# LEGENDS IN UROLOGY

***Ralph W. de Vere White, MD***
***Director, UC Davis Comprehensive Cancer Center***
***Associate Dean for Cancer Programs***
***Distinguished Professor, Department of Urology***
***Codman-Radke Chair in Cancer Research***
***Sacramento, CA, USA***

To be asked to contribute to this series by *The Canadian Journal of Urology* is a huge honor. To consider one's self a legend is difficult, and some might say dangerous. Looking at previous contributors – true legends – let me hope the editors did not make a mistake. This is a chance to reflect on how my career developed, and what accomplishments I leave to the field of Urology, which has given much to me. It is an opportunity to first pay homage to my mentors, without whom none of this would be possible, and secondly, to make the case for team science: I believe my career is a testament to what one can contribute to and receive from team science that is best for both.

Certainly as I walked across the tarmac in Dublin with Antoinette, my wife, and two small sons, on our way to Duke University for Urology residency, I could not have imagined some 40 years later, I would have the privilege of penning this account. While at school, due to my father's profession, it was assumed that a career in law lay in front of me. That all changed when I heard that my grandmother had died of breast cancer. Law was gone and medicine beckoned, I would be a surgeon. All occurred watching a rugby match at school; who said watching football was not a productive pastime?

In 1964, with 250 other hopefuls, I entered pre-med at University College, Dublin. On the first day, all 4 foot 10 inches of Dr. Crowley, affectionately known as "Ma" Crowley entered the auditorium, stood on a box behind the lectern, and said "students, look to the person on your right, look to the person on your left, but don't get too fond of them as half of you will be gone by next year." Luckily, I survived the cut, and 2 years later started my clinical rotation at St. Vincent's hospital in Dublin. Here I came under the influences of two urologists, Mr. Frank Duff and Mr. Dan Kelly. Mr. Duff made every operation look as if the tissue planes were doing the work. Between them, the urology patients, and the nursing staff, the decision was made: it had to be urology. In Ireland at that time there was no such specialty of Urologic Oncology; indeed, there were only 12 urologists in the land. Together they set me up for my residency at Duke, in preparation for which they helped me write my first two papers.

The family arrived at Duke in June of 1974. The Duke Urology Division, indeed the whole of the Duke academic set up, opened my eyes to academic urology and what it could be. I was suddenly part of a large coordinated effort comprised of subspecialist working as a team. Excellence, opportunity, and comradeship abounded. Three of my fellow residents, George Hemstreet, Jorge Lockhart and Charles Brendler went on to chair Urology departments. George Webster, a fellow, rewrote the book on female urology while Marston Linehan, runs the Urology branch at NCI, and unraveled the molecular mysteries of renal cancer. How could one not thrive in these surroundings? How lucky was I that Dr. Glenn, my division chief, felt that the US was graduating too many urologists? To solve the problem, while still keeping his residency full, he brought in three foreign graduates. Dr. Glenn was a fantastic mind, Chief of Urology, Dean, President of a University, and Cancer Center Director. His support for his residents was legendary, as was his passion for urology, especially Duke Urology. It was contagious. He taught us to think, to evaluate, and then to do, and having done, to take responsibility for ones actions.

Four months before we were to return home, the job in Ireland fell through. Dr. Glenn offered to support the family while we worked things out. Think of it, he owed us absolutely nothing, he had given me a fantastic training. It speaks to the man, but also to the incredible generosity that I and my family received throughout our 40 years in this great country. Our predicament, not for the last time, was resolved when two further mentors came to our rescue. Dr. David Paulson, who guided my residency, helped me prepare for an academic career in Ireland. He taught me how to write

papers. The first one I think he had me revise with, what I think they call in reviews "major revisions", about a dozen times. This taught me a valuable lesson, regrettably not always followed, that you can help someone accomplish their goals, but you cannot do their work for them. So with Ireland rapidly and sadly fading in the rearview, David fixed me up with my next mentor, Dr. Carl Olsson. The family drove to Boston for our first academic position at Boston University in June of 1977. Due to the sudden change in plans, I had no medical license and no down payment for a home. Carl would hear nothing, but he lent us, before I even started work, the down payment for our Boston home. I certainly do not want to ruin Carl's reputation for being slightly brusque at times, but this was only the first of many kind deeds he bestowed on me and many others. Always without fuss, always as if it was the correct thing to do, indeed the only thing to do. At B.U., Carl started my research interests studying the androgen receptor. I had time, as it took me 6 months to get my exams and license in hand. I extended my research utilizing a spontaneous renal cancer rat model. Here I learned to put together research plans, obtain funding, and build the necessary team.

The next growth in my career came when Dr. Olsson, moved to Columbia Presbyterian Hospital as Chair of Urology. I went with him and the family set up shop in Larchmont. Carl tasked me with increasing Urology research at Columbia, a high degree of trust. Carl is a fantastic innovative surgeon; I believe he did the first orthotopic kock pouch in a female patient in the country. He had a marvelous ability to see what was coming, and what would really make an impact: he grew my research efforts, and he hired Dr. Ralph Buttyan, who to this day is a major contributor to Prostate Cancer Research.

My basic science research training started in earnest when Dr. Arlene Deitch, PhD, a cell biologist who was working on flow cytometry, took me under her wing –something Arlene continued for the next 26 years – while Carl provided seed funding. Our first paper in cancer research came out 3 years later, in which we had utilized DNA analysis to try and predict chemo-sensitivity in the rat renal cell model that I had brought from B.U. We quickly followed with studies utilizing the flow cytometer and DNA analysis in prostate cancer and urothelial cancer. With Dr. Buttyan's help, biomedical studies in prostate cancer continued. When we arrived at Columbia, Dr. Harris Nagler had stayed on as a fellow in infertility – my arrival must have been a bit of a shock. He was extraordinarily gracious about the change in his plans. It was through Harris that the infertility work that I had been doing at Boston was transferred to Columbia. Harris did some outstanding research work, notably on the effects of torsion on future fertility. He was a great friend and extremely helpful in those early days in Columbia. Thanks to these, and others, I gained administrative experience and built a CV over 4 years in New York.

I didn't know much about UC Davis when they called about their vacant Chair of Urology. It helped that it was a freezing February day in New York. I never forgot that first flight to Sacramento (the University is in Davis while the hospital is 12 miles down the road in Sacramento) as we descended over Lake Tahoe and the snow clad mountains of the sierra's, truly magnificent. Six months later, the family settled in, I went to work as the second chair of Urology at UC Davis. My dilemma prior to taking the job was that Davis needed a clinical program built and their research program started. The Dean told me that I would need to start the research program at the University in Davis, as people did not do research in Sacramento. The other slight problem was how to recruit a PhD under these circumstances. While describing all of this to Arlene Deitich on my return to New York, she announced that the answer was obvious. She and her husband Walter would leave New York where, they have lived for 62 years, and come with us. How generous and how trusting of them both, how fortunate for me and the Urology department at Davis, and the University at large.

Our lab in Sacramento was in an old state fairgrounds building. We purchased our first Coulter Flow Cytometry machine – it was like getting a fancy sports car. We then set about putting together a Urology research program. Our first NCI funding was awarded to study DNA flow cytometry in prostate cancer, our second grant was a part of a NCI group evaluating the role of flow cytometry in managing urothelial cancer: so started the urology research lab. Getting to the next level, NCI told us, with the first renewal of the DNA grant, would mean branching out into molecular biology of prostate cancer. Two others at UC Davis joined the effort: Dr. Paul Gumerlock, PhD who was working at that time with Dr. Frederick Meyers, then a young medical oncologist, now our Executive Associate Dean.

In prostate cancer, the laboratory has focused for the past decade in understanding the functional role of microRNAs in CaP. We were among the first to publish on the functional importance of altering microRNAs in CaP. After we had the DNA flow cytometry and tumor suppressor work in prostate cancer underway, we joined forces with Dr. Syders and Lee

in Michigan, Dr. Gary Miller in Denver, and Dr. Jackson in Washington, D.C. to submit and got funded a P01 in prostate cancer. This was my first entry into true team science. Without everyone's input, this would not have come about.

Warmly welcomed at this time, UC Davis joined SWOG and Dr. Meyers and I joined the Urology working group, welcomed by the then leaders, Dr. David Crawford and Dr. Derek Raghavan. This was my next experience with team science. I went on to become the PI of the UCD UCOP grant and the initial leader of the Correlative Science Program. Over the years I have had a chance to publish some 14 different papers with 41 different authors and received two grants. For any young academic urological oncologist, I strongly recommended joining and participating in cooperative groups. It helps you learn, provides opportunities, and leads to many marvelous friendships.

The growth of the urology clinical program also required new faculty recruitments and a focus on developing a sub specialty department. For many reasons I believe neurourology was the place to start. Again, Dr. Paulson came to my help by introducing me to Dr. Anthony (Tony) Stone. Tony came from England to Duke as a fellow with George Webster, stayed on as a resident, so he was a fully trained general surgeon, urologist, and neurourologist: exactly the breadth of experience we needed. Tony joined UC Davis the year after I came and has built a stellar program in female urology, incontinence, and neurourology. In those early days he also got our endourology program underway. We were fortunate to be joined by an outstanding faculty.

In 1996, the next big change occurred. Dr. James Goodnight, a surgical oncologist who started our cancer center, moved on to be Chair of Surgery. In large part because I had put together a P01, I became Director of our cancer center. At that time, we had $17 million in funding per year. With huge support from the institution, buildings were built, Dr. Hsing-Jien Kung, an expert in cancer virology, tyrosine kinases functions in prostate cancer, was recruited from Case Western Cancer Center to be our founding Associate Director for Basic Science; and Dr. David Gandara, an international expert in lung cancer, clinical trials, and chair of the SWOG lung committee, became our Associate Director for Clinical Research. Running a cancer center is the ultimate in team science: we have 285 members who collectively led to the cancer center receiving designation in 2002. Over the next 8 years, we grew our funding to over $100 million a year and became the 41$^{st}$ NCI designated comprehensive cancer center in the country in 2012. It has been a long slog yes, but beyond looking after patients, nothing in my professional life has been more satisfying. It is like Wall Street, did you make your last quarter? What is in your future portfolio?

When I took over the Cancer Center, the medical school agreed I could hire an additional urological oncologist. I was fortunate to persuade Dr. Chris Evans to join us. He was a marvelous recruit. Chris proves that "triple threats" still exist. When we talked at the AUA in Dallas, prior to his coming, Chris asked why I wanted him to come. I said when the time was right I wanted him to take over the Department of Urology. I am proud that that occurred in 2006. Under Chris' leadership, the department has flourished, rising to number two in grant funding of any Urology departments in the country. The only test remaining for Chris is dealing with me as I head into my dotage.

It was a family that left Ireland 40 years ago. It is a family that has lived the American dream. Antoinette, my wife, has spent over 25 years helping the homeless in Sacramento. I was running a search not long ago, and the candidate mentioned she had googled me. She said that while my career looked truly impressive, my wife appeared to be far more interesting, a sentiment repeated recently by my incoming Dean. I totally agree. Our three sons have enriched the family with three fantastic daughters-in-law, and together they have given Antoinette and me six glorious grandchildren, what my mother would call our new hostages to fortune.

So what advice can I pass on to those at the start of their career? I have already addressed the importance of mentors and my support for team science. Success in one's career does not rely on brilliance –a commodity in short supply– but rather on working smartly. We are given different degrees of talents and all we can ask is that we make the most of our personal allotment. Finally, I think there is a great temptation in life to be motivated out of a fear of failure, rather than out of the hope of success. I would encourage everyone to think about this. It is so much better to do things out of hope of success. So at the end of the day as Antoinette and I reflect on our good fortune, thanks to our boys, we can slip down to de Vere's Irish Pub, and maybe have a quiet libation. If in town, please come join us.

**Ralph W. de Vere White, MD**
**Sacramento, CA, USA**

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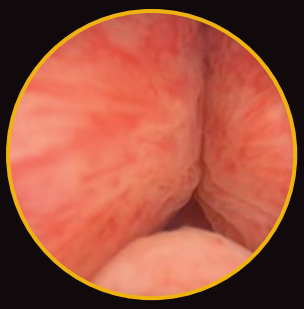
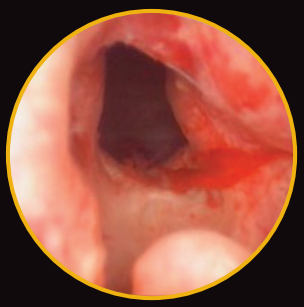


*Pre-procedure*



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1. Data on file at NeoTract; 2. Chin, P, et al., Urology 2012; 3. Woo, H, et al., Journal of Sexual Medicine 2011; 4. No instances of de novo, sustained erectile or ejaculatory dysfunction. Roehrborn, C, et al., Journal of Urology 2013, LIFT Study

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