. Stanford at that time were using 42,000 different gene clones per tumour and with help from bioinformatics, they had identified 5 different subtypes of breast cancer associated with different clinical outcomes. Dr Jeffrey compared her data to that produced by Laura Van t Veer et al from the Dutch Group and it was abundantly clear that this kind of research is as much dependant on bioinformatics expertise as it is on laboratory molecular biology scientists.

The final speaker at this session was Dr Hla from Conneticut who discussed cox2 inhibition in breast cancer. He described data from transgenic mice which suggested that cox2 overexpression is associated with mammary gland tumorigenesis and suggested that inhibition of cox2 may represent a means of breast cancer chemoprevention. This remains pertinent with several adjuvant therapy trials now including celecoxib as one of their interventions.

The role of molecular biology in the management of breast cancer was a running theme throughout the meeting. A particular highlight was the John Wayne Lecture given by Bruce Ponder from Cambridge, UK when he discussed breast cancer inheritance and the role of risk assessment.

Throughout the meeting, there were several abstracts presented on sentinel node assessment in breast, melanoma and other tumours. The acceptance of sentinel node assessment in breast cancer in the USA was in contrast to its acceptance in Britain (Almanac Trial results were awaited). Arnie Hill, a former MSKCC fellow and I had successfully introduced it into the BreastCheck Programme in Dublin by this time.

Sentinel lymph node biopsy in melanoma was a very active area of research interest at the meeting. Several abstracts showed the importance of the sentinel node as a predictor of disease outcome. One from the Lee Moffitt Cancer

Centre demonstrated that immunohistochemical and RT PCR analysis identified prognostically important micrometastatic disease. A presentation from MD Anderson confirmed the revised AJCC criteria accurately predict disease outcome and tumour thickness, ulceration and patient age (<50) strongly predict sentinel node positivity. The role of sentinel node positivity as an independent prognostic indicator was confirmed by presentations from MD Anderson and Memorial Sloan Kettering and in a multicentre study by David Krag.

There were several interesting clinical breast cancer presentations. I have a particular interest in skin sparing mastectomy and immediate reconstruction. The oncological safety of this procedure was demonstrated in presentations from Emory and University of Oklahoma. I was also very interested in Dr William Dooley's presentation on mammary ductoscopy in the evaluation of nipple discharge and discussed this with him at coffee. However, when I approached the company who manufacture the device in the exhibition area, I was disappointed to find that they did not manufacture it in Europe and had no plans to do so.

As usual this meeting was very well set up to satisfy the educational needs of the general surgical oncologist. I attended some presentations on minimally invasive diagnosis/laparoscopy/metastases ablation and a Sunday morning session on gastroesophageal cancer. The social side of the programme was also memorable especially the opening/welcome reception at the Denver Museum of Nature and Science.

Memorial Sloan Kettering Cancer Centre
New York

I visited Memorial Sloan Kettering Cancer Centre in April 2002. I was delighted to get the opportunity to spend some time in what I saw as the premier Surgical Oncology Centre in the world and particularly to spend some time with the Breast Oncology Unit and Dr Murray Brennan, the Chairman / Head of Department.

In planning my itinerary I received great help and support from Dr Brennan and in particular his PA Ms Terri Cohen.

On my first day in Memorial I was the guest speaker at the Surgical Breast Service conference hosted by Dr Pat Borgen and attended by all the breast surgical oncologists. This was held in the impressive Rockefeller Research Laboratory which as its name suggests was bestowed by the Rockefeller family. I delivered 30 minute talks on Breast Cancer screening and "molecular aspects of Breast Cancer management". The screening talk in particular provided a very lively discussion. The reason for this was the Ohlsen and Gotsche recent "Cochrane overview" which suggested that mass screening was inappropriate and contrasted strongly with the overview of the Swedish trials which suggested that breast cancer screening led to an absolute reduction in death of 2% in the screened population. This showed a maximum benefit in the 55-70 age group. In defending screening I highlighted the problems related to the studies chosen by O&G especially the fact that the Canadian studies were not truly randomised which indeed I was subsequently able to hear about first hand (randomisation was supposed to take place after clinical exam but in practice anybody with a suspected abnormality was "randomised" to mammography thus causing increased mortality in the screened population). We also discussed the Laura Esserman paper on screening mammography which highlighted the importance of volume in determining breast cancer detection rates among radiologists. In contrast to the USA in Europe a "high volume" radiologist reports on at least

5000 mammograms per year. In our Breast Screening Centre, the 25,000 screening mammograms per year are doubly reported by 3 Radiologists, thus they each report 15,000+ mammograms per year. A major part of the discussion centred on how lack of sub specialisation in radiology prevented this happening in USA. In addition most breast cancer in the USA was still diagnosed by open surgical biopsy. The audience were very impressed with the small benign biopsy to breast cancer ratio (<1:10) in the Irish National Programme.

Following the breast cancer meeting I had an opportunity to meet with Dr Kim Van Zee, one of the senior breast surgeons. We discussed many aspects of her practice in particular her weekly schedule which involved 2 days in the OR, 2 days in the clinic and 1 day in Admin. The breast reconstruction practice in MSKCC seemed to be primarily implant based which was in contrast to that in MD Anderson. The prosthesis was changed at the end of primary chemotherapy and then radiotherapy was given. Overall the cosmetic outcome was good and the overall failure rate was <10%.

One of the topics that particularly interested me was the impact of age on surgical decision making. Dr Van Zee agreed the the trials were not in a position to answer questions regarding management of very young patients with breast cancer and said that it was institutional policy not to radiate patients under 30 based on Mantle and Hiroshima data and that a mastectomy was always indicated for patients under 30. In addition there was increasing evidence from the DCIS population that young age was a risk factor for recurrence. I was then able to discuss the sentinel node strategy in MSKCC. Dr Van Zee stated that this was the only axillary intervention in the majority of breast cancer patients. They had the advantage of an intra-operative frozen section which was very useful but missed a proportion of patients who had micro metastases and this mandated a second procedure.

We also discussed breast conservation after neoadjuvant chemotherapy. In MSKCC it appeared that decisions with regard to surgery were taken prior to

neoadjuvant chemotherapy and in the majority of instances the patients had mastectomy.

I found the interaction with Dr Van Zee very pleasant, informative and useful. She gave the impression of being a hard working surgeon who was very well informed and trying desperately to find the right mix between clinical, administrative and academic/research responsibility.

As part of my New York visit I spent a day with Michael Osborne at the Strang Centre for Cancer Prevention. I found Dr Osborne to be a very good communicator and excellent host. He was originally trained in London in the Royal Marsden Hospital and went to Memorial Sloan Kettering as a travelling fellow in 1980. He was a contemporary of Robert Mansell (Professor of Surgery, Cardiff and Dr Bob Leonard, Swansea who are both well known to me). He then became a member of staff in MSKCC before crossing the street and eventually ending up in the Strang Institute where he now has a research group of about 40. He has a strong interest in breast cancer and had pictures of Craig Jordan and Mel Silverstein on the wall. We also discussed Pierre Chambon who collaborated with both of us (I received the ER gene from his lab in 1988).

We had a very good philosophical discussion on the Fisher breast cancer hypothesis (which we partially rejected), CoX2 and other potential methods of tumour prevention, and 16B oestradiol which he had studied extensively.

I spent some time with Dr Kevin Conlon who is currently Professor of Surgery in Trinity College Dublin and who was then an attending on the pancreatobiliary service in Memorial. I visited him at the end of an outpatient clinic in East 53rd Street. The most interesting features were - how remote from the base hospital the OPD facility was; the exclusive nature of the facility (14 floors with a 'hotel' overhead) and how well networked the clinic was with the base hospital.

Dr Conlon also took me on a tour of the Robotics facility which he had installed. This was in a State of the art operating complex in MSKCC and included an integratable computer image with TV to allow stereotactic minimally invasive surgery facilitating integration of preoperative images with intraoperative findings and operative strategy.

I also went on a ward round with Dr Conlon. The in patients were mainly post pancreatic surgery and we had an interesting discussion about pre-operative management of a patient with a phaeochromocytoma who was being hydrated rather than pharmacologically manipulated pre-operatively. I greatly enjoyed my time with Dr Conlon – we have been friends for quite some time having first met him with my mentor and Academic Head in Hull, John Monson (former James IV traveller and fellow Irishman).

One of my most memorable interactions in MSKCC was an afternoon spent in the OR with Dr Les Blumgart whose personality in the flesh matched his reputation. The patient was a 60 year old man who had 3 lesions in the left liver having had a previous rectal tumour. He had a transverse colostomy following a post-op leak and the operation was a synchronous left hepatectomy and closure of colostomy. This was done by the fellow 'Joe' and a senior resident/oncology fellow. Dr Blumgart supervised from a position at the back of the room in front of a large TV to which the pictures were broadcast from a camera on a boom operated by a cameraman. The atmosphere was convivial, memorable and exhilarating. Dr Blumgart directing operations à la Hollywood style in a caring, belligerent way, while entertaining everybody especially me. I learned about closing the stoma site with a subcuticular suture before commencing and his role in training the heads of the liver programme in Duke and Johns Hopkins amongst other major centres ('Joe' was about to go to Oklahoma) as well as the career pathway that took him from dentistry and surgery in the UK to Head of the Liver Programme in European centres and now in his mid 70s, he was leading the programme in one of the worlds great Oncology Institutions,

I learned how enthusiasm and drive can influence people and the qualities that are important in team building are as necessary in great institutions as small ones.

Dr Blumgart and I discussed his experience of liver resection (I had worked in liver units with Professor Giles in Leeds and in Dublin with Gerry McEntee) and how the mortality was now 1% and he believed synchronous resection of the colonic and liver lesions was now appropriate. He still believed in wide exposure and blood loss was now 450 mls on average. We discussed the role of liver resection in non colonic cancers. His view was that it was of no value in extracolonic GI malignancy and was useful in breast and melanoma if there was a long tumour free interval and the metastasis was solitary.

I spent some time with Dr Jeff Boyd who was the Laboratory Director for Translational Research (defined by the National Institute of Health as a project with potential clinical application within 5 years). Dr Boyd has a SPORE grant – Specific Programme for Research Excellence. We had several interesting discussion topics related to breast ovarian cancer:

a) Estrogen Receptor B
b) Gene expression profiling paper by Laura Van t Veer and colleagues from Holland (Nature) and how there were many imponderables related to it
    1) Reference group and assessment group were the same cohort.
    2) Very small prospective series (19 patients).
    3) 580 genes predicted ER status but only contained 2 of the 50 genes in other series
    4) While the poor prognostic group had 15-28 times increased risk of progression, the Nottingham Prognostic index and other standard parameters could so as well when one considers that grade, size, nodal status, lymphovascular invasion and age all have risks of 2.4-6.0 times and while not independent they may well give similar results to gene chip on aggregate.

c) Breast cancer cell lines. We agreed that these resembled each other more than primary breast cancers. We discussed the techniques of primary cell culture that I used with Val Speirs.

d) Platinum. Jeff's research had concentrated on the role of platinum in ovarian cancer and he suggested that it would be particularly effective in BRCA1 related ovarian diseases because cross linkages caused by platinum cannot be repaired if BRCA1 is defective. This could well be effective in breast cancer.

e) Molecular targets. We discussed HER2 (expressed by breast cancer and treated by Herceptin) and KDR (not expressed by breast cancer and treated by imatinib (gleevec).

f) Means of identifying an array of genes switched on by oestrogen and use of this to predict oestrogen responsive breast cancer

g) Potential to assess genome wide damage by using polymorphic markers at 100 sites and then predict outcome à la gene chip.

I found Jeff a most interesting discussant and felt that I could have a very useful collaboration with him.

During my week in Memorial I had a lot of interaction with Dr Murray Brennan who I had met on a few occasions during his frequent visits to Ireland. His CV includes an honorary Freyer memorial medal which is the highest academic honour that my current University in Galway can give to a visiting surgeon. I spent time with him in the operating room on a couple of occasions but particularly enjoyed a "one on one" meeting that I had with him in his Chairman's' office for an hour and his Chairman's Conference. The value of my meeting with him was the ability to set the agenda and to ask questions that are relevant to leadership but which are usually not appropriate.

We discussed the value of research and his SPORE grant on sarcoma which spanned clinical, molecular diagnosis, immunology and chemotherapy. He felt that there was a move away from the traditional surgical laboratory and he felt that while a surgeon must be involved in translational research it was important to have senior scientific support.

I asked him for advice on CV – he said concentrate on what one is doing now (last 4 years are the most important) and one's clinical training. From the academic point of view papers are the most important – abstracts are of no relevance.

I then discussed time management. He advised me to save time for academic activity. Cherish trainees – always correct academic papers first. Email was a blessing and a curse – save repetitive chores for the end of the day.
Finally I discussed leadership skills with him and staff recruitment and retention. He said set goals and feedback. Stop people from doing stuff that they are not good at and resource the productive people well. I'll never forget the closing remark – "Not all fires you light will stay lit".

This hour was arguably my most valuable in the entire James IV trip as I had the opportunity to interact with the King of Surgical Oncology in arguably the best Surgical Oncology Cancer Centre. I was able to get his considered opinion on many of the practical issues in day to day activity and it has practical applications on how I currently manage my time and prioritise.

I then saw him in action at the Chairman's Conference which is certainly the highlight of the fellows week in MSKCC. All of the fellows were present as well as Dr Brennan. Dr Coit, Dr Jacques, Dr Karpel and 2 junior attendings from Medical Oncology. There were 2 cases for discussion – chosen by Dr Brennan from a panel of 6 prepared by the Fellows. All of the oncology fellows were questioned about management issues. One case was of an osteoclastic pancreas tumour, jaundice and renal failure. Dr Brennan questioned the residents on

differences between hepatorenal syndrome and renal failure 2^0 to jaundice. He had direct specific questioning with a manner that varied between gentle, scolding, sarcastic and provocative, keeping the audience awake, informed and entertained.

The second part of the chairman's conference during my visit consisted of a presentation on a new gastric cancer trial from Dr Shah (Medical Oncology) and Karpeh. This was a neoadjuvant trial of **Cisplatinum/Irinothecan** and radiotherapy prior to surgery. The role of radiotherapy as standard of care in gastric carcinoma was not felt to be justified as NSABP 0116 had not looked at other essential parameters including number of + nodes.
During my time in Memorial I managed to spend some time with Dr Pat Borgen. Dr Borgen as head of the breast service has a very busy practice, is involved in many national administrative and college issues and is also striving to develop breast related research and funding. He is very good humoured and energetic and a great host. One of my interactions with him was in the lab with Jeff Boyd with whom he has several collaborations including microarray and gene chip breast cancer analysis. Dr Borgen also researches psychological aspects of breast cancer including effects of chemotherapy and quality of life issues. We discussed research funding and the role of endowments. I also accompanied Dr Borgen to the OR when he was doing a bilateral nipple/areola sparing mastectomy with subpectoral implant reconstruction.

Dr Borgen agreed with Dr Van Zee who I also accompanied to the OR that sentinel node had replaced axillary clearance in the breast practice in MSKCC and it was interesting that unlike most other US practices prosthetic breast reconstruction was certainly the procedure of choice in MSKCC.

I met Virgilio Sachini in Memorial also – he had come from the Veronesi Unit in Milan and was now an attending in the Breast Service. Dr Sachini was a genial man who was in a very good position to discuss the differences between breast cancer management in Europe and the USA. He was also able to find

insights into why it was so easy to recruit into the Milan Trials and the consent issues of today. In particular we discussed lumpectomy versus quadrantectomy and the role of radiotherapy and patient age. He gave me some interesting slides and insights based on data from Milan.

MILAN 1

	Halsted	**Quart**
	(349)	(352)
Local Recurrence	8	28
Contralat Cancer	30	28
Metastases	83	81

MILAN 3 (567 CASES)

12 years follow-up

	Quad	Quart
Local Recurrence	(273)	(294)
3 years	12.2 %	0%
5 years	16.1%	2.8%
10 years	27.1%	6.9%

There was a significant correlation between age and local recurrence into patients under 40 having a 42% recurrence rate without radiotherapy and those older than 65 having a 4 % incidence of recurrence regardless of radiotherapy use. This finding has recently been reproduced in a new England Journal of Medicine paper suggesting that in T1, ER positive cases that radiotherapy may be omitted in patients over 70.

Robert Wood Johnson Medical School/Cancer Institute
New Brunswick, New Jersey

Following a week in New York I moved to New Jersey – the memories of crossing the Hudson on the magnificent George Washington Bridge will live with me. The motivation for going to New Jersey was that Steve Lowry, Professor and Chairman of the Department of Surgery was Secretary of the North American Chapter of the James IV Association and 'recruited' me, but also that the chemistry between a Cancer Centre and a general hospital setting was something that I wanted to explore. A similar tension exists in Ireland with regard to academic centres, general/district hospitals and organisation of cancer services. Dr Lowry set up a great programme for me and was a wonderful host.

On my first day in New Jersey I had breakfast with Ramsey Foty who is an assistant professor/scientist working with Dr Lowry. His interests involve tissue tensiometry and repair mechanisms. While wound healing is his basic science background he is trying desperately to get into the cancer field. He has demonstrated that lack of fibronectin reduces the metastatic potential of cells and under a "putting the squeeze on cancer" label he was seeking clinical collaborations to achieve an NIH grant.

Following breakfast I joined Thomas Kearney in the OR where he and Phillip Wey were doing a skin sparing mastectomy with a pedicled TRAM flap reconstruction for a 46yr old patient with an upper outer quadrant tumour. We had a very good discussion on breast cancer management, types of reconstruction and axillary surgery. This patient had a standard axillary clearance as Dr Kearney was only doing sentinel node procedures on the NSABP B32 protocol.

The memorable events from the OR intervention were the large size of the operating room, the presence of the Da Vinci Robot in the corner, and Dr Weys's very neat reconstruction with the preservation of the rectus fascia. One

believed him when he said that he felt that there was a very small incidence of abdominal morbidity post TRAM reconstruction.

I then had a meeting with Dr Lowry. He was great company and a very open and welcoming host. We had a discussion about leadership, clinical and research issues. In particular we discussed the impact on general surgery of having a cancer centre on site. He described the history of the hospital and explained the value of having the Johnson & Johnson family as benefactors.

The origins of the Medical School in new Brunswick could be traced back 200 years to the Rutgers Medical College but in fact it has only recently been developed and expanded. In addition to the development of the Department of General Surgery which Dr Lowry heads the Cancer Institute of New Jersey headed by Bill Hait has developed surgical oncology programmes at the Robert Wood Johnson University Hospital. The research programmes have developed to a huge extent placing the Department of Surgery in the top quartile nationwide which has spin-offs from the point of view of recruitment into training programmes. I was able to discuss the issues with Dr Lowry who clearly is pivotal in the development of general surgery.

The Department of Surgery is based loosely around the provision of trauma care – The Robert Wood Johnson University Hospital is a level 1 Trauma Centre. Surgical critical care is an important part of this and serves the research as well as the clinical interest of several of the Faculty including Dr Lowry.

The undergraduate surgical education programme serves about 220 medical students in the University Hospital. The delivery of surgical education had undergone the same changes as are happening worldwide – problem based learning and mentoring rather than didactic teaching. The residency programme involves 5 years of clinical work as well as one year of laboratory based research – usually after 2 years of the programme. It appears as if this programme is improving in the national pecking order and gaining better

residents due to the improved status of the institution. Dr Lowry discusses all of these issues in detail and certainly brings the leadership necessary to develop the institution. He was a most gracious and friendly host and could not have done more for me – I would recommend his centre to any aspiring James IV Traveller.

I then met Margaret Schwartz who was an Assistant Professor in the Surgical Science division and wife of Rod Schwartz an assistant professor in Surgical Oncology/Hepatobiliary Surgeon. Margaret was working on endothelial activating polypeptide 2 an antiangiogenic factor which is very important in revascularisation post myocardial infarction. Her husband Rod was a recent addition to the faculty having moved from Good Hope University San Francisco. I had previously met Rod at the Society of Surgical Oncology where he had given a presentation on gastroesophageal tumours. He was educated in Hanover, Germany and went to the USA in 1987 to do research in Pittsburgh. Following this he did a residency and then a surgical oncology fellowship at MSKCC at the same time as a friend of mine Diarmaid O'Riordain. His interests are pancreatic/hepatobiliary/upper GI. We had a very fruitful discussion and I gained insight into the tensions between a cancer centre and general hospital and the labels attached to surgeons. We compared and contrasted what was happening in Europe and the differences between a surgical oncologist and a 'tumour site' general surgeon. He felt that follow-up of cancer was much better in the USA though the CT scan was replacing clinical history /physical exam as a diagnostic tool.

Rod is involved in pancreas cancer trials and we discussed the problems associated with this especially the fact that most pancreatic cancer patients were unfit for chemo trials because of comorbidity / malnutrition. He planned to run trials on a Kras vaccine and antiangiogenic therapy. We also discussed Estrogen Receptor Beta and its relationship to the pancreas (it is it is over expressed in pancreas carcinoma) while Tamoxifen is still used as an adjuvant therapy in pancreatic carcinoma.

I also met Siobhan Corbett a physician scientist who now had very little clinical input (emergency rota only) and devoted her time to teaching and research. She acted as dean for year 3 students 2 days per week and was active in the research lab the remainder of the time. We had a very lively discussion on the role of the physician scientist and the value of research. Her thinking was very similar to my own – the difficulty for a resident in getting useful research in 1 year; the conflict between getting one good publication or a few lesser ones. The European model involves a thesis which is unusual in North America.

Dr Corbett's research interests span molecular biology (proteonomics). She has a particular interest in integrin function and regulation including Beta 3 integrins and $\alpha 5\beta 1$ pathway. I found it interesting that the funding/integration of mathematician/statisticians into molecular biology/research proposals is very difficult even in NIH applications. Medical informatics is also a boon and developing area in Ireland.

During my visit to New Jersey, I had several useful interactions with the members of the Surgical Oncology Group which is a part of the New Jersey Comprehensive Cancer Care Programme. Dr David August is Associate Professor and Division Chief and is involved with both breast and colorectal cancer. He seems to be still research active and is certainly clinically very busy. We had a useful interaction about the pressures of clinical and research productivity. Dr Tom Kearney who does mainly breast cancer work seems to be a clinician whose research interests are now mainly confined to recruitment into clinical trials. Dr August continues to be interested in nutrition in surgical patients, an area which overlaps Dr Lowry's.

I met Dr Jim Goydos who seems to run a major clinical / laboratory research programme on melanoma. He has a particular interest in trial recruitment and also is involved in PCR based diagnosis of sentinel node micrometastasis. I had a full discussion with him in the lab about PCR based analysis and then joined

him for a joint resident teaching session incidentally on a case of gastric carcinoma.

I also had an opportunity to meet the medical oncology faculty members in particular Dr Debra Toppmeyer and Bill Hait who is the Centre Director and the key person behind the Cancer Centre of New Jersey. He was excellent company and we discussed issues of funding, leadership, time management and research productivity. He is Deputy Editor of Clinical Cancer Research and recruited me onto the Editorial Board. He explained that he protects his mornings for his research programmes and does clinical work on some afternoons. Dr Toppmeyer was great fun to talk to and clearly is a very energetic person who manages research, clinical practice and practice development / trials recruitment very well.

Overall I found New Jersey a very useful experience. Many of the issues encountered by the people I met parallel my own and the interaction of a general hospital / comprehensive cancer centre / surgical training programme and research in this environment is the same challenge that we all meet each day. The leadership and teamwork provided by the main players in this programme show how an individual centre can prosper.

University British Columbia, Vancouver

I visited 3 Canadian centres as a part of the James IV Travelling Fellowship for 2 weeks in late September/early October. My visit to Vancouver was hosted by the International President of James IV Association, Dr Richard Finley. Dr Finley is a former head of the Department of Surgery in Vancouver and is currently Head of Thoracic Surgery there. Dr Finley was a most gracious man and my stay in Vancouver could not have been more enjoyable. The weather was remarkable and September seems to have been a very good choice to visit a city that I believe can be very foggy/misty (like my native west coast of Ireland) but on this occasion I did not see a drop of rain and the sun shone continuously making Vancouver appear the most beautiful city in the world. The backdrop of the mountains and the views from the Department of Surgery offices and particularly the PAR (Post Anaesthesia Recovery area) in Vancouver General Hospital are magnificent.

Vancouver appears to be a particularly friendly place. In the course of my visit I found the surgical community there to be very open, friendly and informative. The major hospital there, the Vancouver General, is a modern hospital with the main tower being currently commissioned – it has been built but empty for some 10 years (could be in Ireland!). A particularly stunning part of this is the Radiology Department which is like a very large shopping mall and contains sub specialist suites of rooms/imaging facilities on a grand scale (certainly compared to what I am used to).

The working day in Vancouver appears to start for most surgeons at 7am – Grand Rounds, Research Conferences and Division of Surgery business meetings took place at this time. The residents commence work at 6.00 or 6.15am. The group of residents I met in Vancouver (I had a very enjoyable case presentation session with them) were hugely energetic and driven. The senior resident Dr Nadine Caron was of native Canadian Indian extraction and apart from being a very good communicator and a technically very competent surgeon, she was an

undergraduate gold medallist All Canadian basketball player and now ran marathons and triathlons. Two of the other more senior residents had spent 2 or 3 years in full time laboratory research and were now in full time surgical training. All 8 of the residents appeared to have a more active lifestyle than their European equivalent and despite working from very early in the morning and having quite an onerous on call commitment they developed / maintained hobbies and sports interests.

I met with Dr Scott Warnock, the current Head of Department and former James IV Traveller. He has been in Vancouver for about 2 years and has been able to develop his laboratory interest of islet cell transplantation. He has a general surgery/hepatobiliary interest and has a major role in the development of surgery in British Columbia. Dr Warnock spends 2 days per week in clinical practice and the others are in administration/research. The hepatobiliary unit in Vancouver General appears particularly strong. Dr Stephen Chung another hepatobiliary surgeon is Head of General Surgery, and does live transplantation work and also has a strong research interest. The third hepatobiliary surgeon Dr Charles Scudamore is named “Buzz” which describes his character very well. He is enormously busy and has a large tertiary referral hepatobiliary practice. He has trained several of the hepatobiliary surgeons in Canada and practices ERCP and complex biliary surgery with an enormous commitment and enthusiasm. He was a most welcoming and gracious host. We had a most enjoyable lunch together between cases on one of his OR days.

The breast unit in Vancouver demonstrates some of the differences between the North American and European practices. There are 3 surgeons involved in breast surgery – Dr Noelle Davis (head Surgical Oncology, past James IV traveller), Dr Greg McGregor and Dr Rona Cheifetz. All are well trained and energetic surgical oncologists and appear to do a significant amount of thyroid, parathyroid, melanoma, sarcoma and gastrointestinal surgery. All are on the general surgery rota and all practice out of a suite of offices opposite Vancouver General Hospital. The referral of patients to their office appears to be primarily

from general practitioners and the majority of patients with breast disease have a diagnosis of a cancer or a mammographic abnormality before being seen. Mammography/breast radiology appears to be mainly done by 2 groups of radiologists practising in community clinics rather than in the main hospital setting. Triple assessment, as we know it, is not that well developed and waiting times for core biopsy can be as long as 6 weeks,

Another major issue is the relationship of the surgeons to the Cancer Agency and the Cancer Centre which exists on the grounds of Vancouver General Hospital. This Cancer Centre is government funded and is a fantastic facility which delivers cancer care in the form of medical oncology and radiation. It appears to be medically run by clinicians from those specialties and focused multidisciplinary work as we know it is difficult as surgeons are off-site and appear to be a little disenfranchised because of that. There are four Cancer Centres for British Columbia with about 14 linear/accelerators and radiation facilities overall. However the access of the distant communities to radiation is not adequate due to geographic difficulties (a situation which pertains in Ireland though the country is much smaller). In order to develop a proper infrastructure for cancer care it would appear necessary for referral patterns and assessment to change and to involve Surgeons working more out of the cancer centres. Joint clinics could then be done with medical and radiation oncology and a better multidisciplinary programme would ensue.

One of the major advances from the Cancer Centre has been the development of a Surgical Oncology network which encompasses continuing medical education, data collection and outcomes research and communication with a British Columbia Cancer Agency network. All of this is provincial government funded via the Cancer Agency. Dr Rona Cheifetz has a major role in the education part of the programme and is ideally trained for this as she has a Masters in Education which she completed as a 1 year course after her residency and prior to her surgical oncology fellowship. She co-ordinates an annual update in general surgery and is developing a role for surgical oncology in BCCA Cancer

Conference. In addition she has been developing seminars for surgeons and working with medical rounds.com (a private provider run by a doctor) in order to put medical education on the website (my lectures were taped for this purpose).

In common with many other North American cities the provision of healthcare in Vancouver is divided between University Medical School associated major teaching hospitals and Community Care type/private practice led institutions. In Vancouver the Vancouver General is the largest institution and has recently merged with the University of British Columbia Hospital which is on campus at the University. I had the pleasure of visiting Dr Peter Lennox a plastic surgeon who does a large amount of breast reconstruction at the UBC site. In UBC I met many people with Irish connections. Interestingly, Dr Lennox' resident was Dr Caitriona Lawlor whose parents hailed from Belfast and Dr Lawlor had spent a year of her medical school education at University College Dublin and knew several of the residents who worked with me. Her Dad was a Vascular Surgeon in Saskatoon and best friend of Peter Eustace's brother (Peter Eustace being emeritus Professor of Ophthalmology in the Mater Hospital and much admired strategist and member of the Board of the Mater. Dr Tara Fong who was a GP and does assistant theatre work also had strong Irish roots as her mother was from Co. Galway and her father was educated at my Alma Mater UCG medical school. One got the impression that the UBC site was more relaxed and perhaps less productive than the UGH site due to the major academic presence at the latter and that the potential for co-operative scientific/medical research was under explored due to the lack of a major academic medical presence at UBC hospital though this impression may not be accurate.

I had a very pleasant morning in the OR with Dr Lennox and his colleagues. He removed some implants, performed a capsulectomy and reconstructed the inframammary fold. He also performed a pedicled TRAM flap reconstruction and said that on average he did one such reconstruction per week.

The third undergraduate/training hospital in Vancouver is St Pauls. I had the pleasure of spending several hours with Dr John Macfarlane the former head of surgery in St Paul's and past President of the Canadian Association of General Surgery. Dr Macfarlane is a very energetic man who, though nearing retirement is obviously full of energy and has spent an extended sabbatical at Basingstoke with Mr Bill Heald, Colorectal Surgeon whose name is synonymous with the operation of total mesorectal excision. Dr Macfarlane has written several papers with Bill Heald and was animated at the prospect of the upcoming teaching sessions on TME which he was organising with Dr Cheifetz and others.

St Pauls hospital is an old hospital by Vancouver standards and appears to have been the major general hospital with up to 15 practising general surgeons 15-20 years ago. The complement of general surgeon has now dropped to 4 which makes the delivery of trauma care quite difficult especially as the Consultant Surgeon may be on call with a medical student (this happens half the time as there are only 2 junior residents on the site and the maximum rota is 1:4). The average age of the attending surgeon in St Pauls is close to retirement (60) and Dr MacFarlane was hoping that the introduction of a clinical Academic Service Contract (which would provide salary for the consultants) would lead to the Consultant Surgeon positions being more attractive at St Paul's. A rationalisation of service and particularly of trauma across the 3 sites in Vancouver appears necessary but is unlikely to happen while St Pauls hospital remains under independent governorship. Interestingly, the colorectal cancer ward, cardiac surgery and clinical epidemiology/ virology lab (due to the high HIV prevalence in the referral area) are all centred in St Pauls at present. Dr Macfarlane certainly has the future of St Pauls and academic surgery at heart but lack of continuity seems to be a huge problem. This can be exemplified by the fact that he has had 11 secretarial changes in 2 years!

The problems in St Pauls are a reflection of a lack of general surgeons/surgical oncologists, which appears to be a problem throughout Canada at the present time. Health funding is a major issue and was frontline news during my visit

with issues such as waiting times and junior doctors/residents hours and remuneration providing the same political ammunition as they do at home. Dr Mark Taylor from the University of Manitoba visited VGH while I was there and gave a visiting professor lecture on waiting times and a Western Canada Waiting List Project which he has used to develop an objective measure of waiting times and waiting list needs. Interestingly the waiting time for breast cancer surgery was a median of 36 days from the time of family doctor referral and it appears as if the acceptable wait (from a patient's perspective) is 14 days. The major waiting list problems appear to be heart surgery, joint replacement and cataract surgery. A problem for general surgery seems to be that no matter what instrument is developed to assess waiting times vs. clinical needs, the majority of elective general surgery operations are low priority (e.g. hernia repair/ cholecystectomy for uncomplicated biliary calculi) and this has led to the diminution of OR access for the majority of general surgeons with subsequent disquiet among those who do not have a big cancer practice where the perceived need is greater. In addition the interaction between the large, complex, high tech centre such as Vancouver General and the need to deliver relatively low key, high volume elective care is a problem the world over. It appears as if all doctors prefer to work in one high tech site but the delivery of cheap and cheerful high volume care (à la airline industry) involves co-ordination between the high tech and the low budget centres.

Vancouver is a most beautiful city. The weather while I was there was fantastic with the temperatures in the high 20s. I had the pleasure of having dinner in the "Seasons in the Park" restaurant in Queen Elizabeth Park, famous for being the site where Boris Yeltsin and Bill Clinton had their summit dinner in 1992. The views from the restaurant were superb as indeed were the views from the city centre Monk McQueens restaurant on the harbour where I had dinner with Drs Davis, Cheifetz and Dr Andy Goldman who is the Director of the Screening Programmes at the British Columbia Cancer Agency. The food, wine and company at each of these dinners were superb.

There are many similarities between the Irish Breast Screening Programme and the screening mammography programme in British Columbia, but also many differences. Interestingly the population of the province of British Columbia is quite similar to Ireland. The age profile of screening differs – the Irish screening programme invites women aged 50-64 but the BC programme screens all women between 40 and 79 (those aged 40-50 annually, others 2 yearly) and will screen the under 40s and over 80s on request. In 2000-2001, 225,000 women were screened in British Columbia. This was done via a variety of fixed sites (approx 30) and 3 mobiles which visited areas in the Interior, Islands and coastal/northern regions respectively. Unlike the Irish Programmes there were many radiologists (approx 60) who were involved with the screening programme and the majority of symptomatic centres were accredited as screening centres. The screening service in British Columbia is enhanced by community contributions such as free advertising in the local media, donated space in community facilities for the mobile units and volunteers who organise community group meetings and greet women at the mobile visit site. However, overall the compliance with the BC Screening Programme is relatively low – 48% overall in the 50-74 year age group (compared to 75% in Ireland). The cancer detection rate was 4.8 and 7.6 per 1000 women aged 50-59 years and 60-69 respectively in the first round.

Interestingly open biopsy was far and away the most prevalent diagnostic procedure – 150 of 202 cancers were diagnosed on this modality and only 445 of the 947 first round patients requiring biopsy had a core biopsy or FNA performed. This contrasts with BreastCheck where 90% of patients have a minimally invasive pre-op diagnosis. The median tumour size was 10mm and 50% of tumours were grade 1 and 70% were node negative (12% unknown). Of the grade 3 tumours 48% were less than 15mm and 68% of the invasive cancers overall were <15mm and 19% were node positive.

One of the very important and interesting aspects of the BC Screening Programme is the central pathology review process which is co-ordinated by the

VGH pathologists particularly Dr Malcolm Hayes who I spent some time with. This was a very active programme in the past but had now been dropped because the provincial centres were up to speed and the only patients whose therapy was changed were the 10% of node negatives who were upgraded. There were now established provincial guidelines and the central review process only applied to new centres. There was still one central review meeting per year and central monitoring for all radiologists and pathologists involved in screening. Dr Hayes is a reservoir of knowledge about breast screening pathology and process and I had a most enjoyable time with him.

During my time in Vancouver, I spend several hours with Dr Noelle Davis, Head of Surgical Oncology. She has a busy surgical practice and is very good company. Her sentinel node practice and philosophy on the management of breast cancer paralleled my own. I also spent some time with Dr Greg Macgregor who is also a Surgical Oncologist and appears to be a Surgeon's Surgeon – very busy, very large practice with a deft touch in the operating room and a cool, uncomplicated approach to the delivery of surgical care. He seems to get through large volumes of work in a very organised manner.

My entire visit to Vancouver was co-ordinated by Dr Richard Finley, Head Division of Thoracic Surgery, past Head of Department of Surgery and member of James IV Executive and past traveller. Dr Finley is a star and the kind of host that one dreams of contacting in order to achieve one's academic and professional needs and to see an institution 'warts and all'. My visit could not have been better organised and I was able to see how the system works in Vancouver from all angles. He himself is particularly interested in CT screening for lung cancer in a high risk population and we discussed the problems with the diagnosis of the sub 1cm nodule. He was able to discuss the combined project he had with Radiology in screening 1000 patients with a 3% incidence of 1 cm nodules. He also explained to me how cardiac surgery was separate to thoracic surgery in Vancouver.

On the Friday evening of my visit, Dr Finley picked me up at the Hotel and took me home for the weekend. His home setting is idyllic and I had a most endearing dinner with his delightful wife Mary and son Christain who is a medical student. On Saturday, we climbed Mt Stewart and had a most memorable day. I remember getting up at 4 a.m. on Sunday morning to watch the European Golfers score a surprise victory over the USA at the Belfry in the Ryder Group. Dr Finley then drove me to the airport.

Reference

1. Olsen O, Gotzsche PC, Cochrane review on screening for breast cancer with mammography. Lancet 2001: 358: 1340 – 42.
2. Esserman L, Cowley H, Eberle C et al. Improving the accuracy of mammography – volume and outcome relationships.
3. Hughes KS et al. Lumpectomy plus tamoxifen with or without irradiation in women 70 years of age or older with early breast cancer. N Eugl J Med 2004: 351(10): 971-7.

Montreal General Hospital Breast Unit

Vancouver

I flew from Vancouver to Montreal and was struck by the great difference in landscape – the wide open/pacific feel to Vancouver and the big town/cosmopolitan feel to Montreal. I had purposely curtailed my visit to Montreal to one day as Dr Meakins, the Director of Surgery at McGill who had kindly invited me earlier in the year was actually leaving to take up the Chair of Surgery at Oxford and my visit did not suit his schedule. However, Dr Antone Loutfi, Head of the Breast Unit @ Cedars Breast Clinic in Montreal General Hospital hosted my visit and kindly showed me the layout of the purpose built breast unit. He explained that this unit was a referral unit rather than a screening centre. All women in Quebec aged over 50 were screened 1-2 yearly and there were 5 referral centres in Montreal. I had a very good interaction with Dr Loutfi who gave me a tour of the facility and showed me the database, radiology and conference centre. Again it was apparent that multidisciplinary working as we understand it was not quite as developed as it is in Britain/Ireland.

It was clear that breast cancer care in Montreal was provided out of several centres and seemed to be of a high standard. Other centres also had a major research interest particularly with translational research particularly on Ashkenazi Jewish population being very important.

I flew onto Toronto that evening and began a very memorable part of my trip to Canada.

Toronto

Following my trip to Montreal, I flew onwards to Toronto. My Toronto visit was very well co-ordinated by Dr Robin McLeod, Professor of Surgery and Health Policy, Management and Evaluation, University of Toronto. Dr McLeod was a former James IV Traveller and is currently the Head of Division of General Surgery in Mount Sinai Hospital She put an excellent programme together for me.

On the evening of my arrival in Toronto, I had a most enjoyable dinner with the Breast Group. Dr Alexandra Easson picked me up at the Hotel. We had dinner with members of the Breast Faculty including Dr Dave McCready. The following morning I accompanied Dr McCready to the operating room in Princess Margaret Hospital. We had a very useful discussion on breast cancer and its management and he demonstrated techniques of mastectomy and axillary clearance. Following this I met Irene Andrulis, Director of the Ontario Genetics Network. I then gave a lecture on molecular insights into breast cancer at the Samuel Lunenfield Research Institute. This was very well attended by research fellows and residents. Following lunch, I met Pamela Goodwin, the Marvelle Koffler Chair in breast research and the Director of the Breast Centre in Mount Sinai Hospital. This centre is obviously very well funded and has excellent facilities for patients. Not unlike several other centres in Canada, there was a dearth of Breast Surgeons during the time of my visit and there seemed to be little clinical interaction between Princess Margaret and Mount Sinai. Nevertheless, this centre seems excellent and I had a long discussion with Dr Goodwin about her views on nutrition and breast cancer.

I then proceeded to tumour review board rounds at Mount Sinai and gave my talk on breast cancer screening in Ireland. This again was very well attended and I met several Irish graduates including Dr Anita Bane who was completing a pathology fellowship in Toronto. Following a long and very entertaining day, I had dinner with Dr Robin McLeod, Dr Richard Resnick and Dr Wayne Johnson -

all previous James IV Travellers who were excellent company and provided me with an invaluable insight into life in Toronto and academic surgical progression in Ontario.

During my visit to Toronto, I had an opportunity to spend a morning in the University of Toronto Surgical Skills Centre at Mount Sinai Hospital. This was one of the most important parts of my entire James IV visit as it allowed me to see first hand the practicalities of teaching and training and the value of the Skills Centre both for undergraduate and postgraduate trainees. I saw at first hand how an OSATS (Objective Structured Assessment of Technical Skills) might work. This is a performance based examination designed to assess the technical skills of surgical trainees. OSATS stations involve bench model simulations of operative procedures appropriate to general surgery. Performance at each station is marked by a qualified surgeon and is evaluated using two evaluation tools – an operation specific check list and a global rating scale. The University of Toronto Surgical Skills Centre is funded by industry, medical device agencies and fees from the participants in the courses. It is a precursor to modern practical teaching and training methods and I believe a similar Skills Centre will be appropriate in all medical schools of the future.

I also visited Sunnybrook Hospital with Dr Clare Holloway. Sunnybrook has an extensive Surgical Oncology Centre and I had the pleasure of meeting Dr Martin Yaffe who has one hundred and ten people in his imaging research group. We had a wonderful discussion on digital versus standard analogue image radiology for screening and dual reporting for mammography. We also spoke about the integration of MR imaging with ultrasound in the operating room in the same configuration. We discussed MRI guided needle localisation which is proving difficult as standard guidewire technology is not MRI compatible. I also met with Donald Plewes imaging research Professor and received a tour of the extensive and impressive research wing.

I then met Eileen Warner, a Medical Oncologist with a specific interest in hereditary breast cancer. I had a very interesting and stimulating discussion with her, particularly on MRI surveillance for BRCA1 and 2 mutation carriers. She described her recent study in detail to me which identified six invasive breast cancers on MRI in one hundred and ninety-six women with proven BRCA1 and 2 mutations or strong family histories. She felt that the addition of MRI to the standard triple assessments was very important and that it would be the screening investigation of choice for women with BRCA1 and 2 mutations and possibly those who are otherwise high risk.

I met Aaron Zeth, a surgical scientist who had a particular interest in breast cancer and indeed differential display which I have subsequently worked on in the Conway Institute in UCD. He had identified four hundred unique genes, two hundred of which were unknown using a subtractive coding technique. He also had an interest in the T2A10 ring finger protein which reacts with oestrogens and smad4. This was involved in TGFβ signalling and he was also interested in ETS transcription factors in bone (important in oestrogen receptor pathway).

Dr Wayne Johnson is a very well known in vascular surgery circles as he has been Editor of the Journal of Vascular Surgery for some time. He is an old friend of my friend, mentor and colleague Tom Corrigan (who does vascular and breast surgery at the Mater) as they worked together with Kakkar in London at the time of the formative peri-operative heparin trials. Dr Johnson was superb company and gave me great insight into how one runs an academic and clinical practice and the priorities.

Dr Richard Resnick is the incoming Head of Department of Surgery – a great achievement and onerous responsibility. He had recently been a James IV Traveller which he had greatly enjoyed and regaled me with an account of his visit to Britain and Ireland. An international leader in surgical education, he had many insights which I found educational.

On the final day of my Toronto visit I was honoured to be invited to the monthly combined faculty grand rounds which actually coincided with Dr Resnick's inaugural address as incoming Chairman of the Dept Surgery. The meeting was extremely well attended and I met such luminaries as Bernie Langer (past President Canadian College Surgeons), and Jane When, Surgeon in Chief Mt Sinai Hospital. Dr Resnick's address was preceded by a synthesis of the mechanisms for promotion within the University by the Chairman of the Promotions Committee Dr Robin McLeod. The interesting situation is the lack of tenure and for example that the chairman's position is for a five year term which is renewable once. Dr Resnick has reduced his surgical practice to 2 clinical days per week and has a budget of about $5million for his department. He presented a view for the future as well as an overview of the achievements of the previous year. As an internationally renowned educationalist his slides were very well put together and especially his concept of the chairman's office with achievements in research, education and clinical developments in the years ahead. His concept of a public/private initiative; funded sabbaticals and contact with the dept of health to raise money were noteworthy but not specific to Canada. Dr Resnick is an excellent communicator and certainly the Department of Surgery in Toronto seems to be in safe hands for the years ahead.

Promotion within the University is objective and a meritocracy and is dependant on demonstrated excellence in teaching, research record or clinical developments of international calibre. As a guide associate professorship is conferred on individuals who have demonstrated leadership at national level whereas full professorship is dependant on an international reputation. This insight is proving very fruitful for me right now as funding for medical education in Ireland is a constant source of concern.

The size of the Department of Surgery in Toronto is staggering, spanning 10 teaching hospitals with more than 250 faculty members. The research income is $28million, which is much bigger than most departments and rates Toronto in the top 10% of North America/worldwide universities.

The hospital setup in Toronto is very interesting and an extraordinary finding is the proximity of 4 hospitals to the University - the Hospital for Sick Children, Mt Sinai, Princess Margaret and Toronto General are literally beside each other or across the street. The management structure for the others has merged but Mt Sinai remains separate due to its Jewish ethos. Nevertheless there seems to be excellent co-operation between the hospitals and the breast services between St Margarets/Mt Sinai appear to be functioning in a very co-operative environment although there are no joint appointments in surgery.

The University of Toronto Medical School appears to be at the leading edge in several aspects of its training/education structures. Apart from the surgical skills laboratory, the surgical scientist programme is functioning exceptionally well and is attracting some of the top graduates from North America. This programme in general takes 3 years and allows the residents to take 2 years to write an MD or as appears from my interaction – 3 to do a PhD. Usually the first year is funded from the residency programme and the next 2 are often funded by grants. I had the opportunity to review 5 of the current 12 general surgery scientists (there are approximately 25 altogether across the surgical specialities). The projects being done span the fields of molecular biology, immunology as well as one interesting project by Tracey Asano (supervised by Dr McLeod) on the behavioural sciences doctor-patient interaction and its effects on colorectal cancer screening. The molecular biology projects included one on APC polymorphisms and genotype/phenotype concept (Sean Cleary); the discovery of a novel chromosome 2-6 gene transposition as a candidate for a pancreatic cancer specific gene (Morris Koozar/Steve Gallinger); mitotic regulator SGK gene in hepatocellular cancer (Michael Ko, Carol Swallow) and TLR4 receptor expressions in haemorrhagic shock/multiorgan failure (Kirya Poweres/Rotstein). The individuals involved were most interesting and I had a very valuable interaction with them one morning followed by lunch and a very interesting insights into their training programme.

San Antonio Breast Cancer Symposium
San Antonio, Texas

In December I travelled to the San Antonio Breast Cancer Symposium and from there I spent a few days in Houston at the MD Anderson Cancer Centre. The San Antonio Breast Cancer Symposium is a major international meeting with more than 5000 delegates. It bridges the clinical/scientific interface in breast cancer management and this year's meeting was memorable for updates on NSABP trials on node negative breast cancer from Dr Bernie Fisher, an overview on the impact of clinical trials from Prof Michael Baum (Bill McGuire Lecture) and a further update on the ATAC trial from Dr Buzdar with a symposium on aromatase inhibitors. Overall I found that there was little new from the clinical point of view as the trials of targeted therapies in the adjuvant setting are as yet immature. Interestingly though there appears to be a move towards hormonal intervention as the primary therapy in ER+ post menopausal US women making chemotherapy less important as standard in these patients and being backed up by the absence of an improvement in outcome by the use of chemotherapy in ER+ women aged over 60. In addition the ZEBRA trial was mentioned by Prof Baum showing equivalence of hormonal intervention and ovarian suppression to standard chemotherapy in pre-menopausal women. Similarly there was a discussion of the use of LH/RH agonists in patients receiving chemo in order to preserve fertility in pre-menopausal women.

One of the more interesting facets of the meeting was a lunchtime meeting on the management of difficult cases of early breast cancer. This involved a panel including Dr Gabriel Hortobagyi, Dr Monica Morrow, Dr Kent Osborne and Dr Daniel Hayes. In pre menopausal ER+ disease it was clear that 4 cycles of anthracyclines followed by 4 cycles of Taxanes and 5 years Tamoxifen was the preferred therapy. CMF was used in patients with second primaries who had had previous anthracyclines. There was some discussion about the benefits of Tamoxifen being reduced in patients who are ER+ but over expressed her2 (this has subsequently been borne out by the ATAC trial).

Another highlight of the meeting was an overview of molecular profiling of breast cancer by Dr Stephen Friend from Merck who has been involved with the Dutch group in the assessment of molecular profiling and outcome. He described the validation of the prognostic signature on a consecutive series of 295 patients in lymph node negative patients less than 55 years. He showed that the predictive power of gene clustering and prognostic signature outperforms the clinical parameters for prognostic indication. He predicted that in future the gene profile will tailor therapy.

Another clinical paper there I found very interesting was a large series of patients with DCIS from Cutuli et al in France. He observed the outcome of 1521 patients, 306 of whom were treated by mastectomy. 403 had conservative breast surgery and the remainder (812) had conservative surgery and radiation. The local recurrence rates were 1.6% post mastectomy, 26% following conservative surgery and 12.6% following conservative surgery and radiotherapy. Apart from reducing the incidence of recurrence radiotherapy also delayed the mean time to recurrence – the majority of recurrences after conservative surgery occurred between years 2 and 4 whereas with post radiotherapy it occurred between years 4 and 6 post-therapy. A proportion of those with local recurrence developed mets – 2/89 with in situ recurrence, 1/16 with micro invasive recurrence and 13/103 with invasive recurrence. Like in most other cases of DCIS half of the patients who developed recurrence had invasive disease. One of the important outcomes from this study was to suggest that the patients at high risk of recurrence should have biannual mammography and clinical assessment.

There was an excellent basic science section at the Meeting giving an overview of epithelial / stromal interactions in breast cancer development, role of integrins, matrix metalloproteinases and tumour vasculature/extracellular matrix. This was a very good overview and some of the more interesting points were that every tissue puts a signature on its vasculature using integrins and that this may be a means of developing targeted therapies.

Finally from the San Antonio Meeting there was an excellent symposium on genetics of breast cancer including BRCA1/2, CHK2 gene, and other familiar syndromes including Cowdens, Peutz Jeughers and Li- Fraumenii. I found the discussion on Peutz jeughers particularly interesting as I had recently treated a young patient with bilateral DCIS and Peutz jeughers syndrome. Judy Garber then gave an excellent presentation on women with BRACI/2 mutations which centred on the role of oophorectomy, prophylactic mastectomy and screening particularly the role of MRI. Some of the surprising data here was the potentially harmful effects of pregnancy and the increased numbers of interval cancers with time in patients undergoing MRI screening.

From the social point of view San Antonio is an excellent site for a meeting with the river walk area downtown being very nice. There seems to be a huge interest in the meeting from the pharmaceutical industry with numerous delegates from the UK being sponsored by Pharmacia and Astra Zeneca. I enjoyed meeting many of these old friends and had a couple of nice dinners with them. The Henry B Gonzalez Convention Centre is very well placed to host the large crowds and the meeting format is noteworthy because only a small fraction of the six hundred accepted abstracts (about 30) are chosen for oral presentation. The others are presented at poster presentation sessions where one can individually discuss pertinent issues at length with the authors. This I feel is a much better format than the multiple parallel sessions which are so plentiful at some meetings.

MD Anderson Cancer Centre
Houston

I then moved on to Houston, Texas to arguably the world's number one cancer centre at MD Anderson and had an excellent couple of days with Professor Eva Singletary and Dr Henry Kuerer who were very friendly and gave me an excellent insight into the workings of the institution. I was particularly impressed by the size of Houston which occupies 640 square miles and is the third biggest city in the USA (after New York and Los Angeles). MD Anderson is vast and has a turnover of more than a billion US dollars and made a profit of US$40million in 2002.

I enjoyed spending a morning with Dr Singletary at her new patient clinic where she saw 6 newly diagnosed breast cancer patients. They were all complex and most were referred from out of state and flew into Houston to see her. With regard to local patients, they were diagnosed at the breast cancer prevention centre which is staffed by general/family practitioners. On the day I was there multidisciplinary working left a little to be desired as there were problems with obtaining mammograms for the clinic. This apart, it was a very stimulating clinic and we had an excellent discussion about the cases.

Several basic tenets of current breast cancer management at MD Anderson were apparent both at the clinic and at the Multidisciplinary Meeting later in the day – neoadjuvant chemotherapy for the vast majority of breast cancer and TRAM flap reconstruction for patients undergoing mastectomy. This has implications for breast surgeons and there seems to be some tensions due to need to see more new patients, scheduling of OR time with plastic surgery and therapeutic strategy for patients. The issues with regard to neoadjuvant therapy were discussed at the MDM as were the difficulties in diagnosing local recurrence following TRAM flap reconstruction where (unlike the forms which push the breast/chest wall forward) the reconstruction overlies potential site of recurrence on the chest wall. The lack of survival advantage or increased breast

conservation rate in large cancers seems to make the concentration on neoadjuvant therapy somewhat questionable.

I had time in the operating room with Drs Kelly Hunt and Henry Kuerer on successive days. There were several issues from MD Anderson which influenced my thinking – the location of the Pathology Department within the OR. This is simply the best interactive environment that I have ever come across. Specimens were inked extensively according to a scheme and taken to the pathology lab immediately either by the attending or the resident. The wire guided specimens could be sectioned extensively and the margins commented on by the pathologist. Frozen section was available when needed and the surgeon was given advice on which margin needed re-excision in real time. Having the pathologist and surgeon work closely together like this gave a new meaning to the concept of multidisciplinary working. It also facilitated assessment not just of the breast cancer specimens but also of the sentinel node where imprint cytology was readily available.

The breast cancer specimens were sectioned perpendicular to the long axis at about 4 mm intervals and were re-xrayed prior to processing thus facilitating assessment of margins and also allowing radiological and pathological correlation.

I had a lot of contact with Henry Kuerer during my visit. He was extremely friendly and we had much discussion on breast cancer management including sentinel node, conservation, mastectomy and reconstruction and clinical trials. Henry is very active in the American College of Surgeons Oncology Group and in addition to discussion on Z10 and Z11 sentinel node trials we had an interesting interaction about breast cancer predisposition. One of the patients that he was operating on had neurofibromatosis and I had performed a mastectomy and reconstruction for a patient with neurofibromatosis at home in Ireland. The resident was most interested in the NFI gene and its putative role in breast oncogenesis.

I found the trip to MD Anderson worthwhile. It was interesting to see the signs everywhere emphasising MD Anderson as the no 1 Cancer Centre in the USA (and by implication the world). It was also eye opening to see its belief in clinical research as a means of retaining its position and the importance of recruitment into trials as the way forward. I enjoyed my time there and felt that many of the basic tenets of the institution were applicable anywhere though perhaps not on the same scale.

Epilogue

The aim of the James IV Association is to foster the exchange of knowledge among the distinguished surgeons of those countries in the world wherein the English language is spoken. I found my travelling scholarship to be a very effective means of addressing issues which pervade surgical practice throughout the world.

Looking back on the itinerary I chose I do not think that I would change anything. The clinical pressures at home meant that I crossed the Atlantic 3 times and visited 6 centres of excellence and 2 international oncology conferences. The greatest value was the time that I spent one on one with key surgical oncologists, heads of department and researchers in their own environment being able to discuss practical day to day issues regarding surgical education, clinical development, research funding and staff recruitment and retention.

The experience gained has practical applications for me and has helped me in personal development and ability to develop others. I hope to be able to host James IV Travellers in my own Department in the future and look forward to enhancing the James IV experience for others.

Appendix 1

AGENDA

Tuesday, April 9th, 2002

Memorial Sloan-Kettering Cancer Centre

7.30 am	Guest Speaker at Surgical Breast Service Conference (2 talks) "Breast Cancer Screening" "Molecular Aspects of Breast Cancer Management" Rockfeller Research Laboratory
8.30 am.	Meeting with Kimberly Van Zee Associate Attending, Breast Service MSKCC
10.00 am	Surgery with Drs Brennan & Blumgart in OR
2.00 pm	OR with Dr Blumgart.

Wednesday, April 10th, 2002

Memorial Sloan-Kettering Cancer Centre

9.30 am	Meeting with Jeff Boyd, Ph.D. Director, Breast and Gyn Laboratory Rockefeller Research Laboratory
1.30 pm	Meeting with Murray Brennan, M.D. Chairman, Department of Surgery
4.00 pm	Chairman's Conference

AGENDAh
Thursday, April 11th, 2002

Memorial Sloan-Kettering Cancer Centre

7.30 a.m.	Breast Cancer Medicine Service Meeting Rockefeller Research Laboratory
9.30 am	Meeting with Virgilio Sacchini, M.D. Associate Attending, Breast Service, MSKCC
10.30 am	Observe Dr Patrick Borgen in Surgical Day Hospital

Friday, April 12th, 2002

Memorial Sloan-Kettering Cancer Centre

Michael Osborne MD
Strang Cancer Prevention Centre

Patrick Borgen MD, Chief Breast Service

Kevin Conlon, MD

Appendix 2

AGENDA

Monday April 15th 2002

Robert Wood Johnson Medical School

8.00 am	Breakfast with Ramsey Foty, Ph.D. Assistant Professor, Division of Surgical Sciences 2 Albany Street Restaurant (meet in front of restaurant)	
9.30 am	Thomas Kearney, M.D. Assistant Professor, Division of Surgical Oncology O.R. – Breast Cancer patient (mastectomy)	
12.00 pm	Stephen F. Lowry, M.D. Professor and Chairman Department of Surgery	MEB 504
12.45 pm	Margaret A. Schwartz, M.D. Assistant Professor, Division of Surgical Sciences	MEB 502
1.30 pm	Lunch with Roderich Schwartz, M.D., Ph.D. Assistant Professor, Division of Surgical Oncology	CINJ 1103
3.00 pm	Siobhan A. Corbett, M.D. Assistant Professor, Division of Surgical Science	MEB 434
5.00 pm	Deborah L. Toppmeyer, M.D. Assistant Professor, Division of Medical Oncology	CINJ 2046
6.00 pm	Dinner – Stage Left (Drs. August, Kearney, Trooskin, Corbett and Lowery)	

AGENDA

Tuesday April 16th 2002

Robert Wood Johnson Medical School

7.15 am	Pick up by Dr. August at Hyatt Regency Hotel	
7.30 am	Division of Surgical Oncology pre-op conference	
8.30 am	Breast Conference	
10.00 am	Attending rounds – Dr. Goydos	
11.00 am	David Gorski, M.D., Ph.D. Assistant Professor, Division of Surgical Oncology	CINJ 3040
12.00 pm	Lunch and Presentation Topic: ***"Clinical and Molecular Insights into Breast Cancer Detection and Management"***	CAB 2117
2.15 pm	David A. August, M.D. Associate Professor and Chief Division of Surgical Oncology	CINJ 2011
3.00 pm	Michael Reiss, M.D. Professor Medicine, Molecular Genetics and Microbiology, Division of Medical Oncology	CINJ 2007
3.30 pm	William N. Hait, M.D., Ph.D Professor Medicine and Pharmacology Director, Cancer Institute of New Jersey Associate Dean for Oncology, Programs	CINJ 2002
4.15 pm	Depart for New York	

Appendix 3

AGENDA

Monday, September 23rd, 2002

Vancouver

Evening	Arrive in Vancouver

Tuesday, September 24th, 2002
Vancouver

9.00 am	Dr Garth Warnock, Head Dept Surgery
10.00 am	Observe Breast Cancer Reconstruction with Dr Peter Lennox at UBC
12.00 pm	Hepatobiliary / Pancreatic Oncology Conference Radiology Conference Room, Jim Pattison South ground fl Drs Chung, Scudamore, Ho
1.30 pm	General Surgery Residents (Dr Caron – Chief) Centennial Pavilion – East 8 / West 8 for case reports

Wednesday, September 25th, 2002
Vancouver

07.00 am	Grand Rounds
08.30 am	OR with Dr McGregor
1.30 pm	St Paul's Hospital tour – Dr MacFarlane, Dept Surgery
4.00 pm	Trauma Conference – Lauener Room (cafeteria) JPPS 2
7.00 p.m.	Dinner with General Surgery Group at Seasons in the Park

AGENDA

Thursday, September 26th, 2002

Vancouver

7.00 am	Present Molecular Insights on Breast Cancer Management Dept. Surgery Seminar Room – Research Rounds
8.00 am	Or with Dr Davis, Head Surgical Oncology
1.30 pm	Tour Nuclear Med PET scanner with Dr Dan Worsley
7.00 pm	Dinner at Monk McQueens with Drs Davis, Coleman, McGregor, Cheifetz & Gelmon

Friday, September 27th, 2002

Vancouver

8.00 am	Dr Hays Room
8.30 am	Dr Rona Cheifetz, General Surgery
12.00 pm	Attend melanoma rounds, BCCA
1.30 pm	Breast Cancer Group, 2nd floor, conference room BCCA Present "Breast Cancer Screening in Ireland"

Saturday, September 28th, 2002

Vancouver

9.00 am	Tour of Vancouver

Appendix 4

AGENDA

Tuesday October 1st 2002

Toronto

3.00 pm Arrive in Toronto

7.30 pm Dinner with the Breast Group

Wednesday October 2st 2002
Toronto

8.00 am Operating room at Mount Sinai/Princess Margaret Hospital
Breast Group

11.30 am Mt Sinai Hospital
Irene Andrulis
Director, ON Cancer Genetics Network
Senior Investigator, SLRI

1.00 pm Seminar at Samuel Lunefield Research Institute
"Molecular Insights Into Breast Cancer"
Dr Steve Gallinger

2.00 pm Mt Sinai Hospital Marvelle Koffler Breast Centre
Pamela Goodwin
Marvelle Koffler Chair in Breast Research
Breast Centre Director

4.00 pm Marvelle Koffler Breast Centre
Tumour Review Board Rounds ***"Breast Cancer Screening in Ireland"***

7.00 pm Dinner at Veni Vidi Vici
Dr Robin McLeod

AGENDA
Thursday October 3rd 2002
Toronto

10.00 am Mt Sinai Hospital
Robin Miles

12.00 pm Sunnybrook Hospital
Surgical Oncology

7.00 pm Sunnybrook Hospital
TORSO Rounds
Dr Frances Wright

Friday October 4th 2002
Toronto

7.30 am Mt Sinai Hospital University Rounds
Department of Surgery

9.00 am Surgical Scientists Presentations
0900 Kouros Moozar
0930 Tracey Asano
1000 Sean Cleary
1030 Kinga Powers
1100 Michael Ko
11-12 Discussion

12.00 pm Lunch with Surgical Scientists
Matahari Grill