



# LEGENDS IN UROLOGY: REFLECTIONS ON A CAREER IN ACADEMIC UROLOGY

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The biggest influence on my career choice was my father, Peter L. Scardino, a Hopkins-trained urologist who loved his practice more than anything except his family. As a child, I spent time in his office. Later, he brought me to the OR as an observer, and I was hooked.

## Early Education

I was a mediocre student in a mediocre parochial grammar school. To start 9th grade on schedule, I needed a tutor for algebra and Latin. Mrs. Edwards and I hit it off immediately. She taught me the importance of daily homework and good study habits. A summer at Andover Academy exposed me to top-notch teaching in history and English. The next two summers I attended a National Science Foundation program at the Worcester Foundation for Experimental Biology and learned the basics of performing laboratory experiments.

## College at Yale and Medical School at Duke

Yale was my first-choice college. As a pre-med, my first year was packed with science courses with long labs, leaving scant opportunity to explore humanities. Sophomore year, I switched my major to religious studies, but as senior year loomed in the near future, I realized that I would rather become a physician than a biblical scholar. I enrolled in Harvard's summer course in organic chemistry and did well. I applied for medical school and was accepted by Duke for the class of 71. Duke had completely revised their curriculum. Basic sciences were covered in the first nine months. The second year was devoted to the required clinical rotations. For the final two years, each student was allowed to develop an individual curriculum with faculty oversight. James Glenn, Chief of Urology, took me under his wing and lobbied hard to get me to enter his field. Sophomore year he offered me a position in his urology residency at Duke! Some other faculty surgeons who had trained at the MGH advised me to go there and have a look before I made my decision. Senior year students often do an elective externship for a month or two at the hospital where they hope to train. I spent a month of surgery and one of urology at the MGH. I came away impressed by the surgical faculty and house staff. They were great teachers, who treated each other with respect. On the first day of my urology rotation, I observed the chief resident, Donald Skinner, taking a senior resident through a radical perineal prostatectomy. Skinner was on his way to join the faculty at UCLA. After watching him operate, I knew that UCLA was where I wanted to go to complete my training. He was a superb surgeon and dedicated teacher who was already well known internationally for his formidable

surgical skills. Watching Don Skinner operate confirmed my plan to be a urologic oncologist caring for people with difficult and challenging cancers.

## Deciding on a Specialty, Planning for Fellowship at NCI, Then Urology Residency at UCLA

While I was still a medical student at Duke, Sam Wells, a great general surgeon and wonderful teacher, recommended that I apply for the fellowship in surgical oncology at the National Cancer Institute (NCI). With strong letters of support and a great interview focused on the unusual curriculum at Duke, I was lucky to be accepted as a fellow in the Surgery Branch of the NCI, to begin after I completed the two-year core surgical training at the MGH. I would still owe UCLA a required lab year plus 3 clinical years. Fortunately, Steve Rosenberg (Chief, Surgery Branch) agreed that I could spend three straight years doing research at the NCI and then go to UCLA (Joseph Kauffman, Chief, Urology Service) for the final three of 8 years of postgraduate training.

## Core Surgical Training at MGH

The junior residency in surgery at the MGH was notoriously difficult, but the residents were happy because they got to operate often, and they understood that the only way to keep busy in the OR was to cover more inpatients. In the residents' mind, the choice was obvious: keep the OR busy and we will take care of any increase in inpatients. The residents in my years were a close-knit group who had great respect for each other. They were thrilled to be working at a top-notch hospital where many diverse groups worked well together. The whole hospital staff practiced the aphorism that the patient always comes first.

## Fellowship at NCI

The surgical oncology fellowship at the NCI began after 2–3 years of surgical training and lasted for 2 or 3 years. It included four months in the OR and the ICU combined with 2 to 3 years in the outpatient clinic. Each fellow was placed in the lab of a senior surgeon/scientist. I studied radio-immunoassays developed at the NIH that measure nanomolar levels of human chorionic gonadotropin (HCG) and alpha fetoprotein (AFP) in the blood of patients with a germ cell tumor of the testis. Such patients were sent to Walter Reed Army Medical Center (WRAMC) immediately after diagnosis. We showed that changes in the presence and levels of HCG and AFP in the blood correlated well with clinical changes during treatment, with the duration of the response to chemotherapy, and with the results of surgery. We also collaborated with the pathology fellow, Bob Kurman, to stain slides of the primary lesion and metastases, along with nearby normal appearing tissues. HCG was found almost exclusively in the syncytiotrophoblastic giant cells, while AFP stained primarily yolk sac tumor and less densely in clusters of embryonal carcinoma. This typified the multidisciplinary collaboration possible at the NCI, combined with a bit of good luck and wise timing—all factors that make the NCI such a fruitful place to work.

## Urology Residency at UCLA

Mike Lieber, a close friend and a urology resident, transferred from the NCI to UCLA to complete his training a year ahead of me. Very bright and with a comprehensive knowledge of medicine in general and urology in particular, Mike took a real interest in me, tried to keep me out of trouble and teach me urology. While I was capable of performing several major operations for cancer and delivering scientific papers at national meetings on a variety of subjects, I did not know how to perform the basic endoscopic procedures.

## To Houston and Baylor College of Medicine

It was bittersweet when left for Houston in July of 1979 to join Gene Carlton at Baylor College of Medicine as their first fellowship-trained urologic oncologist. The Baylor department met all my essential criteria. The Chair

was committed to recruiting fellowship-trained faculty in all major areas of urology. His vision, insight, and wise guidance set an example for new faculty and residents to follow. He had already brought a program leader in stone disease on board. Similar programs were starting in pediatric urology, male sexual medicine, and surgery.

The central reason I focused on Baylor was Carlton's manner. He treated me as an equal, despite my limited leadership experience. We quickly learned that we could trust each other, which gave me confidence that we could accomplish great things together, and that he would do whatever was necessary to help me succeed.

## Management Tools and Skills for Administration for a Chair

Although my interest was in caring for patients with genitourinary (GU) cancer, I found the going slower than expected. I started to explore why the department had so many problems with personnel, business, and management issues. The President of Baylor suggested I meet with a retired businessman he had hired as a consultant to help bring modern management tools to the medical school and its affiliated hospitals. He told me to find a number of other faculty to identify and analyze a few of these problems. We met regularly to learn how the money flows through a center like ours. After that, he would invite CFOs from the surrounding hospitals to discuss business management in medical centers with us. The exercise inspired me to take a two-month course in Executive Management at The University of Houston.

## Databases: A Critical Tool for Patient Management

At Baylor, I also learned the importance of databases. Patients treated with various protocols were followed every 3–6 months. Those with a steadily rising PSA were likely to recur sooner than patients with an undetectable or a low and steady PSA level. With nearly 1000 prostate cancer patients treated with Carlton's "gold seed" protocol in the database, and a short walk to use MD Anderson's computer to analyze the results, we were ready to present the concept of a database and some of our early results just as the annual meeting of the Clinical Society of Genitourinary Surgeons (CSGUS, or for those 25 members who were chairs of urology from the best programs in the country) was hosted in Houston by Gene Carllton in the mid 1980s. Our goal was to demonstrate the tremendous advantage in clinical research of this form of data collection. The audience was spellbound by the presentation, and several asked if they posed a question to the database, how long would it take to get a result. I answered "same day" and went off to the computer and returned an hour later with the results. While biostatisticians and academic physicians were familiar with databases, most urologist were not, and we made quite an impression. Carlton and I collaborated on many such projects, and encouraged our faculty to take up this tool in their own area of interest.

## Walsh's Anatomical Radical Prostatectomy

In 1982, Pat Walsh of Johns Hopkins performed the first "anatomical" radical prostatectomy (RP). In '83, I arranged to visit Walsh and observe his technique. Bill Catalona from Washington University in St. Louis, was there the same day. The 3 of us—Walsh, Catalona and I—spent the day clarifying terminology and discussing anatomy, as Walsh did everything he could to optimize visibility in the pelvis and paused to point out key steps in his technique. We were especially interested in how he preserved the cavernosal nerves so crucial to preservation of erectile function. It was remarkable that seemingly minor changes in the classic technique for RP resulted in such large decreases in side effects, allowing many men to recover erectile function and continence earlier than with the traditional procedure. In the beginning there was considerable doubt that his results were due to his surgical technique and more likely resulted from patient selection. Most of the cases presented were young men with small, well-differentiated cancers. In the end, however, Walsh had discovered something new and important, which, along with PSA testing, completely changed the early detection and treatment of prostate cancer.

In the mid-80s Carlton decided to step down as Chair. He invited me to apply, but I was not ready to do so. Fortunately, he agreed to reevaluate the situation in 4–5 years. In retrospect I was experiencing early signs of burn out and I was advised to slow down my professional activities and stabilize my emotional life before I jeopardize my career and family.

## Chair of Urology at Baylor

By the late 80's I felt ready, and in 1989 I was appointed Chair of the Department of Urology at Baylor. A new Chair can face significant challenges especially one who trained as a resident in the same program. Soon after my appointment, one of the senior faculty complained to Carlton that the new practice plan reduced his salary unfairly and gave too much to the junior faculty. Carlton listened and replied, "these decisions are made by the Chair, so you'll have to go see Peter". That ended the complaints. A chairman's first priority is to ensure that patients receive excellent care. This requires building a talented, diverse faculty, providing competitive salaries, and recruiting talented residents and fellows—since they are your best source of future faculty. The chair should also lead in building a research program that produces genuine advances.

## Baylor Spore in Prostate Cancer

Research requires funding. Seed money can come from a medical school or philanthropic contributions. With the help of a former chair of Urology, Russell Scott, we developed a philanthropic program that was vital to the success of our research. By 1992 we had collected over \$5 million, occupied 3000 sq ft of basic laboratory space and were supported by several R01 grants. Eventually the research must be competitive enough to win federal grants from the NCI, DOD, VA, etc. In 1992, the NCI issued an RFA for a new type of program project, a "SPORE" (Special Program of Research Excellence). It was a major undertaking, but our prostate cancer team met and agreed we should take a shot at it. Gene Carlton through his weight behind our application, and we drafted every available administrator, nurse, technician, fellow and faculty member to help. Tim Thompson led the laboratory research and I led the clinical investigators. We worked night and day, through the Christmas holidays, to meet the Feb. 1st deadline.

## Recruitment to MSKCC

We won the SPORE, which attracted considerable attention. As a result of the SPORE grant, in 1997, Memorial Sloan Kettering Cancer Center (MSK) contacted me, and we agreed to open discussion about moving to New York to follow Bill Fair as Chief of the Urology Service. I've always loved the city and was excited at the prospect of moving there.

After my initial visit to MSK, it was clear that the institution needed a leading surgical expert in nerve-sparing radical prostatectomy. At Baylor we were doing more than 800 radical prostatectomies a year, while MSK was doing 250. I realized there was a major opportunity if we could bring the right faculty to increase the prostate program to work with the strong but small clinical faculty here while we worked to strengthen programs in other urologic cancers. At that time MSK's urology program included 6 clinicians and a laboratory director, Skip Heston (who, incidentally, cloned the gene for PSMA, making possible the next major step in detecting metastatic prostate cancer). While some of the clinical faculty focused on just 1 or 2 cancers, most took care of whoever came to clinic that day. There was little sub specialization. Without differentiation and targeted recruitment of patients, there was little chance of success. I saw no way to build a modern, world class program in urological oncology without new resources, so I turned the job down. I went back to Houston and began to design the next steps in the development of urology at Baylor. We had an excellent pathologist, Tom Wheeler, but no ambitious radiation oncology expert in prostate cancer. Medical oncology was not particularly interested in prostate cancer. I didn't see an opportunity for the growth of therapeutics for that disease. There was no statistics program at Baylor, so I had to go outside to hire a statistician, Mike Kattan, who became famous throughout oncology as "Mr. Nomogram". I was incredibly lucky to find some outstanding people to help us continue to grow (James Eastham, who became Chief of Urology at MSK in 2008, and Bernie Bochner, an expert in bladder cancer and urinary diversion). MSK remained in the background, contacting me from time to time. I decided to go back there to see if I could talk them into committing more serious resources to the vision I had. The time seemed right for me to accept the position.

## Difficult Decision

MSK now offered to create urology as a separate department and to build the new Sidney Kimmel Center for Prostate and Urological Cancers that would house our administrative, academic, and clinical facilities. I accepted the job in 1998, after completing a thorough review of the service and a strategic plan for growth and excellence.

The decision to create a department for urology was controversial, and progress stalled at first. The MSK president, Paul Marks, together with physician-in-chief Dave Golde got things moving. A challenge at MSK was support for the research program. The funds earned from clinical income had to go to faculty salaries. We needed a commitment for funds from the institution to hire new faculty members. A SPORC grant was essential to give this extensive new research program validation until it could rest on its own laurels. This new SPORC required an enormous amount of energy from myself and several faculty from other departments (medical oncology, cancer biology, radiology, etc.) Fellows and residents pitched in to help with writing and editing. We completed the application on time and in 4 months heard that once again we would have our own SPORC grant and all the prestige that entails.

## Chief of Urology at MSK

At MSK I joined an excellent group of physicians and scientists from every area of diagnosis or treatment of every stage of prostate cancer, including Zvi Fuks, Mike Zelefsky, and their colleagues in radiation oncology, Victor Reuter in pathology, Howard Scher and Michael Morris in medical oncology, Hedi Hricak in radiology, and Charles Sawyers who focused on the mechanisms of molecular biology.

By then the use of PSA and its related kallikreins had grown. Hans Lilja had discovered “free” PSA, and had close ties to large populations of Scandinavian men. Investigators were eager to collaborate with us. When an opportunity arose, we recruited Hans Lilja to our Clinical Chemistry Lab.

## Biostatistics and Nomograms

A weak spot in our program was the lack of statistical support for database construction, study design, and analytic accuracy to improve predictive models. There are several different biomarkers for prostate cancer (DRE crudely measures tumor volume and local stage, PSA measures tumor volume and extent) and Gleason grade measures the degree of dedifferentiation in histologic sections). Mike Kattan established that analyzing the prediction model by using continuous variables significantly improved the accuracy of detection for any relevant end point and improved accuracy when all were combined.

We set out to study which factors were associated with recovery of function given a fixed rate of local recurrence among hospitals or surgeons. After years of research, mostly led by Vickers and James Eastham, we could say with considerable certainty that about 30% of predicted recovery was due to patient (e.g., obesity) and hospital (e.g., access to a referral center for treatment of emergency complications) factors, and 30% was related to the features of the cancer (e.g., seminal vesicle invasion or positive pelvic lymph nodes), and 40% was related to the skill and experience of the individual surgeon.

## MSK Spore

With the SPORC grant funded, we were able to recruit outstanding people who expanded the quality of research. I brought our Baylor biostatistician, Mike Kattan, and his programmer, Paul Fearn, who was brilliant at creating programs, to support urologic research and education.

## Chair of Surgery

In 2006, my eighth year at MSK, I was asked by the institutional leaders to become Chair of the Department of Surgery. That was a very different direction than I had anticipated when I came to MSK, but it was a superb

department with strong leaders and outstanding fellows. I accepted the job and continued to head Urology until we could recruit someone to lead it. I remained Chair of Surgery at MSK for 11 years. Soon after I was appointed, Ron DeMatteo, the vice chair, and I wrote a strategic plan and held a faculty retreat to gain consensus on our goals and strategy. Goal number one was to recruit the most talented people to do the work we wanted to do and not be bound by organizational structure. We needed to get the best people, give them the resources they needed, and expect productive results.

## MSK Board

The board at MSK has been extraordinary, led by Sandy Warner for my first 20 years at MSK then Scott Stuart for the past 5 years, with Lou Gerstner, Dick Beatty, and Jim Robinson, among others who have been important, involved, and supportive. I have sought their valuable opinion whenever I needed help, and they have always responded positively.

## Strategic Retreat and Plan for Growth Both Clinical and Research Urology Thrives

The primary responsibility of a chair of surgery is to assure that the chief of each of the 14 services is performing well, continues to be a nationally recognized leader in patient care in and out of the OR, and is personally satisfied with the performance of all of his faculty members. We moved the Urology Service back into the department of surgery and conducted a search to replace me as Chief of Urology. James Eastham has done a superb job. He is an excellent surgeon and fine administrator. The Urology Service was ranked number 1 in the nation for the last 2 years by US News and World Report.

In my time as Chair my most important contribution has been to select outstanding surgeons for 8 of the 14 service chiefs.

## SKI and Collaborations with Clinical Services

An advantage of working at MSK was the quality of scientists—Nobel laureates, Lasker awardees, and giants in the fields of science relevant to oncology—but there was little interaction between the institute and the hospital where the clinical faculty conducted their research. By longstanding tradition, the Sloan Kettering Institute (SKI) acted independently. There was no rule that their research had to be in an area of immediate importance to oncology. Harold Varmus, MSK's president, made key appointments that focused on cancer-related investigations: Charles Sawyers was recruited to chair the new Department of Human Oncology and Pathogenesis Program (HOPP); Jim Allison to develop his checkpoint blockade inhibitor, CTLA-4, which eventually proved to have an extraordinary, beneficial effect when combined with other checkpoint blockade inhibitors for the treatment of previously fatal, metastatic melanoma; and Joan Massagué helped refocus the lab towards TGF beta and the mechanisms of metastasis.

## Embedded Surgeon-Scientist

Our second initiative was the creation of an embedded surgeon/scientist program. Few cancer surgeons are capable of managing a competitive basic science lab in addition to a thriving clinical practice for more than 5 years and must choose one or the other. The best predictor of success seemed to be the strength of the relationship between the lab head and the surgeon. Dr. Jeff Drebin, an excellent surgeon/scientist who succeeded me as Chief of Surgery, has shepherded 17 surgeons through the program.

## Growth in Clinical Volume

As basic science and clinical surgery became stronger at MSK, the clinical research and laboratory programs grew enormously. Meanwhile, the hospital's strategic plan called for steady growth in the volume of clinical activity.

Over the course of my eleven years as Chair, we increased the clinical volume by ~35%. Cancer surgery was changing as well, developing along two separate lines. One was more and more complicated surgery often in combination with radiation or chemotherapy. We were strong in this and world-class in the care of patients with large recurrent and aggressive cancers.

## Surgical Case Classification: Complex or Standardized

At the same time, much of cancer surgery was becoming more standardized, providing an opportunity to develop codified approaches to low-risk operations such as thyroidectomy, hysterectomy, prostatectomy, and mastectomy, where the standard of care was to do an excellent operation with few complications and a low rate of positive surgical margins, at high volume, but also keep expenses under control with a very short stay. The Josie Robertson Surgery Center was designed from the bottom up with the core principle that quality improvement could only be achieved if we knew what was happening to the patient throughout the surgical experience. We needed to be able to establish programs, particularly randomized clinical trials, that would help us discover ways to increase the quality of the patient experience when surgery was the best treatment. The Josie Robertson Ambulatory Surgery Center treated nearly 50,000 patients in its first 10 years with a transfer rate to the hospital of less than 1%.

## Measuring Quality of Surgical Care

I'd been interested in measuring the quality of surgical care in oncology, where the results seem so dependent on the skill and experience of the surgeon. Large databases were necessary to feed data directly from the clinical record into the research database, which allowed us to ask questions as simple as whether we should allow patients to eat on the afternoon after a major abdominal robotic procedure. Would they be able to tolerate food, or should they be kept NPO overnight? This was possible with our data analysis capabilities.

## The Network

Growth was still necessary. MSK had built seven network facilities, fully equipped to administer chemotherapy, radiotherapy, and outpatient surgery outside of the main campus. With the help of several of the key faculty in surgery, we were able to raise the number of surgeons practicing in the network from nine to over 50.

## Stepping Back and Retiring

After a decade as Chair of Surgery I had made my mark at MSK and it was time for me to step down and turn it over to a new leader full of ideas and energy to take our Department to the next level. My decision was precipitated by a diagnosis of Parkinson's Disease, which has had an impact on my agility and balance, energy and sleep, but so far has not affected my cognitive function.

My task in writing this was to describe how my career developed in the hope that learning about the experiences of one academic urologist could provide useful insights to others as they decide the direction and pace of their own career. Of course, I didn't travel alone. I had the great fortune of garnishing the attention and support of amazing partners and colleagues, collaborators and mentors, teachers and students. I name many of these, but had to leave out others, some even more influential on my career, for limitations of space. For all those generous supporters, whether mentioned or not, thank you for sharing your wisdom and knowledge. I could not have done it without you.

A few words from my dad that have stayed with me over the years. Once in my med school days I complained to my dad that I had grave doubts about my future. He offered some encouragement: "Don't worry, you'll be fine." I challenged him: "How do you know that?" He replied, "Well, Peter, you are reasonably intelligent, honest, hard working, and not crazy. Few people meet all those criteria." I deeply appreciate my good fortune in choosing

great mentors and colleagues to work with at each stage of this adventure. As for my Dad, I'll end with one of his favorite quips to me: "You were wise in your choice of parents." He was right about that!

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