UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Medical Alumni and Faculty

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Introduction

Welcome to the 12th newsletter of the UCC Medical Alumni and Faculty Association

I am delighted to represent the UCC Medical Alumni and Faculty as Chairman of the Alumni Committee.

Dr. Will Fennell, my predecessor, along with the Committee, deserve both thanks and praise for their hard work over the past few years, for organising the Annual Scientific meetings, publishing the newsletter and staying in touch with Alumni.

I would like to encourage all UCC Medical Alumni and UCC College of Medicine and Health Staff to actively get involved with us, and let us know your up to date contact details. For those with special anniversary years of graduation, it is a great idea to plan your class reunions around the Scientific Meeting which will be held on Thursday Sept 11, 2014, in Brookfield Health Sciences Complex, followed by the Annual Dinner in the Aula Max. It is a wonderful opportunity to renew acquaintances with your own classmates and those of other years, as well gaining valuable continuing medical education "points".
Returning classes have been both impressed and keenly interested to see the developments in UCC and quick tours of Brookfield, the Western Gateway Building, the Glucksman Gallery and main campus can be arranged. Put the date in your diaries quickly!!

Prof. George Shorten achieved a great deal as former Dean, and the School has now grown to nearly 1000 students, including the Direct Entry and Graduate Entry programmes. Recently, our Alumni from Malaysia have grown to significant numbers, and we also have the first 2 years of the Graduate Entry Alumni, many of whom originate from North America, expanding the influence of UCC School of Medicine abroad. We have many distinguished alumni working in all fields of medicine, or prominent in other areas of public life. We would like to maintain and build on these links for the benefit of the school and its alumni. I wish Prof. Mary Horgan every success in her term as Dean.

The newsletter includes several articles on recent developments inthe School, items of interest, and some highlights of the Scientific Conference.

Sadly, we have been informed of the deaths of former teachers and colleagues in the past year, and I would like to thank those who have kindly prepared appreciations. Our sympathy goes to all those who have lost loved ones.

The Committee look forward to meeting as many Alumni as possible, and hearing your news. Special thanks to Rachel Hyland and Bridget Maher for preparation of the newsletter.

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See you in September! ■

Prof. Mary Horgan

Welcome Medical Alumni 2013

I have had the opportunity to reflect on the past decade of the School of Medicine in UCC. The changes cover the spectrum in education, research and clinical care.

The campus has expanded beyond recognition with the building of state of the art teaching facilities at Brookfield Health Sciences Complex and Western Gate Building that has facilitated the expansion of Departments in the School of Medicine and the College of Medicine and Health. The School is proud of its world class research groups whose excellent track record has been acknowledged by significant Science Foundation Ireland funding.

The development of the Hospital Network has formally partnered UCC with the South/Southwest Hospital Network. The School of Medicine warmly welcomes Waterford to the network and looks forward to the education, research and innovation opportunities this partnership provides.

The School took advantage of opportunities in the good times to develop the campus but continued to successfully seek out other opportunities in leaner times particularly in medical research.
And the developments continue!

I am privileged to have been appointed to the role of Dean of the School of Medicine in November 2013. I look forward to the further development of the Medical Alumni and its network in this world of modern communication. ■

The Hunt For - *DICER 1*

One day in 2010, ten years after retirement from my 30-year tenure as Chief Pathologist/Laboratory Director at a Toronto hospital, I got a message from my old Department. A non-staff doctor had phoned the lab asking to speak with me; he left his phone number. I phoned the number and was mildly surprised to find myself speaking to a cancer cytogenetics researcher at McGill University Medical School in Montreal. He said that his group was researching a mutation of a gene named *'DICER 1'* which they suspected played a role in the development of certain rare tumour combinations which seemed to have a genetic predisposition. He had read a paper I had published in 1981[1] on an unusual combination of lesions in a young girl-she had presented with a masculinising ovarian neoplasm, then known as an arrhenoblastoma, now classified as Sertoli-Leydig Cell Tumour (SLCT). A short while before this, she had been operated on for benign thyroid nodules. On examining her family history, I noted that several of her relatives had a history of thyroid nodules. A review of the literature revealed a report[2] of such a combination, apparently the first time that this association had been described. It seemed appropriate to write up the findings which I did, in association with her endocrinologist and my good friend and colleague, Dr. Douglas Wilansky. In those relaxed times, one of the pleasures of publishing lay in counting the number of mail requests for reprints, hopefully from important places with interesting stamps affixed. As I recall, we only received one such request. There was also a letter to the Editor that disputed our claim that the combination was another genetically-determined endocrine organ tumour complex. Our observations caused no ripple and sank into obscurity.

I was therefore intrigued to discover that at this late juncture, someone had actually read the article. The caller was Dr. Marc Tischowitz; he asked if any pathological material was still available. Modern techniques can harvest useful genomic data from unlikely sources, even from ancient glass slides gathering dust in old files. Marc told me that very few similar cases had been reported and that any material could prove invaluable in investigating their thesis of a germline mutation of *DICER 1* playing a causal role. Germline mutations can be passed along from one generation to the next and so are of immense interest to disease researchers. The *DICER 1* gene codes for a protein that acts as a molecular ruler to ensure pre-mRNAs are cut to the correct length.

My patient had been operated on at least thirty years ago; the cut-off dates for retaining old records, path reports and blocks/slides had long passed. Everything from that era had been discarded. I told Marc he was out of luck. One evening at dinner, I was telling the story to my wife Elizabeth, MB 1959. In response to my comment that no records were available, she suggested that I check out the contents of an old packing box I had stored in the garage after cleaning out my desk on retirement ten years before. I suspected that this was a ploy to remind me of her many fruitless requests over the years to dump the box. Nevertheless, I had a look. I was astonished to find a slide folder containing a Kodachrome of the ovarian tumour with its unique Surgical Pathology accession number from 1979, as well as some glass H & E slides of both the tumour and thyroid nodules. I then recalled that I'd read a paper on the case to the Canadian Association of Pathologists' meeting held in St. John's, Newfoundland, in 1980. As I remember, my presentation at the time was received with what

I can only describe as polite apathy.

That didn't bother me one bit at the time as my main objective in going to the conference was to enjoy the scenic delights of that somewhat Irish part of Canada, and to dine on their fabulous fresh lobster. Have paper, will travel, was the motto of those of us who sought to write off trips to pleasant places as a business expense.

Armed with the unique accession number, I went to the Hospital Medical Records computer but drew a blank. No records that old had been uploaded when computerisation took place several years before. On the outside chance that I might have reported the ovarian tumour to the Ontario Cancer Registry, I sent them an email with the number and asked them to check. Their response was that basically there wasn't a hope, quickly followed by another message saying they had found a copy of my original pathology report, which they forwarded to me. Now at least, I had the patient's name, age, Hospital chart and Health Insurance numbers. Alas, further searches through various data bases, including the Provincial Health Plan, drew a resounding blank. This worried me as I thought the patient may have died. Some arrhenoblastomas can behave in an aggressive fashion; I had given her a good prognosis based on the cellular characteristics of the growth. I hoped the lack of data may have meant that she had married and switched her insurance cover to her spouse's account.

On looking again at the copy of the original report, I noted that a second surname had been handwritten in beneath the original patient identity data which is directly transcribed from the Pathology requisition form accompanying the original specimen when it arrives in the lab from the operating room. To this day, I don't know how, when or by whom this was done. I entered this second name into the hospital computer and got a more recent, but still quite old entry containing my patient's first name and the same date of birth but nothing else. I presumed my patient had married, which relieved me somewhat; at least my good prognosis was correct. However, I realized I had reached a dead end. Shortly after, while pursuing my hobby of the true history of the Old West, (specifically the Lincoln county, New Mexico, troubles [3] of the late 1870's which gave the world that enduring ornament W.H. McCarty aka Billy the Kid), I was cruising the website of Frederick Nolan, pre-eminent historian of the era. I read that many years ago, he had found an old lady in London, a sister of Billy's boss John Tunstall, by dialling all the Tunstalls he could find in the London phonebook. This simple but insightful expedient resulted in a treasure trove of historical material coming to light. The murder of Tunstall in 1878 triggered the conflict that launched Billy on his wild career and subsequent rise to global legend status. I immediately Googled Canada 411, entered the second surname on the old path report, found five Toronto-area entries and started making my phone calls. The first person who answered was my patient's mother-in-law. Yes, the patient was alive and well, had married and had a family, here's her number. I called her, explained who I was, how the McGill researchers were keen to contact her, and asked if this would be OK. Sure, she said. I told Marc Tischowitz, who was surprised and intrigued by the turn of events; I think he made a passing reference to Sherlock Holmes. I told him that it was my wife's advice to check out the contents of the old box in the garage which had put me on the right track,

thus again proving that wives are ALWAYS RIGHT. He agreed with me, and said that in his expert opinion, this was due to a gene on the X chromosome.
The outcome of this was that his team tested my patient and her relatives and found that several family members had the suspect *DICER 1* mutation. Together with their other material, this gave them enough evidence to make a scientific case for the mutation playing a significant role in the development of this rare familial tumour combination, as well as in familial multinodular goitre per se[4]. On a practical level, it meant that carriers of the mutation were offered genetic counselling and could be monitored for the development of associated lesions. The hunt for *DICER* 1 was over. ■

1) O'Brien PK, Wilansky DL. Familial thyroid nodulation and arrhenoblastoma. Am J Clin Pathol. 1981; 75(4) : 578-581.

2) Jensen RD, Norris HJ, Fraumeni JF. Familial arrhenoblastoma and thyroid adenoma. Cancer 1973; 31: 1440-1450.

3) O'Brien Paul. The Lincoln County War. Giant Beaver Publications, Toronto; 2010.

4) Rio Frio T, Bahubeshi A, Kanellopolou C, et al. Dicer 1 mutations in familial multinodular goiter with and without ovarian Sertoli-Leydig cell tumours. JAMA 2011; 305(1): 68-77.

Dr. Fergus Moylan

Is it a Boy or a Child?

One of my required rotations in medical school was two months in a maternity unit. In addition to the usual expected obstetrical services, there was an anesthesiologist on call for the more complicated deliveries. Since such events are by their nature unpredictable, there was always the occasion when his rush to attend a delivery was greeted by lusty cries from the other end of the delivery suite announcing that all was well and had been managed without his services. In an attempt to either deflect attention from his failure to provide pain relief for the happy event, or to handle the accusatory looks that he might encounter, he would inquire of the nurses: "Is it a boy or a child?" While I was always amused by this little scenario, I did notice that the nurses were less so.

Later, when I related these events to my mother who had grown up on a farm, she explained that girls were a limited liability on a farm since they could neither work it nor inherit it, thus accounting for the wording of the question: "Is it a boy or a child?" Girls were expected to go off and become nurses. That explained a lot.

To further illustrate the state of affairs in mid-twentieth century rural Ireland, she told me a story involving my father. As a dispensary doctor he was expected to be available for home deliveries. On one such occasion he was called to a farmer's wife who had already delivered six girls. When he eventually emerged with the seventh, in an attempt to break the tension, he asked the anxiously awaiting family: "Will you rear it?"

Eventually their prayers for a boy were answered. Understandably, there was tremendous excitement which sustained the family for months. One day while shopping in the local village, the father was asked: "Who does the little fellow look like?" To which he answered: "Sure, we haven't looked at his face yet!" Though, I doubt, as is often assumed, that times were simpler then, the questions were certainly simpler.

More often than not, when a baby is born the first question asked is not: "Is it OK?" or "Is it breathing?" but "What is it?" So, before it is anything, its sex must be established. Needless to say, a baby whose sex cannot be assigned at birth has an essential part of its identity suspended, a truly shocking event for any family. Though an uncommon event, even when all does go well, it may not be the end of the story.

The physical definition of the sex of a child is based upon its genetic template. However, the presumption that a genetically normal female (46XX) mating with a genetically normal male (46XY), each contributing one haploid cell (23X on the maternal side, 23X or 23Y on the paternal side) will result in either a genetically normal diploid or zygote (46XX, female) or (46XY, male), and that this in turn will result in a phenotypical female or male is only true in 98.3% of cases. In addition, the ability of the embryo to respond to the cascade of stimuli initiated by its genetic programing and the hormonal milieu it is exposed to will further influence the outcome.

The process involves four factors: the sex chromosomes, the anatomical and functional development of the internal organs (ovaries and testes), external organs (breasts, vagina and penis), which in turn must be capable of maturing into adult functioning organs, and finally the psyche, also referred to as the gender. Since there is a lack of unanimity in terminology and classification of the multiplicity of disorders, it is necessary here to try to clarify some of the issues.
The terms Sex and Gender, though often used interchangeably, are not quite the same. Sex is used to describe biological categories while gender is used to refer to social/cultural categories. For example, there is a significant difference between sexual roles and gender roles.
The term "intersex," though in common use to describe those caught in the interface between male and female, tends to be favoured by those affected but not by those who study the issue. In addition, the "intersex" community resents being seen as constituting a disorder or a disease, preferring instead to see themselves as unique. Likewise, the term "ambiguous genitalia" is unacceptable and in recognition the scientific community now uses either "Disorders of Gonadal Dysgenesis" or "Disorders of Sexual Development" (DSD), the preferred term. Gender issues, formerly referred to as "transsexual" are now called "transgender." The diagnostic term "gender identity disorder" has been replaced by "gender dysphoria."

Under normal circumstances the zygote has no sex. It divides and multiplies, developing into an embryo. The embryo has an undifferentiated gonad and all the cellular

components for either male or female development. However, should anything go wrong it is automatously programmed to develop into a female phenotype. Oestrogen drives the embryonic cells down the female pathway. Because the female embryo is autonomous, it is anatomically complete even before the full development of the ovaries. Testosterone drives the process down the male pathway. To prevent the development of a female, it is necessary to introduce a Y chromosome and its SRY gene locus. It is this gene that determines whether the outcome is either male or female. Under its influence the undifferentiated gonad secretes two hormones, testosterone and mullerian- inhibiting hormone (MIH). The Mullerian cells account for the female line of internal organs e.g. Fallopian tubes and uterus. The secretion of MIH removes them from all further consideration. Testosterone enters the genital tissues where it is converted by enzymatic action into dihydrotestosterone (DHT), which is a considerably stronger androgen. The male genital cells develop in turn, being sensitive to its androgen effects. By 7 weeks gestation the testes must be organized to secrete testosterone and MIH so that by 12 weeks the male anatomy is complete. Testosterone, in addition to the above, is thought to have an imprinting effect upon the brain which will subsequently establish the sense of maleness (gender).
Finally, the child is identified at birth as either a boy or a girl and when old enough to understand the difference, they in turn are informed of their gender. This knowledge will give them the license to exhibit the behaviour appropriate to that gender. Any failure along the way will result in a disorder of development.

There are the two typical examples of chromosomal abnormalities in clinical medicine: Turner's Syndrome (45XO) and Klinefelter's Syndrome (47XXY). In Turner's Syndrome there is a failure to develop functioning ovaries due to a defect in the X chromosome, resulting in nonfunctioning streak gonads. Mosaicism, where some cells are a mixture of 45XO and 46XX is common since many of the 45XO cells die off. In Klinefelter's Syndrome there is a combination of hypogonadism, gynaecomastia and eunochoidism.
Mosaicism, where there is a mixture of cells within the tissues, is not uncommon. What is uncommon, at least in humans, is chimerism. This is the fusion of two separate zygotes or embryos, one male and the other female, resulting in portion of the foetus being male and the other female (hermaphrodism).

Hormonal defects can be either total or partial and the effect on the phenotype is proportional to the severity of the defect.
The most familiar hormonal failure in the female is congenital adrenal hyperplasia where an enzyme defect in the foetal adrenals results in increased production of testosterone (with decreased production of cortisol and aldosterone) and virilization of the external genitalia. Maternal hormones, progesterone, either iatrogenic or excessive production, can have similar effects.
Enzyme defects in the male can cause a failure in testosterone production, failure to convert testosterone to dihydrotestosterone or failure of androgen receptor molecules within the cells to respond. Any of these will result in feminization of the fetus. There are two classic examples.

The first involves an autosomal recessive condition whereby there is a deficiency in the enzyme 5-alpha-reductase (5-ARD) which is responsible for the conversion of testosterone to DHT. This condition which occurs in small isolated communities in The Dominican Republic, Turkey and New Guinea where the possibility of consanguinity is increased, predominately affects males. Though, genetically 46XY, there is a failure of the male foetus to become virilized, resulting in microphallus, cryptorchidism, hypospadias and a blind ending introitus. Wolffian duct differentiation is all normal except for a small prostate. The embryonic secretion of MIH is normal so there is no uterus or Fallopian tubes. Because the combination of the hypophallus and the pouch look like cliteromegaly with a vagina, the genetic male is raised female. However, partial virilization may occur at puberty when there may be an increase in type 1 enzyme activity. It is then that the confusion becomes apparent. (In "Middlesex" by Jeffrey Eugenides, winner of the Pulitzer Prize in Literature, the protagonist has 5-ARD). The differential diagnosis includes ten different conditions, attesting to the complexity of DSD.

Failure of the androgen receptor molecules within the male embryonic cells can be either partial of complete. This is referred to as Testicular Feminization Syndrome or "Complete Androgen Insensitivity." The result is a genetic male (46XY) with phenotypical female external genitalia.

In summary, genetically male infants can be born with female phenotypes and genetic females born with male phenotypes.
Evaluation of these children is complex because there may be mosaicism of the chromosomes resulting in a mixture of ovarian and testicular cells within the same individual, while partial versus whole enzyme defects can result in either minor or major abnormalities.
Chromosomal analysis includes evaluation of the total number, isolation of the SRY locus and the presence of Barr bodies (only one X chromosome is activated at conception, all others are deactivated, appearing as clumps of DNA within the cell. These clumps are referred to as Barr bodies after their discoverer). An abdominal ultrasound will identify the presence or absence of intra-abdominal organs, while a genitogram will demonstrate what is involved in a vaginal pouch. Laparoscopy and biopsies will help to define the identity of the abdominal organs. Hormone levels will cast light on where the enzyme block lies.

Since the issues of DSD are social emergencies for the families, there is considerable pressure to establish the sex as soon as possible. Forty years ago, the approach was to identify the sex of the infant before leaving the hospital and initiate correction. To temporize, the baby was usually given a gender ambivalent name such as Toni/Tony to minimize any readjustment. It was also felt that a sexually inadequate female could function better in society than a sexually inadequate male. When the sex was unclear, the bias was to assign it as female and raise it as such. In some cases, this had disastrous results since it did not take into consideration the child's gender. The practice today is to suspend major surgery until about 5 years when the child's gender, based on its behavior, will be more apparent.

The issue of gender has become the focus of much attention not just in the scientific community but also in the general media. Transgender or gender dysphoria is a feeling of being trapped in the wrong body and it is estimated to occur in about 1 in 10,000 males and females. But that is where unanimity ends. Even in institutions that specialize in the condition, there remain considerable reservations as to the diagnosis and treatment. Certain things, however, are becoming clearer. The younger the individual exhibiting signs of cross-gender behaviour, the more likely that the diagnosis is correct. Gender variance in adolescence and the processing of emerging homosexual desires in the younger child may both be grounds for feelings of gender confusion. Transgender surgery is radical, irreversible and often inadequate, especially in what is referred to as FTM (Female to Male) correction where building a phallus is expensive, difficult and often ultimately disappointing.

MTF correction, by contrast, is relatively inexpensive. However, in both situations there is an undesirable loss of tissue sensitivity. Current thinking is that surgery should be deferred until the child has reached the age of consent. In the interim, gradual transition can be initiated by hormonal blockage of the onset of puberty and in the case of FTM, binding of the breasts to reduce growth and produce the more desired appearance. However, the "intersex" community has ambivalent feelings for what is referred to as "bottom" surgery and many prefer to be left within their uniqueness.

It would be remiss to discuss the identity of the individual purely on the basis of sex and gender. The issue of sexual preference is a distinct component which helps to define a group of people in which one is likely to find fulfilling emotional, romantic and sexual relationships. Although sexual preference is seen as a continuum, three basic groups are recognized: heterosexual, bisexual and homosexual. Female homosexuals are referred to as "lesbian", male as "gay" and bisexuals as "bi" (these are usually grouped with transgender and referred to as LGBT). There is good reason to believe that there is a genetic basis to homosexuality because of a 52% concordance within homozygous twins and a high familial incidence. Though homosexuality is no longer viewed as a diagnosis but as a sexual preference, there are a couple of points that require clarification. Homosexuals can enjoy heterosexual sex but they cannot establish a satisfactory intimate relationship with the opposite sex. In addition, there is a commonly held belief that paedophilia is part of homosexuality. While paedophiles may be disproportionally homosexual, the vast majority of boys molested are molested by heterosexual males.

Though sex, gender, sexual preference are all deeply private matters, they do enter the forum of public discussion. The sexual preferences of many of the giants of Art and Literature maintain a fascination for biographers, ostensibly to cast light on their work. One arena where the sex of the individual has reached Olympic proportions is in the Olympics themselves.
Throughout most of the 20th Century, questions have been raised about the sex of certain female athletes. The International Olympic Committee (IOC) has sought ways to detect males masquerading as females. Certificates of gender and "nude parades" were introduced in the 1960s. These were followed by screening the athletes for Barr bodies (this approach was basically flawed since those with Turner's Syndrome (45XO), though female, may have no Barr body, while those with Klinefelter's Syndrome (47XXY), who are male, have a Barr body and thus pass the test). Finally, in the 1990s, a polymerase chain reaction (PCR) test was developed to detect the SRY locus. In the 1996 Atlanta Olympics, 3,000 female athletes were screened for the SRY locus. Eight were positive. Seven of these had complete androgen insensitivity (Testicular Feminization Syndrome). The eighth had 5-ARD. All were genetically male but phenotypically female. And none of them were aware of their condition.
Because of this experience, the IOC abandoned screening since it was clear that none of the athletes were aware of their conditions and were only competing within the gender assigned to them at birth.

So where are we today? On the political front, there have been increasing appeals, at least in the Western Hemisphere, for recognition of same sex marriage. While a wave of acceptance is growing amongst the younger generation, there has been considerable resistance from religious conservatives. This has an ironic twist since in America, this constitutes a sizeable segment of the Black community, no stranger itself to discrimination. In a matter that lends itself to those seeking the moral high-ground, there has been a strange silence from certain high profile conservatives. Seemingly, there is a very personal epiphany when a much loved son or daughter reveals their homosexuality.
In recent years, advances in Medicine have transformed the previously rather isolated existence of the gay community, into a far richer family experience to parallel that of their straight brethren. As an illustration of this, I found myself a few years ago consoling a member of my staff who had just learned that her daughter was lesbian. Shortly afterwards, the girl married another woman, marriage being permitted in the state. Wishing to have children, they persuaded a brother-in-law to be a sperm donor. In just a few years, my nurse went from being inconsolable to being a blissfully happy grandmother of twins. Since the genetic pool involved Caucasian and Asian blood lines, the twins reflect both family genes, facilitating an immediate acceptance from both grandparents; grandparents, who, under ordinary circumstances, would have had no reason to blend and bond.

But not all the news is good. Over great swathes of the globe, from North Africa through Asia, the age-old question is still being asked: "Is it a boy or a child?" A clear "boy preference" prevails especially in India and China where abdominal sonograms are used to establish the sex of the foetus to facilitate selective abortion. Also, mortality rates for young girls continue to parallel poverty levels, attention to their nutrition and health needs being preferentially ignored.
The good news is that the response to the call for gender equality in education has resulted in a significant fall in fertility rates and a concomitant fall in poverty. In Bangladesh, family size has fallen from nearly 7 to 2.2 (2.1 being the rate to sustain the population). Similar falls have been seen in most of India. It has been postulated that the fall in the fertility rate in China (which is currently below replacement level), might have been achieved without resorting to its draconian law of "one-child policy" and its resultant carnage for baby girls. The change in family size has been most striking in Brazil where television presentation of family dramas has opened the possibility of other life-style options. As a consequence, "the factory is closed" has entered its vernacular.

Recently, while writing up the admission of a patient in the emergency room, I was privy to a nurse waxing eloquent about how great her teenage son was. Maybe it was because it was 3 o'clock in the morning, or I was all too familiar with mothers going on about how lucky they were, followed by a litany outlining their son's inexcusable behaviour, or maybe it was just me needing to burst her bubble, so I asked her:
"Does he have a girlfriend?" When she answered in the negative, I said to her with a straight face:
"So he's gay." She burst out laughing and said:
"No, he's not! And even if he were, we would still love him."
I guess we have come a long way from the days when the burning concern was who would be there to take over the farm. ■

Alumni Interview – Prof. Tony Gallagher, Professor of Technology Enhanced Learning

What influenced your decision to return to Ireland?

I promised my wife, Liz, that as soon as our children were school age, we would return to Ireland. Conor (our eldest boy) was three months old when I went to work at Yale in 2000. Cullen, now 9, was born in Atlanta in 2004. I think Irish people do not realise the high quality of so many aspects of life here. I always knew I would come back to Ireland.

Cork and UCC

Over the years, I have been greatly impressed by people from Cork and UCC. Prof. Ted Dinan (Psychiatry, UCC) was a young consultant at St James's Hospital in Dublin when I was doing my PhD on psychological interventions for chronic auditory hallucinations in schizophrenia. Ted was very helpful and had it not been for him, I probably wouldn't have a PhD.

I met Professor George Shorten and Dr.. Peter Kearney (CUH) at conferences after I had returned to work at the RCSI. With both, it was a meeting of minds. We talked for hours about simulation and a whole new approach to training, skill acquisition, skills assessment, device development and implications for modern medicine. This led to numerous discussions about how precisely this new paradigm would impact on Medicine and Healthcare.

Professor Gerry O'Sullivan

In 2005, (the late) Prof. Gerry O'Sullivan introduced my talk at the RCSI Millin meeting on proficiency-based progression (PBP) simulation training for surgeons. Gerry immediately grasped how important and fundamental this approach was for surgery and for medicine and that it had ramifications far beyond training. For the two years of his Presidency at RCSI, I tutored Gerry on PBP and we discussed the latest research and ideas for future research. This was the backbone of our book 'Fundamentals of Surgical Simulation; Principles and Practices'. We had a similar sense of humour, liked the same sort of people and shared a love of science and the scientific method. Gerry wrote the preface of the book and there is a paragraph at the end that perfectly summarises our relationship. There is probably not a day that passes that I do not think of him or miss him, particularly now that I am located in Cork. I think that individuals like Ted, George, Peter and Gerry represent the potential of Cork and UCC. From my observations whilst a visiting Professor at UCC, I think there are many more like them.

The other thing that attracted me to UCC was that there appeared to be a very 'real world' ethos underpinning much of the work and activity in the University. I believe that this mindset will pay dividends for UCC and Ireland.

How did an experimental psychologist become involved in this research area?

It was very much by accident. In the mid-1990s, I saw an in-depth Newsnight item on 'Keyhole Surgery' describing how straightforward laparoscopic surgical procedures had gone wrong. It appeared that surgeons didn't really know why some of their colleagues had difficulty learning keyhole surgery. As a psychologist, the reasons were abundantly clear to me. Then a junior academic, I asked permission to pursue the problem. Within three years, I had published quantitative demonstrations in prospective randomised studies. The main reasons were primarily human-factor (e.g., loss of important information on depth of field, counterintuitive movement of surgical instruments caused by fulcruming against the body wall, degradation in haptic and tactile feedback etc). I quickly moved on to training solutions. In 1998, I started to investigate a new technological solution to the problems posed by learning laparoscopic surgical skills, i.e., virtual reality (VR) simulation. Although VR simulation had been mooted in surgery since the late 80s and early 90s, no robust evidence had been published regarding efficacy as a training vehicle. In 2000, when I was Fulbright Distinguish Scholar in the Department of Surgery at Yale University, I was lead investigator in the first prospective, randomised, double-blind clinical trial of VR simulation training for the operator room. Results showed that VR trained surgeons performed significantly better than traditionally trained surgical residents.This study was published in Annals of Surgery and was a citation classic in just over a year. On the basis of this study and a number of replications which followed, the American College of Surgeons established a network of simulation training centres across the US.

What is proficiency based progression training?

Simulation is a tool, and only as powerful as the curriculum it is embedded in. The approach that I have developed and validated has become known as proficiency-based progression training. A quantitatively defined performance level is established based on the objectively assessed performance of experienced practitioners. Trainees are then required to train on the simulation until they have unambiguously and quantitatively demonstrated the mean performance level of the experienced practitioners (consistently). This means that simulation based training becomes a vehicle for 'deliberate' practice rather than just repeated practice. Deliberate practice means that trainees receive quantitative feedback on their performance, particularly on deviations from optimal performance (i.e., performance errors). This approach to skill acquisition is more efficient and effective than the traditional approach of repeated practice. Furthermore, performance at the end of training is quality assured by the simple fact that training is not deemed completed until the trainee has demonstrated the performance benchmark. This relatively simple idea has radical implications for training, competency and patient safety.

The late Prof. Gerry O'Sullivan and Prof. Tony Gallagher.

Medical training – a paradigm shift

We are experiencing a paradigm shift in how healthcare workers are trained. The College of Medicine and Health at UCC is, as Prof. John Higgins correctly stated, 'ahead of the curve' in this regard. UCC has committed to build the ASSERT (Application of Science to Simulation, Education and Research on Training) for Health Centre and my appointment is a significant part of that commitment. Simulation and Technology-Enhanced Learning (TEL) are the core 'business' of this centre. Professional organisations around the world responsible

for the training of healthcare professionals have almost unanimously agreed that technology must be better harnessed for more efficient and effective education and training. In particular, technologies such as virtual reality simulation and e-learning must be used to shorten the learning curve and to supplant the skill acquisition process that was previously acquired in clinical situations. A learning curve on patients is no longer acceptable, particularly for common procedures.

This poses challenges but also offers enormous opportunities. Ireland has a well-deserved reputation for producing outstanding doctors, nurses and other healthcare professionals. The challenge is to identify what it is that we do so well in our education and training of health care professionals and then apply it more systematically. Simulation and other technologies allow the trainee to engage in deliberate rather than repeat practice and is more efficient, effective and quality assured. However, building an effective simulation and embedding it in a curriculum first requires that the precise details of specific procedures are fully understood and characterised. This is not a simple as it sounds. Once a procedure has been appropriately characterised and detailed operational definitions of procedure steps and sub-optimal performance identified, appropriate simulations and curriculum can be designed and implemented.

Procedure Characterisation

Training is important and ASSERT must offer first class training and continuing professional development for healthcare professions in Ireland and internationally. Integral to this is an in-depth understanding and validated characterisation of the skills being trained, irrespective of the procedure or discipline. The next step is to design curricula which employ simulations for training. A better approach would be to first characterise the procedure to be simulated, and then identify from validation studies and clinical experts the aspects of the procedure which are essential to emulate and to what level of fidelity.

Device Manufacture

Procedure characterisation requires that the steps of the procedure, the devices used during those steps and procedure errors are identified, operationally defined and quantitatively validated. This level of understanding could possibly lead to the conclusion that this approach/devices may not be the best way to treat a clinical problem. Procedure characterisation requires the definition of an optimal procedure outcome. This information gives an opportunity to develop or invent a new device to perform the procedure in a better/safer way. Given Ireland's relationship with leading medical device manufacturers, the opportunities offered here are breathtaking.

Challenges

One of the things that could limit or impede the success of ASSERT for Health is its perception purely as a training centre by regional and national healthcare organisations. ASSERT for Health is far more than this and represents an investment by the College of Medicine and Health and UCC in the future. At the core is a culture and philosophy of improved patient safety brought about by a genuine understanding of what training is and what it should be. From this understanding emanates effective and efficient training across healthcare disciplines using validated simulations and curricula. Another important output will be the publication of clinical validation studies accurately describing the process and facilitating replication. The vision of Horizon 2020 (the EU Research strategy) particularly for countries like Ireland, is the successful commercial exploitation of good ideas and science. ASSERT is a vehicle to achieve that goal. The idea of proficiency-based progression training based on validated procedure characterisation is relatively simple but represents a paradigm shift in how doctors and healthcare workers are trained and how medicine is practiced.

Opportunities for ASSERT for Health

ASSERT for Health at UCC provides a unified approach to the problems faced by a variety of health care disciplines. ASSERT for Health can lead the way in educating and training a broad spectrum of professional groups in TEL. Specifically, we will show how TEL is optimally developed, applied and validated. This will require the ASSERT for Health Centre to rapidly expand the number and types of courses. This expansion has already commenced as I am in the early stages of developing a postgraduate course in TEL for Health to commence in 2014. In order to maximise this opportunity, a key element will be to have a systematic approach to the implementation and quantitative validation of TEL. We need to provide evidence that TEL is a better way to train for proficiency. Part of my vision for ASSERT for Health is that a procedure-based focus would seem a sensible place to start. However, this should rapidly expand to less tangible but equally important areas such as decision-making and acquisition of practice wisdom. A constant consideration should be the development of new and better methodologies and new instruments and devices.

The Future

Ireland has demonstrated the capacity to punch above its weight in a number of pursuits. Healthcare is one of them. I firmly believe that TEL is a new but rapidly expanding area where UCC and Ireland can excel. We have already demonstrated expertise and capacity. It is my intention that ASSERT for Health should be at the forefront of international developments and should commercialise and exploit the good ideas derived from the scientific process. TEL for health, although not new, has come of age. ■

Jennings Gallery 'Seeing is an Art that must be learned'

Visual Thinking Strategies

Visual Thinking Strategies (VTS) is a teaching method that uses visual observations to enhance critical thinking and observation skills and is based on open-ended yet highly-structured discussions of visual art of increasing complexity. In addition to teaching students the importance of detailed observation, VTS aims to help students cultivate a willingness and ability to present their own ideas, while respecting and learning from the perspectives of their peers. VTS is thought to increase the frequency of supported observations and speculations and to foster critical thinking strategies. Art has more than one 'right' interpretation and ambiguity invites speculation. VTS requires students to focus, become reflective and to question - the basis for thinking.

A pilot VTS programme recently commenced at UCC medical school. The sessions are led by trained VTS facilitators from the School of Medicine with the support of VTS facilitators from School of Nursing and Midwifery, Dentistry, Pharmacy and Clinical Therapies. The programme is offered to Third Year medical students.

Dr. Bridget Maher, Director of the Jennings Gallery and Chairperson STEAM Committee, explained how medical students might benefit from VTS: 'Observation skills are of vital importance in medicine. Inspection should never be a hurried glance, but a slow, deliberate, active 'seeing'. Observation skills can be improved – the more one looks, the more one sees. VTS may improve observation skills and critical thinking, and allow students understand difference of opinion and interpretation. Feedback has been very positive - students seem to enjoy the reflective nature of viewing a work of art and are very active contributors to the discussion. We have included some images of a medical nature but is it important to keep the focus on Art as an aesthetic process.'

UCC is the first Medical School in Ireland offering VST to students and the only university with VST trained faculty.

VTS programmes have also been introduced in the schools of Nursing and Midwifery, Pharmacy, Dentistry and the Clinical Therapies.

THE Jennings GALLERY
BROOKFIELD COMPLEX, UCC

Jennings' Gallery Exhibitions

The Jennings Gallery recently hosted an exhibition Of Chinese Fine Art from Shanghai University and a Chinese calligraphy demonstration.

Coming soon: '***Pop-up Poetry'*** :
College of Medicine and Health Staff and Students.

'Acquainted with the Night' :
November- December 2013: Grainne Tynan.

'It's a Beautiful World':
20th February 2014: Exhibition.

'Celebrating Autism' : 2nd April 2014.
A display of artistic works by children with autistic spectrum disorder.

'The Art of Making' : 13th May 2014.
School of Occupational Therapy, UCC.

Summer Elective Report

The summer before Final Year is one of the most keenly anticipated times in a UCC medical student's course. For most students, this is their first dedicated opportunity to embark on a medical elective, working at a hospital of their choice in a field that they are passionate about - and to get some sightseeing done on the side. This year, UCC students spread out all across the globe, with some of my classmates travelling as far abroad as Argentina, Australia, and Zambia for their electives. Due to my own interest in pursuing a career as a pathologist, I decided to spend my summer working in pathology. After months of enquiries and an endless barrage of emails, I was fortunate enough to secure electives at the Mayo Clinic in Rochester, Minnesota, and the Massachusetts General Hospital in Boston.

After celebrating the end of the summer exams, I headed for Minnesota. The Mayo Clinic elective was focused on resident shadowing. Every day, I was assigned to a certain resident, from the 7am morning lectures to the end of the day. This was a great way to see first-hand what the work of a pathology resident was like, and, just as importantly, to find out what the residents really enjoyed about the specialty. The main focus of the elective was histopathology, with some time in cytology and autopsy services. Two-day surgical pathology rotations formed the basis of the experience. The first day was spent assisting the resident at specimen dissection in the lab, and the second day reviewing the slides with the resident and the consultant. This allowed me to see how the pathology laboratory functions, and meant that I could follow a specimen from its arrival in the laboratory to the final report being issued.

My time at Massachusetts General complemented this experience wonderfully. The pathology elective at MGH was centred more on working with consultants than shadowing residents, and placed a stronger emphasis on clinical pathology. A typical day would involve signing out cases with the consultants in the morning, and previewing the following day's cases in the afternoon. This elective was based on four week-long rotations in fields such as haematopathology, microbiology, dermatopathology, and transfusion medicine. When I wasn't at sign-out or preparing for the next day, I was expected to attend resident lectures and grand rounds, or to study for my case presentation at the end of the month. In addition, I was also encouraged to sign up for and attend working groups that were focused on exciting new areas of research, especially in the rapidly growing areas of bioinformatics and computational pathology.

A very important aspect of the experience that was identical between the two electives was the calibre of the residents, fellows, and consultants. Without exception, they were dedicated, motivated, friendly individuals who greatly enjoyed their work and were very keen to teach. They were extremely supportive of my interests in pathology, and strongly encouraged me to pursue them further. One of the greatest perks of working at these centres was having a chance to interact with individuals who were truly world-renowned. Sitting down to work with people who have syndromes named after them, or whose names are on the front cover of WHO guidelines was a very special experience, made all the more enjoyable by how down-to-earth and approachable they were.

Once I had completed my electives, three weeks remained to unwind and reflect before returning to college. The thorough exposure to pathology I received during the summer made me realise how much I would enjoy a career in pathology. I loved the work itself, which was calm, focused, and analytical, with each specimen requiring an entirely new frame of thought. The specialty was a refreshing and very personally appealing way to approach medicine, where you really get a chance to stretch your mental legs, combining the challenge of a logic puzzle with the satisfaction of playing an important role in patient care. In addition, I was able to see how much the pathologists and residents enjoyed their work, and how personally satisfying it was to them. All in all, I enjoyed the experience so much that I am now counting down the days until I can apply for a pathology training scheme, whether that be here in Ireland or across the Atlantic. ■

Dr. Henry Hutchinson Stewart **Scholarships 2013**

UCC medical students had an outstanding performance in this year's NUI Dr. Henry Hutchinson Stewart Medical Scholarships and Prizes. UCC medical students received 19 awards, including 8 first place scholarships.

First Places
Biochemistry - Dennis Hopkinson;
Pharmacology - Francis Delaney;
Physiology -Siobhan Rafferty;
General Practice - Patrick Mitchell;
Ophthalmology - Ming Yong Lee;
Medicine - Sheila McSweeney;
Paediatrics - Karen McCarthy;
Surgery - Helen O'Brien.

Second Places
Gynaecology and Obstetrics - Aoife Hurley;
Clinical Radiology - Anne Mary O'Mahony;
Medical Microbiology - Kiran Reddy;
Medicine - Orla Houlihan;
Paediatrics - Daniel Crowley;
Physiology - Alexandra Britto.

Third places
Biochemistry - David Vaughan;
Pathology - Laura Corkery;
Pharmacology - Kieran Mullins.

Commendation:
Medicine – Karen McCarthy;
Paediatrics - Anne Mary O'Mahony

The students received their medals and awards at an NUI ceremony in Royal Hospital Kilmainham, Dublin in November.

Dr. Henry Hutchinson Stewart was born in Wicklow in 1799, the son of a clergyman. In 1829 he obtained the licence of the Royal College of Surgeons, Ireland and MD of Edinburgh. In 1888, a bequest was received by Trinity College, Dublin and the Royal University of Ireland, from the estate of Dr. Henry Hutchinson Stewart, for the establishment of Medical and Literary Scholarships. The recipients of the Medical Scholarships and Prizes are determined by an agreed Extern Examiner in each subject. ■

UCC leads the way with a €6 million EU Cystic Fibrosis Research Award-CFMATTERS.

An international consortium of Cystic Fibrosis clinicians and scientists, led by Dr. Barry Plant of the College of Medicine and Health, Alimentary Pharmabiotic Centre and the HRB - Clinical Research Facility, University College Cork/Cork University Hospital, Ireland has launched a major EU-funded collaboration project focused on the development and trial of personalized antibiotic treatment for patients with CF during respiratory infections. CFMATTERS an acronym for 'Cystic Fibrosis Microbiome-determined Antibiotic Therapy Trial in Exacerbations: Results Stratified' will receive approximately €6 million in funding from the European Union's Seventh Framework Programme.

The CFMATTERS consortium brings together a diverse international group of renowned CF experts from both academic institutions/ hospitals from across Europe and the United States of America. CFMATTERS partners include; University College Cork and Teagasc Agriculture and Food Development Authority (Ireland), Queen's University of Belfast, Papworth Hospital NHS Foundation Trust and the University of Dundee (United Kingdom), the Université Paris Descartes and Assistance Publique – Hôpitaux de Paris (France), Universitätsklinikum Heidelberg (Germany), Katholieke Universiteit Leuven (Belgium), and the University of Washington in Seattle (USA). These academic institutions will also cooperate with small business enterprises including clinical data management specialists, Clininfo S.A. (France) and a research project management company, GABO:milliarium (Germany).

The unique project is the first randomized, controlled trial comparing the use of microbiome-directed antibiotic treatment versus standard therapy for patients with CF (PWCF) experiencing respiratory infections. Announcing the funding Dr. Barry Plant, CFMATTERS coordinator and Director of the Adult CF Center, Cork University Hospital commented, "CFMATTERS offers a personalized approach to antibiotic treatment. It will enhance individual patient responses and decrease drug resistance by employing next generation technologies. CFMATTERS brings together a powerhouse of international expert clinicians and scientists to further enhance the understanding on how best to treat all chronic and acute infections".

Cystic Fibrosis affects over 70,000 people worldwide with over 90% dying prematurely from respiratory infections which have overlapping chronic and acute bacterial components caused by a multitude of infective and potentially resistant microorganisms. Mr. Philip Watt, CEO of the Cystic Fibrosis Association of Ireland stated, "This is a tremendous opportunity for Ireland to become a world leader in Cystic Fibrosis care and drug resistance. The success of CFMATTERS will have important positive implications for all patients with CF and their families". Denis Coughlan an Irish patient with Cystic Fibrosis added, "This new approach to treating infection, I believe offers all patients a new radical approach with potentially significant benefits".

CFMATTERS will evaluate the potential benefits of a multi-center clinical trial using next-generation DNA sequencing of the bacteria in patient mucus samples compared to current culture media protocols, to guide antibiotic treatment of Cystic Fibrosis patients. This personalized, microbiome-derived antibiotic treatment will be evaluated by recording the speed of patient recovery and the length of time elapsed before the next infection.
In parallel, scientists will also analyze the genetic makeup or microbiome of the resident microflora in the mucus and gut, and their interaction with the host. Cell and murine models of Cystic Fibrosis disease will also be used. Collectively, these studies will pave the way for more effective therapeutic regimes and ultimately contribute to the development of personalized Cystic Fibrosis treatment.

This approach may potentially revolutionize the practice of antibiotic prescription in other acute and chronic infections also. Antibiotic resistance is one of the most significant challenges facing the EU health care system owing to unnecessary and inappropriate use of antibiotics. CFMATTERS is one of 15 new research projects funded by the EU to combat- microbial resistance. Personalized antibiotic treatment using next generation technology such as that employed by the CFMATTERS project could limit the development of antimicrobial resistance globally, by only prescribing those antibiotics that are necessary for an individual patient.

At the launch of European Antibiotic Awareness Day 2013 European Commissioner for Research and Innovation, Máire Geoghegan-Quinn, added: "Research and innovation are essential if we are to turn the tide against antimicrobial resistance. These new projects will add to the excellent work on-going to develop new drugs and treatments." She acknowledged that Cystic Fibrosis (CF) represents a unique disease model to study bacterial resistance and to explore therapeutic strategies for same, as chronic lung infection overlaps with acute lung exacerbations caused by a multitude of organisms that traditionally evolve various mechanisms of resistance. ■

Today's Research is Tomorrows Health Care

"Today's research is tomorrows health care" Building capacity to lead Paediatric research and clinical care in Cork

Introduction

The Department of Paediatrics is undertaking its first major investment in infrastructure since CUH opened its doors in the Regional Hospital, Wilton in 1979. While the RGG Barry Day unit was added through public subscription in 1990, the core of the unit is unchanged and is tired and worn out, just like some of the staff! The delivery of healthcare to children has changed drastically in the last 4 decades as the burden of gastroenteritis and pneumonia has decreased and survivors of neonatal intensive care need complex care, unimaginable in 1979. The spaces we need now are for ambulatory care. Our clinical and teaching spaces must change to reflect the needs of our clients, who are children, their families and our students.

The diseases we treat have changed, so we must change how and where we work.

Retired colleagues in Limerick tell me that in the 1970s the first question the Consultant asked the Sister each morning was "How many children died last night?" Our Paediatric morbidity and mortality meetings in CUH show less than 5 children die in CUH each year now, as we transfer severe cases to PICU in Dublin (approx. 40 cases per annum) and manage terminal care at home. Nonetheless, overall deaths in children who have medical care in our services is still <20 per annum. When the current unit was being planned in the early 1970s, Prof. Barry bid for a 400 bed unit for children in Cork, to deal with the burden of cases of infectious disease. We currently have just 80 beds in the city, which will drop to less than 70 with reconfiguration, when St Anne's Ward in MUH moves to the single paediatric site at CUH.

Intravenous and oral rehydration is still a mainstay of our general activity but all our paediatric subspecialties (unheard of in 1979!) such as endocrinology, diabetes, and allergy, day surgery etc. have more need for ambulatory space than inpatient beds. How times have changed.

The students we teach and how we teach them have changed too

UCC's teaching space is still the same as when it opened and many graduates will remember it from their own student days. Esteemed graduates who have visited us and given talks, have entered the tutorial room with mixed emotions! New teaching space is needed to simply cope with current numbers and with recently proposed expansion of student numbers, we will already have to look elsewhere for clinical placements again. UCC must invest in paediatric-specific simulation technology and expertise to cope. Just when you finally fix one problem, another one comes along…

How we are changing - Delivery of Clinical Care

In the HSE reconfiguration we will be building a new 2-floor extension placed above our current bungalow accommodation. In-patient facilities will remain on the refurbished ground floor, though we will still not be able to offer single bed accommodation or adequate parental accommodation. Haematology will take over the current Seahorse Day Unit and all clinical day services including outpatients, day surgery, ambulatory CF, diabetes, neurology, allergy and cardiology care (we have them all in-house now!) and outreach clinics from the "imminent" National Paediatric Hospital will take place on the first floor, with separate access from the main hospital corridor.

How we are changing - Teaching and Research

UCC's Dept. of Paediatrics and Child Health will be housed on the second floor with a larger lecture room, small meeting rooms, a computer suite, and clinical skills lab and research accommodation. The HRB-funded Children's Discovery Centre (whose ribbon was cut in 2010, not by a politician but by Dan O'Keefe, aged 4), which is the paediatric-specific part of UCCs' clinical research centre, will move into the second floor too, and a laboratory will be fitted out.

The Academic Department is currently very successful in winning non-Exchequer funds for research. It has the highest per capita income in the School of Medicine and is undoubtedly the most active Paediatric academic unit in the country, but it is working in space wrested from others when paediatric research was in its infancy. Our 1,900 children in the BASELINE birth cohort study will be coming to see us regularly (>4000 visits to the Discovery Centre since it opened) and our bio-bank of samples from them is a national scientific treasure that deserves the best possible facilities for its curation. Other studies will need space too, looking at immunomodulation of allergic disorders, neurocognitive follow up of survivors of neonatal hypoxic ischaemic encephalopathy and neonatal hypotension etc.

Summary

This accretion of clinical and research activity into an integrated space is a perfect example of the HSE and university sectors' ambition to forge Academic Health Centres to deliver research led health care, shown to be the best model of care.

Paediatrics is a different specialty now. UCC and its HSE partners have recognised this and are backing the single-site integration of the acute and ambulatory care with the academic and research activities which have exploded in Cork since 2005. These are exciting times for children's health in Cork and I am delighted to know that UCC and its alumni have invested in our most important national resource, the health of our children. ■

Improving Care for People with Diabetes: A Population Approach to Prevention and Control

In 2013, Professor Patricia Kearney was one of the first recipients of the Health Research Board (HRB) Research Leader Awards.

These were developed in response to the need identified by the HRB to build capacity to conduct high quality Population Health and Health Services Research (PHHSR) in Ireland including an urgent need to invest in senior academic research leaders in PHHSR, working in close collaboration with key clinicians and health managers engaged in policy and/or practice. Patricia's award, in partnership with the National Clinical Programme in Diabetes, is to lead a project titled: Improving Care for People with Diabetes: A Population Approach to Prevention and Control. The overarching vision of the research programme funded by the HRB is to improve care for people with diabetes in Ireland and to reduce the preventable economic and societal burden of diabetes. The programme of research is based on maximizing existing collaboration between academic Epidemiology and Public Health, Health Services Researchers, Health Economists and Clinical Medicine. The award will fund Professor Kearney's work over the next 5 years and will develop additional capacity in this area by supporting the training of doctorate and post-doctorate researchers. In recognition of Patricia's outstanding track record in terms of publications and peer reviewed research grant funding and her recent success in securing this prestigious HRB Research Leader Award, UCC has appointed her as Research Professor.

Diabetes is a major public health problem worldwide which places a significant burden of care on the individual, health care professionals and the wider health system. The rising prevalence of diabetes has increased interest in it's overall economic and societal costs. Cost estimates vary depending on the accuracy of the methods used to identify people with diabetes, its' population prevalence, and health care costs. Strategies are being developed to improve quality of care for people with diabetes which need to be evaluated. The increased prevalence of diabetes worldwide, particularly at the dynamic life stages, including older age and pregnancy, and the concomitant costs, have increased interest in prevention strategies in particular lifestyle modification. It is now widely accepted that the traditional model of acute episodic care will not cope with the future burden of chronic conditions such as diabetes, so greater attention has been paid to ways of reorganising services, including the reorientation of care towards the primary care setting.

Prior to the development and implementation of new prevention, treatment or reimbursement strategies for diabetes care, the first necessary step is to quantify the burden of disease in the community. At present in Ireland there is a lack of reliable information on the prevalence of diabetes, including both diagnosed and undiagnosed individuals and associated risk factors, as well as a dearth of information on the complications of diabetes and related conditions. The first component of the programme of research will be to develop valid estimates of the prevalence of diabetes and diabetes- related complications in Ireland using existing datasets. Secondly, there is no reliable information on the cost of diabetes care and complications in Ireland. The information compiled on the prevalence of diabetes and diabetes related complications will be utilized to estimate the costs of providing care to people with diabetes and to therefore cost-effectively prioritize service provision. Thirdly, diabetes care delivery in Ireland is in the early stages of reform and reorganisation with the establishment of the HSE's National Clinical Programme in Diabetes. However, there has been no process evaluation of change and implementation to date and this will be addressed in the programme of research. Finally, given the increasing prevalence of diabetes, feasible approaches to lifestyle modification are urgently required. Gestational diabetes mellitus is one of the most common complications of pregnancy and is associated with significant short and long-term risks for the mother and offspring. Pregnancy is a time of rapid change and provides an opportunity for behavioural change particularly if the lifestyle changes impact on the health of the foetus. The research programme will include the development of an appropriate evidence-based lifestyle intervention to improve the diet and physical activity levels of pregnant women in Ireland.

The research programme led by Professor Kearney has the potential to directly and rapidly impact on diabetes care in Ireland and the quality of life and outcomes of people with diabetes. ■

Charles Donovan Memorial Lecture - Introduction

Charles Donovan 1863-1951

Charles Donovan combined all that is good in clinical and laboratory medicine and as a human being he contributed hugely to comfort patients. As a scientist and teacher he advanced understanding of infectious diseases, and it is wholly fitting that UCC , and the Medical Alumni acknowledge his contribution to world medicine, in a named lecture. The Charles Donovan Prize in Dermatology is also named in his memory, an award the late Fergus Lyons was instrumental in establishing. The life of Charles Donovan is described in the excellent book "Irish Masters of Medicine" by another distinguished UCC Medical Alumnus, Davis Coakley [1] and in an article by S. Tharakaram delivered to the Liverpool Medical History Society in 1999 [2]. Donovan was born in India in 1863, the eldest of 9 children. His father was Irish and so Charles was educated in Ireland from the age of 13. He was sent to his grandfather in Cork and studied medicine at UCC, then Queen's College . He later studied in Trinity, graduating in 1889 . He entered the Indian Medical Service, reaching Bombay in 1891, and subsequently he was posted to Mandalay, Burma where his first daughter was born. He became a professor of Biology at Madras University, Superintendent of Royapettah Hospital Madras, and also served actively as a Captain in Afghanistan, for which he was awarded the Tirah medal.

His main scientific discoveries were due to his careful microscopic studies and clinico-pathological correlation. In 1903 he identified the agent causing the infectious disease kala-azar or leishmaniasis, from a biopsy of the spleen in a living patient. The protozoan parasite was named Leishmania Donovani in recognition of both Donovan and Sir William Boog Leishman, a Scottish pathologist who had identified the organisms in post-mortem tissue. Kala-azar is also known as "black fever", (from the blackening of the skin that can occur) and the cutaneous form of the disease affects about 1.5 million new people annually, while the systemic form affects 0.5 million annually.

In 1905 Donovan identified the micro-organism responsible for the venereal disease granuloma inguinale which also bears his name, Donovania granulomatosis., now renamed Klebsiella granulomatis. Granuloma inguinale is endemic in the tropics of Western New Guinea, the Caribbean, India, South Africa, SE Asia, Australia,and Brazil. Donovan's bedside manner is described as "perfect" by Tharakaram, and he is also described as being greatly admired and adored by his Indian assistants, to whom he was most kind and courteous. Whilet he is also described as being rather blunt and outspoken, he was deeply loved by those who knew him. He was a very hard worker and not only taught students about medicine, but how to prepare meals for their patients and how to give enemas.

He retired from the Indian medical Service in 1920 and thereafter pursued his interest in the study of butterflies and birds, and reported the occurrence of malaria in monkeys. After retirement he wrote a Catalogue of the Macrolepidoptera of Ireland (1936), for which he studied mainly in Timoleague, near Bandon, where his sisters lived. Charles Donovan died in 1951 in Bourton on the Water, Gloucestershire. ■

1 Coakley D. In "Irish Masters of Medicine" ; 1992 Town House Publishers, Dublin. pp233-240

2 Tharakaram S. Charles Donovan, MD, Indian Medical Service. Paper delivered to the Liverpool Medical History Society , 6 May, 1999.

"Making microbes work for mankind - a century after Donovan"

It is fitting that Charles Donovan be honoured by Cork's medical alumni. Charles Donovan is arguably one of the most accomplished clinicians from Cork. His work almost a century ago is still relevant today, and his dedication and work ethic are an inspiration to all. One of Donovan's biographers declared that "Charles Donovan's footprints on the shores of India and on the sands of time will remain to inspire all future generations in the medical profession" (S. Tharakaram). Donovan is remembered for his work on chronic infectious disorders, such as leishmaniasis and granuloma inguinale, and for his attention to detail in caring for his patients. He was a remarkable clinician-scientist, who identified important clinical problems and brought the scientific method to their resolution. Like many of our heroes, we admire him because of what he achieved under adverse conditions, against the odds. Donovan epitomises much of what we have attempted to achieve with the Alimentary Pharmabiotic Centre (APC) in Cork.

Prof. Fergus Shanahan

Charles Donovan would be disappointed to hear that infectious diseases remain a worldwide scourge and a continual threat to the survival of the species. However, he would marvel at the emerging interest in the indigenous or commensal microbiota, particularly that of the gut. Although 2013 marks the 10th anniversary of the completion of the human genome project, it is the microbiome that has emerged as the story of the decade. The APC has been a substantial part of that story. Time will tell whether sequencing the human genome will deliver all that was promised, but in the decade that has elapsed, the potential and promises of the human microbiome have moved centre-stage. The Nobel prize awarded to Warren and Marshall in 2005 was a timely reminder that the solution to some chronic diseases may not reside solely within the host. If it were not for attention shifting toward the interface between the host and the luminmicroenvironment, a cure for peptic ulcer disease would never have become a reality.

Although the microbiota is an essential health asset, conferring protection against infections, priming mucosal immunity, and producing vitamins, nutrients, and other bioactives, some components of the microbiota may become a liability depending on host susceptibility. Thus, the distinction between pathogens and commensals is variable and depends on context. To comprehensively study gastrointestinal physiology and pathophysiology or to model human disease, the gut microbial environment and the modifying influence of food ingredients must be taken into account. The scale and complexity of the microbiota within the gastrointestinal tract is tantamount to a hidden inner organ, with a metabolic activity matching that of the liver. The microbiota is not only critical for optimal gastrointestinal development but also has a regulatory influence on mucosal homeostasis. This involves continual microbe-host signalling which represents a rich repository of bioactive microbial metabolites that can be 'mined'. Therefore, understanding the molecular details of host-microbe interactions within the gut promises to yield new therapeutic targets with the potential to move from 'bugs to drugs'. In each of these areas, the APC has made important contributions.

The commercial importance of the microbiota has not escaped the business world and lay press. For example, the human microbiota adorned a recent cover of the The Economist ('Microbes maketh man'), and an earlier issue featured work from the APC on the mechanism by which the microbiota may influence the brain and behaviour. It is noteworthy that the APC is no latter-day entrant to this field. A decade ago, when the APC was launched, we predicted that the gut microbiota would emerge centre-stage in biology as a repository for drug discovery, a source of functional food ingredients, a potential target for therapeutic manipulation in certain diseases, and a health resource which might be manipulated by dietary measures. All of this has been proven correct. The Guardian newspaper found it sufficiently important to write an editorial drawing attention to a paradigm shift in nutritional science highlighted by a discovery at the APC published in Nature which showed that food diversity is as important as its calorific and nutritional value in maintaining health in the elderly.

In conclusion, the spirit of Charles Donovan lives on in Cork medical science. The APC has been part of the emerging story of the gut microbiome, contributing over a thousand peer-reviewed articles to the literature on this topic and rising to a top world ranking in several areas as determined by citations by external authorities such as Thomson Reuters. It has also matched or exceeded international metrics of commercial achievement in terms of inventions, licences, patents and spin-out companies. Furthermore, the APC has added value to Irish tax-payer support by doubling it from non-exchequer sources, mostly from foreign direct investment and overseas grants. The spirit of the APC entails much of what Charles Donovan exhibited during his wonderful career. Like Donovan, success has come with perseverance and hard work, and like Donovan, we are driven by the belief that we can make a difference. ■

The Natural History of a Series of Trisomy 18 and Trisomy 13 Pregnancies - *Dr. Orla Houlihan*

Abstract

Background and Literature Review

Trisomy 18 (T18) and trisomy 13 (T13) are the second and third commonest autosomal aneuploidy syndromes respectively. The effectiveness of prenatal screening, low proportion of live births and short survival time for both trisomies have been reported in the literature as have inconsistencies in parental counselling. Few studies document the overall natural history of the trisomies.

Aim and Objectives

To study the natural history (including diagnosis, pregnancy outcome, complications and survival) of trisomy 18 and trisomy 13 pregnancies in a setting where elective termination of pregnancy for fetal abnormality is illegal.

Methods

A retrospective review was performed of confirmed cases of trisomies 18 and 13 from 2001 to 2012. Following case identification, individual charts were examined.

Results

A total of 46 trisomy 18 and 24 trisomy 13 pregnancies were identified. Most T18 cases (65%) were diagnosed prenatally, however, only one third of T13 cases (33%) were prenatally diagnosed.

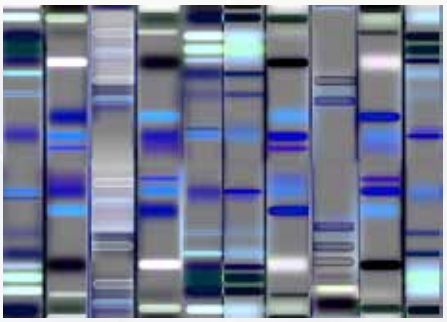
Thirty-six percent (T18) and 18% (T13) of live-born infants were delivered by emergency caesarean section, the commonest indication for this being distress in undiagnosed fetuses. Only three T18 pregnancies and one T13 pregnancy were electively terminated. Forty-eight percent (T18) and 46% (T13) survived following birth, for a median of 1.5 days (T18) and 7 days (T13).

Discussion and Conclusions

This study provides information for professionals and patients regarding the natural histories of trisomy 18 and trisomy 13. These pregnancies can go undiagnosed antenatally if anomaly screening is not undertaken. While many fetuses die in-utero, postnatal survival is possible. ■

An investigation into the role of DNA recognition in the pathogenesis of ulcerative colitis - *Dr. Sheila MacSweeney*

Background: Ulcerative colitis (UC) is a common form of inflammatory bowel disease. Its pathogenesis remains uncertain, although loss of immunological tolerance to intestinal microbiota appears central to its development. Therefore, recognition of microbial DNA by pattern recognition receptors known as DNA sensors may be an important pathogenic mechanism.



Aim: To investigate the role of DNA recognition in the pathogenesis of UC.

Methods: A quantitative reverse transcriptase polymerase chain reaction (qRT-PCR) screen of DNA recognition pathways was performed on colonic biopsies from patients with active UC (n = 32), inactive UC (n = 32) and healthy controls (n = 32). Regulation of DNA sensor expression in response to recombinant cytokine treatment or colonic biopsy supernatants was also quantified using qRT-PCR in a colonic epithelial cell line.

Results: Statistically significant up-regulation of DNA recognition pathways was observed in active and inactive UC. Mean expression of many genes was also increased by greater than two-fold compared to healthy controls. Collectively, these genes demonstrated differential up-regulation of DNA recognition pathways dependent on disease activity. Pathways related to AIM2, DAI and IFI16 were up-regulated in active disease, while the TLR9 signalling pathway was up-regulated only in inactive disease. Type I interferons were also shown to induce expression of DNA sensors (DAI and IFI16) in colonic epithelial cells, while colonic biopsy supernatants had no observable regulatory effect.

Conclusions and Discussion:

DNA recognition pathways are differentially up-regulated in UC dependent on disease activity. This observation suggests a potential role for DNA recognition pathways in the modulation of disease activity in UC. DNA sensors were also up-regulated by treatment with type I interferons in colonic epithelial cells, although treatment with colonic biopsy supernatants failed to replicate this phenomenon. Therefore, the relevance of this mechanism in UC pathogenesis is uncertain, and further research is required to confirm and explore these findings. ■

Cancer Pain Management - *Prof. Dermot Fitzgibbon*

Pain is a major problem globally [1]. Determination of priorities in public health is a complex, controversial, political, and economic process. The provision of a continuum in cancer care from risk assessment to end-of-life care presents considerable economic challenges and portions of the total costs of cancer is estimated as high as $895 billion (US) worldwide [2]. However, the moral obligation to adequately manage all forms of pain and particularly cancer-related pain, is recognized worldwide. Symptom control and pain management may contribute to quality-of-life improvement [3]. Management of cancer pain has been problematic and despite published guidelines for pain management, many patients with cancer have, and continue to experience, considerable pain and receive inadequate pain relief [4, 5].

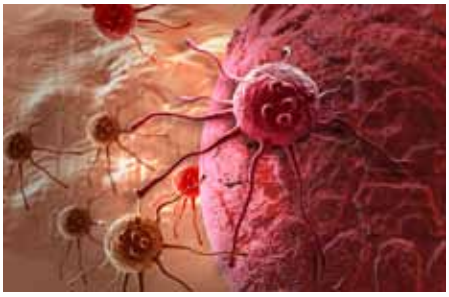
Persistent barriers to pain management include poor pain assessment skills, patient reluctance to take opioids or report pain, clinician reluctance to prescribe opioids, and perceived excessive regulation for opioid prescription [6]. Many clinicians report inadequate or no training in pain management at both undergraduate and postgraduate levels. In addition, the treatment approach for cancer pain has been largely algorithmic and one-dimensional. Because pain perception involves both sensory-discriminative and affective features, education must include these components.

Compared to other pain problems, cancer pain presents unique challenges. Patients may present with different components of acute, chronic non-malignant, and tumour-related pain. Furthermore, patients face painful non-surgical treatment strategies such as chemotherapy and/or radiotherapy. If cured, survivorship also presents challenges with dominant problems such as pain, depression, and fatigue [7].

Pain treatment strategies must be all-inclusive and may require careful coordination of care with all providers involved in care. Strategies may include a variety of approaches including pharmacological, behavioral, cognitive, rehabilitative, invasive or interventional, and complementary alternative medicine.
If appropriate, pain management may require redirection of care to anti-tumour therapies such radiotherapy, surgery, or chemotherapy. In all situations of tumour-associated pain, appropriate pharmacotherapeutic measures as outlined by the WHO Analgesic Ladder, are successful in the majority of patients [8]. Long-term opioid prescription requires careful systematic planning and an ability to respond quickly to changing situations. Pharmacological decisions, particularly with the use of adjuvant analgesics, should be based on evidence-based recommendations [9].

Interventional pain management procedures can be considered as those that can produce benefit at a single treatment session (i.e. neurolytic blocks, tractotomy, cordotomy, and vertebroplasty or kyphoplasty) versus those that require ongoing treatment (usually infusion-based therapy).

Neurolytic procedures include coeliac plexus block (for visceral pain), intercostal nerve block (for rib metastases), superior hypogastric plexus block (for intractable pelvic visceral pain), and saddle block (for perineal pain).



Cervicothoracic cordotomy (usually performed by open hemilaminectomy in the US) is an excellent procedure for patients with severe unilateral lower extremity pain. Vertebroplasty and kyphoplasty are primarily indicated for painful contained vertebral compression fractures due to primary or metastatic spinal tumours. Spinal intrathecal infusion therapy is an excellent choice for refractory tumour-related pain. In my institution, we advocate the use of externalized intrathecal catheters and have used this delivery system for many years safely and successfully. The main goal in using this system is to administer intrathecal bupivacaine; all other agents are considered adjunctive. Maximal efficacy of this delivery system requires that bupivacaine be delivered in a target-specific manner to the area of the neuraxis where nociceptive input is considered maximal.

Interventional procedures for cancer patients with pain are extremely useful for symptom management but should usually be reserved primarily for well-defined and well localized pain. The selection of an appropriate procedure and the correct timing of use requires that trained pain specialists be part of interdisciplinary teams that are dedicated to the long-term care of this population.

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Dr. Janet Ellis Webster Barry

From Medical School in wartime Aberdeen, to "house jobs" in London when the Doodlebugs were falling, supporting her husband in setting up Children's Hospital services in an impoverished Cork city, researching the epidemiology of cerebral palsy and recognising the needs of the handicapped child, Dr. Janet Barry, had a a remarkable and rewarding life, certainly " a life well lived". Like many women of her time, and all times, she allowed her own career to be sidelined in order to raise a family and support her husband in his professional and private life. However, those who knew Janet well came to appreciate her keen intelligence, insight and determination, and would ponder over the outstanding medical career that might have been. However, many people benefited from her warm, generous nature and wise counsel and her tireless work with handicapped children.

On graduation, M.B., Ch.B. in 1944, as the invasion of Normandy proceeded and Hitler's V1-rockets appeared, Janet commenced medical internships in the North Middlesex Hospital, London and recalled being on-duty when a "Doodlebug", as the V-1 Rockets were called, struck. She returned to the Aberdeen Sick Children's and Maternity Hospital and worked with the legendary Sir Dugald Baird. She took D.C.H. (R.C.P.S.) in 1946 and D.Obstet.R.C.O.G. in 1947. In the Queen Hospital for Children, Shadwell, East London, 1947-48, while the N.H.S was born, she met her future husband who was also training to be a paediatrician, Richard G.G. Barry from Carrigtwohil, Co. Cork. They were married in the Brompton Oratory in January 1949 and proceeded to Derby where Janet worked as Medical Officer for Children with the County Council , while her husband,"Dick", as he was known, was in the Children's Hospital.

Cork in the early 1950s was a difficult posting for a young couple who were determined to modernise hospital medical services for Children. Dick's Anglo-Irish and British army heritage (he had served in WW2), his socialist, if not "Red", inclinations, and Janet's "Protestant" background were greeted with suspicion for some time. However, their integrity and determination overcame the obstacles. Dick was the first fully trained paediatrician in Cork and the South of Ireland, and the founding Professor of Paediatrics in Univeristy College Cork. Janet devoted her energies to her family and enthusiastically backed her husband in all his medical endeavours. She always maintained her medical, particularly, paediatric interest. Friends were constantly amazed at her clear recollection of critical medical information right up to her advanced years (the years in Aberdeen were deeply embedded).

Janet undertook occasional "locum" general practice posts in Cork but her major medical interest was the handicapped child. For many years, she was the Medical Officer to the Centre for Physically Handicapped children, originally known as the "Spastic Clinic", then the Lavanagh Centre, and now the Cork branch of Enable Ireland. She had great empathy for the affected children and their families, and particular insight into their everyday lives, including the often unrecognised and unmentioned emotional and sexual needs. In addition, she was an integral part of the team, established by the late Professor Gerald Cussen, to study the epidemiology of cerebral palsy and establish the Southern Ireland Cerebral Palsy Register which attained International recognition and remains associated with the Surveillance of Cerebral Palsy in Europe organisation.Colleagues warmly describe Janet as a tenacious but empathic "field-worker". If the job was worth doing…" She did not retire from this work until 1977.

All who knew Dr. Barry attest to her generousity of spirit. She was actively involved with the Vincent De Paul Society and always a lover of animals, especially dogs, the Cork Society for the Prevention of Cruelty to Animals. After retirement in the 1980s when Dick was Chairman of the voluntary organisation, SHOUT, which was fundraising to build a new Children's Day Unit for the Paediatric Dept at Cork Regional (now University) Hospital, Janet was an enthusiastic and charming asset to team. For many years, Janet was an acitve valued member and secretary of the Cork University Women Graduates' Association.

Hospitality at home was renowned, especially Hogmanay events, which were celebrated in the proper Scottish tradition. There were dinners and Summer supper parties too, which sometimes concluded with a surprisingly keenly fought game of croquet on the lawn. On such occasions, the normally most reserved and polite host and hostess moulted into quite belligerent opponents on the croquet lawn in opposing teams. Janet retained her melodious Scottish accent through all the years in Cork and had a keen interest in and appreciation of music. She took her singing seriously, as you would expect, and practiced regularly. For many years, she enjoyed choral singing with the East Cork Choral Society but memorable too were her harmonious renderings (with Mary Wilson) of the Barcarolle from the "Tales of Hoffman" and the solo party piece "Comin Thro the Rye".

Retirement allowed the Barrys time for their many other shared interests, including gardening at their "Belmont" home, hill-walking, and appreciation of nature. Sailing then became a major part of their lives, along the coast of Cork, in the Kenmare river, entertaining friends on the boat and off, hospitality well remembered. Discipline, Scottish presumably, prevailed on such occasions-attention to Radio 4 forecasts, obeying the whistle commands on board, gin rewards only when safely at anchor. Janet and Dick were sailing at the time of the Fastnet Disaster, August 1979, and for a time, friends feared for their safety but they had found a safe harbour in Derrynane. When time time came to part with their fine keel yacht, "Gentle Jane" an appreciative new owner for her was acquired and hospitably entertained at the parting. Retirement also freed more time for travel. There were regular visits to Scotland in Autumn, catching up with friends and family in Edinburgh, Aberdeen of her youth, and to the cottage at Lough Melfort in Argyll. After Scotland, Italy was a favourite destination for the culture, history and language and Dick and Janet were prominent members of the Cork branch of the Dante Alighieri society .

Tragedy struck just before Christmas, 1975. Janet's second son, Thomas, was killed in a road traffic accident when he was at the start of his medical career. Janet bore this burden stoically through the rest of her life, and was able to retain her zest for life and lifelong learning. She regularly swam in the Atlantic and learned to dive in her 70's! Her husband, Professor Richard G.G. Barry, died in 2000. She is survived by her son, William, a consultant paediatrician in London, his wife, Elizabeth, children, Tom and Fiona, and her brother, Bill Copland, a retired consultant radiologist in Edinburgh. ■

John McKiernan

Dr. Michael Alexander Browne

Dr. Michael Browne passed away peacefully surrounded by family on Saturday January 5, 2013. Son of the late Frank and Rose Browne of Croaghta Park, Glasheen Road, Cork, he was born in 1927, the fifth of eleven children, in Longford, Ireland, and grew up in Cork City. He was educated at St Augustine, Dungarvan and Presentation Brothers College, Cork, and earned a National Scholarship to study medicine at University College Cork, graduating in 1950. Dr. Browne's post graduate training in medicine and surgery was extensive in Ireland and England, in his chosen field of orthopaedic surgery. He earned entry into the Royal College of Surgeons of England (FRCSE) and obtained a master of surgery (MCh) degree in Ireland. He then trained in the United States, where he pursued further orthopaedic training at the Massachusetts General Hospital in Boston and in New

York city at the Hospital for Special Surgery. Subsequently, he earned certification from the American Board of Orthopaedic Surgeons and was elected to fellowship in both the American College of Surgeons and the American Academy of Orthopaedic Surgeons. Dr. Browne established a successful private practice in Stamford, Connecticut, and was highly regarded for his general orthopaedic and microsurgical skill. He served as Director of Orthopaedic Surgery at both the Stamfoed Hospital and Sait Joseph Hospital from 1978 to 1983. He maintained his academic interests by serving as an assistant clinical professor for both the Hospital for Special Surgery and New York Medical College.

Proud of his Irish heritage, Dr. Browne co-founded the Irish American Orthopaedic Society, dedicated to the greater fellowship among Irish, American and British surgeons. He served as President of the organisation from 1981 to 1983. Additionally, he was an active member of the Stamford Ancient Order of Hibernians and had a lifelong passion for Irish history and culture. He also loved the classical languages and was an avid golfer, enjoying membership at golf clubs in the USA and Ireland, including the Waterford Golf Club.

Loving father, devoted husband, dedicated physician and tireless achiever, Dr. Browne is survived by his beloved wife of 54 years, Kathleen Carmel Phelan of Grantstown, Waterford; his five children Francis ("Frank"), a lawyer in Stamford, CT; Rosemary, a physician in Tuscon, AZ; Michael, an orthopaedic surgeon in Dallas/ Fort Worth; Paul, an architect in Albuquerque, NM; and Colm, a lawyer in Stamford, CT; their respective spouses, and twelve grandchildren (Caitlin, Michael , Jack, Kathryn, Marissa, Liam, Fintan, Connor, Evan, Lauren, Anna Rose and Elliott). Surviving siblings are his brother Dr. Francis Browne of USA, and sisters Doreen Lyons and Sr Emmanuel Browne of Cork. He was predeseased by his brothers John, Thomas and Dr. Gerard Browne and Ita O'Sullivan, all of Cork. ■

Mr. Tom Burke

Tom Burke who died on Sept 3rd 2013 in his 95th year, was the oldest surviving member of a generation of Surgeons appointed to the Cork hospitals in the years after the second world war. His surgical stature, reputation and longevity made him an important figure in the continuity and evolution of surgery and medicine in Cork for many years .

He was born in Bandon, the youngest child of Edward and Mary Burke. His secondary education was in Presentation Brothers College Cork

He entered University College Cork before his 16th birthday, and was awarded a BA in Irish and German in 1937. In the summer of 1936 he travelled to Bonn university with Professor Seamus Kavanagh to study Old Irish. His vivid memories of the Brown shirts' marches, and the atmosphere of forboding and fear that prevailed, lived with him for many years .

He then studied Medicine in UCC and was conferred MB BCh BAO in 1942 . As there were only two available intern posts in the Cork hospitals, he completed his internship in the Royal Hospital Sheffield.

Between 1942 and 1952, he trained in Sheffield, Newcastle, and the West Sussex Hospital in Chichester, gaining immense experience. He was awarded his M.Ch in 1948 and FRCS ENG in 1951.

The decade after his return to Ireland in 1952 was difficult, and he had to depend on private practice in the Bons Secours Hospital Cork, medico–legal and locum work, and support from colleagues, prior to his appointment to the South Infirmary Hospital Cork as Consultant Surgeon in 1962 . He remained on the staff until his retirement in 1984 .

As a surgeon at the bedside and in the operating theatre, he was self- assured, confident in an understated way, and combined sound clinical judgement with excellent technique. His personality and Surgical method were closely aligned; neat, meticulous and composed, he was organised in his approach to Surgery and its problems, and determined and tenacious in solving them. His letters and notes were models of clarity and brevity and his handwriting for a doctor perfectly legible ; always in ink with his Parker pen . His surgical range was general, but Thyroid, Biliary and Colon problems constituted his main practice.
His colleagues regularly sought his opinion in difficult cases.

He enjoyed teaching medical students. His approach was one of simplicity and encouragement, with a dash of humour. He was regarded by all as a fair and patient examiner who tried to get the best from each student.

He was a man of the most special charm and warmth. His distinctive appearance was dominated by impressive thick spectacles, below which there was an almost perpetual beaming smile. He had a unique and wonderful sense of fun and humour, with a razor-sharp wit, enhanced with eloquence and perfect timing. He was great company .

Following retirement in 1984, for almost 30 years he enjoyed a very happy time indulging his many interests with the support of his wife Kay who shared his passion for music and travel. He was an accomplished pianist. In his youth he was a pupil of Frau Tilly Fleischman, a name synonymous with music in Cork. He loved to play for guests in his home, and made many a party swing. He enjoyed Symphony concerts, and was a great supporter of local festivals and musical events.

From their holiday home in Courtmacsherry, Kay and Tom enjoyed walking in the countryside. Travel to destinations near and far continued into his nineties.
Gardening however he described as" the first sorrowful mystery ".

He will be remembered by his patients, former students, nursing staff and colleagues as an exceptional surgeon, teacher, a person of integrity and compassion, courteous and decent in every way that was important .

He will be remembered by his family and many friends as a modest self- effacing man, loyal, generous and kind with an effervescent sense of humour and love of life .
He is survived by Kay, his wife of 38 years, his niece Margaret and nephew John.
John Kelly ■

Dr. Frances Mary Lehane

Dr. Frances Mary (Mary) Lehane, formerly consultant anaesthetist at Cork University Hospital, died peacefully there, in the tender care of the staff, on November 18th 2013.
Born and reared in England to the late Dermot and Joan Lehane, Mary followed in her father's footsteps, graduating in medicine MB BCh BAO from University College Cork (UCC) in 1970. On completion of her intern year she joined the an-

aesthetic department at St Finbarr's Hospital as a trainee and thus began a distinguished career in anaesthesia. Having being conferred with the Fellowship of the Faculty of Anaesthesia RCSI (now the College of Anaesthetists Ireland) Mary was appointed as Senior Registrar to the Birmingham group of hospitals in 1975. In 1978 she successfully completed her Senior Registrar training and returned to Cork as Consultant Anaesthetist to St Finbarr's and Associated Hospitals, later transferring to the Cork University Hospital (CUH), where she played a pivotal role in the establishment of the new Intensive Care Unit in the CUH.

In addition to her clinical responsibilities, Mary distinguished herself as a researcher focusing her interest on Malignant Hyperthermia, a rare but serious complication following anaesthesia in vulnerable patients. In conjunction with her UCC colleagues Professors James Heffron and Thomas McCarthy, the research led to their important discovery that chromosome 19 was involved in the transmission of Malignant Hyperthermia. The resulting publication in the prestigious journal "Nature "in 1990 was a first for Anaesthesia in Ireland.

In response to clinical need and demand Mary was prevailed upon to set up and lead the National Centre for Malignant Hyperthermia in Ireland. In addition to her clinical duties, her research commitments and her role as Director of the National Malignant Hyperthermia service Mary gave of her time to act as examiner in the primary examination for the College of Anaesthetists, as lecturer in the department of Pharmacology in UCC and as a link for the Association of Anaesthetists of Great Britain and Ireland. She was a founder member of the European Malignant Hyperpyrexia (Hyperthermia) Group.

Mary's father Dermot received the annual award of the Oliver Memorial Fund in 1975 and was appointed CBE in 1977 for his services to medicine. Mary was also honoured, receiving the College of Anaesthetist's President's Award in 2007 for her national and international contribution to anaesthesia and patient safety and for her role in anaesthetic research and education.

Outside of medicine, Mary had a keen passion for gardening and was instrumental in the establishment of a number of gardens in CUH. She also enjoyed Rugby Union and loved to go to Thomond Park to watch her beloved Munster.

An excellent clinician and teacher, Mary was also a loyal colleague, a most caring and compassionate doctor, a focused researcher and a devoted and loving daughter and sister. Mary fought her final illness with typical bravery, determination and optimism. In his eulogy her brother John said "Mary was a beacon for us to follow. We may never have quite matched her standard but her example has helped all towards her standard". Mary is survived by her sister Nora and her brothers John, Barry, Tim, Michael and Bill.

John Mc Adoo. ■

Dr. J Fergus Lyons

Dr. J Fergus Lyons died after a brief illness on June 23, 2012. Fergus was a Dublin man who spent two years as medical registrar in Cork in the 1970s, returned as Consultant Dermatologist in 1982, and was at the forefront in driving the clinical and academic development of his specialty. On the surface he was a quiet, reflective physician, but underneath there was a quiet determination to achieve his aims and those of his medical specialty and institutions, coupled with a perpetual mischievous sense of humour.

Fergus was born in Dublin city, and grew up in Rathmines, which in the 50s and 60s was rapidly changing from suburb to integral part of the south city of students and bedsits. He could, but rarely did, claim a Cork connection - his mother was from Kinsale. Fergus retained a great regard for the Dublin of his youth and education. Secondary schooling was down the road in St.Mary's College and after "the Leaving" he proceeded (not too far) to University College Dublin. He attended the newly-opened Belfield Campus for the pre-medical year, and then back in to town, Earlsfort Terrace, Merrion Square and the multiple hospital and other institutions of undergraduate medical training in Dublin. Fergus had many headstarts as a medical student-location, keen intelligence, great application to the task in hand, admirable behaviour (never in trouble), a wry, philosophical, sense of humour-the glint in the eye, and the quiet, restrained "chuckle", never one for the loud guffaw! Then, as ever, humour was important to surviving the demands of the curriculum. From medical school days, he was devoted to conversation, relaxing best with chat and gentle gossip , often about the eccentricities of friends, colleagues and teachers. Not actively involved with sport or physical recreation, he would have agreed with Joseph ddison (1711) – 'odd and uncommon characters are the game that I look for and most delight in'. Another major asset as a medical student in Dublin was his car. Medical students were expected to find their way all over Dublin city and county and be seen and counted at the multitudinous clinics. Classmates were grateful for the lift in Lyons' mini.

Study and examinations came easy to Fergus. He graduated with distinction in Summer 1971, proceeded naturally (as a south city boy) to intern in the new St.Vincents Hospital (SVH) and settled easily to hospital life. There was never any doubt that his career would be in medicine, and from an early stage he was intrigued by dermatology and its practitioners. Medical SHO posts in SVH and the "old" Jervis St led eventually to Cork, (1975-1977) and St. Finbarr's Hospital, where he had registrar posts with Dr. Michael Hyland and the late Prof. Denis O'Sullivan. The membership passed, dermatology beckoned, and Fergus moved to the UK for specialist training with leaders in the field - Newcastle with Sam Schuster, and Edinburgh with JAA Hunter. Increasingly, dermatology was seen to suit the fastidious clinician he had become.

Fergus returned to Cork in 1982, joining the late Dr. Donal Buckley as consultant dermatologist in Cork and Munster. His main hospital base was the South Infirmary which later incorporated the Victoria Hospital (SIVH) in 1988, but he also attended the Regional Hospital (now CUH), the Mercy (now MUH), North Infirmary, and the Bon Secours. The outpatient 'scatter' was even wider, including Tralee, Limerick and Clonmel. The "South" as it was affectionately known, became his main base, and with SN Breda Bourke he developed a compact, efficiently run Dermatology Centre for the Munster region in 1990, growing over the next decade to become one of the largest in the country.

It was an interesting and challenging time to be a dermatologist with exciting new treatments for psoriasis, eczema, and melanoma. Fergus was instrumental in setting up the specialist melanoma service at the South Infirmary which became the largest such clinic in Ireland. He had a great affection for, and loyalty to the 'South' and was a steadfast defender of its cause. He was deeply committed to undergraduate and postgraduate education. In conjunction with UCC, he developed a comprehensive undergraduate dermatology programme in the South Infirmary, which is the envy of the country and introduced the Donovan Medal to foster the interest of medical students in dermatology (Dr. Charles Donovan, of Leishmani Donovani, and Donovania Granulomatosis fame, was associated with Cork and Queen's College, the forerunner of UCC). He was keenly involved in intern and further postgraduate training and led by example in his regular and punctual attendance at clinical meetings.Young doctors knew they could rely on him as an advocate and for guidance as ca-

reers progressed, or seemed to stall. He was a true mentor and is fondly remembered too as a punctilious tutor to younger colleagues preparing for clinical examinations.
Most of all, Fergus was the quintessential clinician, courteous and professional in his practice, enjoying the challenges and puzzles, and polysyllabic, somewhat archaic, nomenclature of his ancient craft. He was proud to be a dermatologist, served as Honorary Secretary and President of the Irish Association of Dermatologists and as Irish Dermatology representative on the European Union of Medical Specialists. In 1997, he was a founder member of the Munster Dermatology Group and took great pleasure in its growth as the specialty expanded over the years.

Fergus had many interests outside medicine. Back problems from early adulthood probably precluded his partaking in sports - though he cycled to work in SFH, long before cycling was fashionable. St Mary's College fostered an early interest in rugby and he was a season ticket holder in the old Landsdowne Road. He was an avid supporter of the "Magpies" (Newcastle United FC) and regularly travelled to matches with his equally passionate son/fan, Ronan. Another activity shared with Ronan was sea fishing off the coasts of West Cork. The Atlantic fish stocks were at little risk of depletion - it was more about the pleasures of the outdoors, companionship and a good concluding meal. His musical tastes were for Willie Nelson and Elvis and he was relearning the guitar in retirement. Fine dining, both at home with his wife Cliona, or out in company and with a glass or two of the right wine gave him great pleasure. After retirement, Fergus treated himself to a beautiful classic car, a Rover P6, which gave many hours of enjoyment. However P6 was also a somewhat wayward "child" causing repeated worries and spending hours in repair and rehabilitation. In later years, he had more time for foreign travel, visiting new places, making new friends on visits to the Middle East, South America and Cuba.
Retirement gave him time for his favourite pastime, conversation with like-minded friends. He would have been at ease in the London coffee houses of Dr. Johnson, where men convened to talk, seriously and frivolously, all day. Moving with the times he became adept at "texting", enjoying prolonged intellectual "jousts" via the mobile.
His sudden death shocked many and he is sadly missed by his wife Cliona, daughter Benvon, son Ronan and his many colleagues and friends.
John McKenna / John Bourke ■

Dr. Madoline O'Connell

Artist and doctor, Madoline O'Connell, who has died at the age of 97, was interviewed for a job as a young medical researcher by Sir Alexander Fleming, the discoverer of penicillin. In her late 90s, she was exploring the complexities of information technology, surfing the internet and texting her grandchildren.

Among many fine qualities, she refused to overplay the direct connection with Fleming at his ground-breaking laboratory in London's Harefield Hospital where she was engaged in pathology research. As she said in a recent interview: "The day I went to meet him, he could hardly talk to me. I never saw him again until the day I went to tell him I was retiring - and again, he could hardly look at me.

"He was a little, shy man, and nobody at the time thought he was anything special. We didn't have time, you just had to get on with it."

Following her marriage to Dr. St John O'Connell, the couple worked in the UK throughout the second World War, including the Battle of Britain and the "Blitz". On their return to Ireland in the early 1950s, he became the consultant to St Mary's Orthopaedic Hospital in Cork which serves Munster, the first such appointment outside of Dublin. She continued working professionally in pathology until the responsibilities of a young family prevailed.

That she lived a life less ordinary was reflected in the homily of her daughter, Kate, who described a mother who was both "interesting and interested, frugal but generous, sporty and artistic, proud but sociable, formidable and bossy ,a texter and silver surfer, a bridge between generations, a speedster and intolerant driver!".
Born into a Cork legal family just 19days after the Lusitania was torpedoed by a German U-boat off the south coast, up to her passing she was the oldest living graduate of UCC. Uniquely, her link with the university went back to Sir Bertram Windle, her maternal grandfather and first president of Queen's College Cork, as it was then known. He commissioned the Honan Chapel, which she greatly admired as one of Ireland's most important repositories of arts and crafts.

A graduate of the class of 1939, she was honoured at last year's medical and health conferring ceremonies by UCC president Dr. Michael Murphy. He observed that "Ireland in the 20th century was not supportive of married women pursuing professional careers. The potential contributions of many fine individuals, such as Madoline, to their professions were, sadly, never fully realised. And for many women, their lives were exclusively shaped by their position in society as defined by their husband's careers".
Her's was a rich past, rooted in Irish nationalist politics, law, art and writing. Her grandfather, solicitor Michael J Horgan, was election agent for Charles Stewart Parnell while her father, John J Horgan, solicitor, prolific writer and pamphleteer, amateur artist and coroner, pronounced the verdict of murder against the Kaiser at the inquest on the 1,198 victims of the Lusitania. The Press Ombudsman, Prof. John Horgan, is her nephew.

Her husband 's love of horses resulted in the O'Connells buying a farm near Mallow which they named Scarteen Stud and where they kept a string of racehorses. Living life to the full, they counted many of the country's leading breeders and trainers among their friends.

Stylish and cultured, with a love of art, books and music, in latter years she became a noted amateur artist in her own right. A widely praised exhibition of her work, entitled Passing the Torch, was held at UCC last November to illustrate the university's policy of using art to enhance the observational skills of students in medicine.
Predeceased by her son, John, she is survived by her daughter Kate and son Michael. ■

Dr. Richard Pomeroy

A pioneering Midland doctor who set up the first GP surgery in Chelmsley Wood has died at the age of 76.
Irish-born Dr. Richard Pomeroy started his first practice singlehandedly in a small rented house as the Birmingham overspill estate was still being developed in the 1960s.

He had previously worked as a locum at Alum Rock in Birmingham, but when he heard about the city council's plans for the major housing development, he knew immediately it would provide the challenge he wanted. "It was tough

going at first, frontier stuff," Dr. Pomeroy recalled in a newspaper interview years later. "The people settling there had come out of Birmingham, they had brand new homes but missed the old neighbourhoods they were so familiar with.

"Unlike other places where Birmingham people moved to, such as Telford or Redditch, there was no existing social infrastructure." Dr. Pomeroy was largely instrumental in founding the Craig Croft GP practice in Chelmsley Wood in 1968 and by the early 1970s it had nearly 15,000 patients, around a quarter of them under the age of 15.

"The health problems were of a kind endemic to areas of deprivation, where there was a lot of unemployment and actual poverty," he said. "Infant mortality was quite high compared with the national average and pneumonia was a frequent cause of death."

Craig Croft went on to establish a reputation for leading the way among GP surgeries with its maternity services and on tackling alcohol and drug problems. Dr. Pomeroy, who formerly served on the West Midlands Regional Health Authority, was awarded the MBE in 1993 for "services to the people of Birmingham".
His first GP partner, Dr. Martin Allin, paid tribute to him. "Dick was a very caring doctor, someone who worked for the public rather than himself. "He did an awful lot for the people of Chelmsley Wood." Another former partner, Dr. Jenny Bent, said: "He was a very kind man and popular with all his patients."

Dr. Pomeroy was twice married. He leaves a widow, Michele, five daughters by his first wife, Jo, who also survives him, and one stepdaughter. ■

Dr. Fionnuala Quigley

Dr. Fionnuala Quigley was born in Johnstown, Co. Cork, on 17/05/1958. Her father, Dr.. Colm Quigley, had set up practice there in the 1950's and subsequently moved to Ballineen. Fionnuala attended the local national school and received her secondary education in Bandon. She completed her undergraduate medical training at University College Cork and interned in Cork University Hospital. Following her vocational training in general practice in Cork, she took up a position in her father's practice in Ballineen. In practice, she was a progressive and enthusiastic clinician.
Fionnuala always had a keen interest in sport, both professionally and in her private life. She was an accomplished and competitive tennis player, and a member of both Sunday's Well and Argideen Tennis Clubs. She attended Wimbledon on occasion, was a devoted follower of Roger Federer and also an enthusiastic rugby fan and Munster supporter. Fionnuala greatly enjoyed her skiing holidays and diligently attended ski-school to improve her skiing style. Along with her colleague, Prof. Michael Molloy, she ran the Masters in Sports Medicine course in UCC and was also involved in undergraduate medical teaching. She found her interaction with the undergraduate and postgraduate students very rewarding.
Fionnuala was the official team doctor of the under 17 Irish women's football team. She took this role very seriously, and always considered the player's psychological, as well as physical well being. Her interest in sport and medicine led to her involvement with the charity CRY (Cardiac Risk in the Young). She raised funds for the charity, taking part in the annual women's mini marathon in Cork City. Her colleagues were often coerced into participating, regardless of their levels of fitness.
Fionnuala loved travel and foreign culture. A self- confessed Francophile, she studied the language and holidayed in Cannes with family and friends. Her arrival home was eagerly anticipated, along with the customary boxes of macaroons.

She enjoyed classical music and the arts, and would discourse on philosophy or the arts "en passant" during busy morning surgeries. Fionnuala was always on the go and had a seemingly boundless energy and drive. She had an uncanny and sometimes infuriating ability to finish her evening clinic on time, no matter how far behind she was running.
Then off she went , like a whirlwind, to Sunday's Well for tennis.
Family was of paramount importance to Fionnuala. She will be greatly missed by her brother Eamonn and sisters Mary, Helen and Columba. She spoke warmly about her many nieces and nephew and took her role as aunt seriously, interesting herself in their education and well- being, and enjoying their company immensely. On the 29th of December 2012, Fionnuala hosted the christening of her grandniece and namesake, Nuala, in her home, an event attended by 40 family members which she had meticulously organised months in advance. It was an inspirational focus during her difficult final months.

Patients attending the practice are clearly heartbroken as a result of her death. Many recount stories of her kindness, sincerity, her smile and warm personality. She was an integral and highly regarded member of her community.
A portrait of Fionnuala's character would require a varied, complex palette of colours. Serious grey tones would reflect her academic skills, pursuit of excellence and professionalism. Softer hues would reflect her warmth, kindness and humanity. But what will be most missed are the vibrant lime greens and acid pinks, accent colours of her character. Her devilish eye for detail was often reflected in the jewellery and accessories she wore. Her humour and great sense of occasion are a great loss.

In 2011, Fionnuala undertook the herculean task of remodelling her family home with her usual fervour and determination, to make her own impressive modernist mark. Height, light, space and functionality formed an impressive modern envelope around the heart of the old family home. Inside, the decoration comprised a comfortable eclectic collage of old family furniture, uber modern fixtures and fittings, lightly limed oak flooring and the typical pastels and acid coloured accessories which boldly declared her character. These declarations are sadly missed.

The poem "Phenomenal Woman", by Maya Angelou (b 1928) nicely and succinctly summarizes the late Fionnuala Quigley, a phenomenal woman.
Dr. Brendan Connolly ■

The Alumni & Faculty Committee have been informed of the deaths of Dr. William Navin, aged 100 (1940), Dr. Michael O'Shea (1957) and Prof. Jack Sheehan (former Professor of Physiology). We extend our sympathy to the families and friends of all deceased Medical Alumni.

Some of the above appreciations have been reproduced with the kind permission of the Irish Times, The Birmingham Post.

UCC Medical Alumni Annual Scientific Conference

September 11, 2014

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PROFESSOR DENIS O'SULLIVAN CLINICAL RESEARCH FELLOWSHIP

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Applications will consist of the research proposal, Curriculum Vitae and two references. Applicants should submit six copies of each to:

Prof. Catherine Keohane, School of Medicine,
Brookfield Health Sciences Complex,
University College Cork, College Road, Cork

from whom further details may be obtained, and who may be contacted for informal discussion.

Tel: 021-4901587; Fax: 021-4901594;
E-mail: catherine.keohane@ucc.ie

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Contact Details:

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