LEGENDS IN UROLOGY

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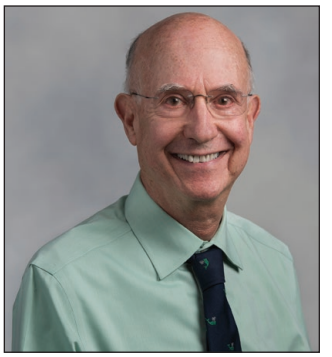

Growing up I had never intended to become a physician. As an undergraduate at the University of Pennsylvania I considered a career in law or economics. I majored in economics and took a range of honors courses in the Wharton school. When I was a sophomore the draft lottery emerged as a major event. My birthday drew a 40 out of 365. Having strong negative feelings about the Vietnam war, I pondered my options. My father, an internist who was a colleague with Howard Pollack, then a young urologist at Episcopal Hospital, encouraged me to consider a career in medicine. I decided to cram all of my premed courses in the last year and a half of college. Never considering myself a science person, I surprised myself with A grades.

I went to medical school at Baylor in Houston. DeBakey had only recently split the medical school from its Baptist University namesake in Waco. The year was 1970, Houston was overflowing with money, Intercontinental airport had just opened up and the city's nickname changed from the Bayou City to Space City. The Colt-45's became the Houston Astros. The indoor, air conditioned astrodome was the height of stadium technology. Baylor was an incredible place with what seemed like more than a dozen hospitals and medical facilities on a green almost suburban campus in the city. The University of Texas at Houston medical school was then just a parking lot for Favrot Hall where we lived. Rice University was just a few blocks away and we used their libraries, running track, and other facilities. The 1974 Superbowl was played in their football stadium. Baylor had carpeted anatomy labs with built in stereo music playing. DeBakey and Cooley were competing at Methodist and St. Luke's Hospitals and being in that environment you felt you were in the center of the medical universe.

Going to Baylor turned out to be a fateful choice for me. While the urology faculty was superb, with legendary figures like Gene Carlton and Brantley Scott, I was aware of them only peripherally. I recall Neil Baum as the chief resident at the Houston VA. The only urology mantra I remember was "Hematuria is cancer until proven otherwise". What changed my life was the surgical culture at Baylor. Surgeons ran the medical center and internists seemed to be there mainly to do their bidding. The surgical chief residents and attendings walked like giants. I remember my chief resident during my rotation at Ben Taub, Bert Strug, whose daughter would later become an Olympic gymnast. From the first days after arriving at school and knowing nothing, my roommates and I would spend our nights several times a week in the Ben Taub emergency room sewing up lacerations and seeing all kinds of emergencies I could have never imagined. Even the 3 months of in-house on-call that surgery residents spent with Dr. DeBakey seemed somehow romantic and I could not see myself in anything other than a surgical career.

There was a perceived shortage of doctors in 1970 and medical schools were admitting more students and enlarging class sizes. Baylor began an experimental 3-year curriculum and my class graduated in 1973. I finished in September and stayed on doing 9 months of surgical residency before the official match for June 1974. I returned to Philadelphia to do a surgical internship at Penn. My father and mother were now working in St Thomas. He became the only board-certified internist in the Virgin Islands. While there he was informed of a legendary urologist in the Virgin Islands, Grant Mulholland's father, who had retired there and then resumed his career. I remember thinking to myself as I drove down Spruce Street to University Hospital after 4 years in Texas, "well, this is likely to be a short stay and we will see where I end up next". Not so.

I originally had my heart set on plastic surgery. I had done several rotations with Mel Spira at Baylor and was amazed by the reconstructive surgery, burn units, and cosmetic procedures. It took only 2 or 3 years of general surgery to be accepted into a plastics residency and I had interviewed at Ohio State and University of Pittsburg. However, the Penn surgical residency was 5 years and structured so that the first few years residents primarily took care of very sick patients but did not get much operative experience. I quickly realized that even though I was accepted into a plastics program, I felt that I would be ill-prepared unless I finished my surgery at Penn, and I couldn't see doing 5 years of the surgery residency. I was very lucky to have had a surgery rotation at Children's Hospital with Dr. C Everett Koop. He was without a doubt the most incredible surgeon I have ever seen. Watching him operate was like watching a fine violinist or artist. He could do a case in 20 minutes that would take a skilled surgeon 2 hours. What's more incredible, if you were doing the case with his assistance, you would do it in 20 minutes.

I rotated on urology during my Penn PGY1 year and met John Murphy, the chair, Grant Mulholland, and a new urologist just back from the army who was incredibly smart, worked all hours of the day and night, and thrived on tedious, complex surgical cases that would run long into the evening. I was looking for a surgical subspecialty to settle down in and I remember Alan Wein calling me into his office and offering me a position. Because the program was filled for the following year, Alan offered me a fellowship position in the Harrison Department of Surgical Research to follow my PGY2 surgery year, and then to begin the first of 3 clinical urology years. I took the spot.

Grant was fun to operate with and had brought with him from Virginia research on urinary tract infection and bladder host defense mechanisms. During my research year I operated at the Philadelphia General Hospital on the Penn Campus which the city was soon to close. PGH had its own residency run by Terry Malloy, and near the end house staff learned to walk on the upper floors at night because the first floor was considered too dangerous.

I was fortunate in that Lowell Parsons and Stan Shrom preceded me in the lab and I advanced their research on the bladder glycosaminoglycan layer and its role in preventing bacterial adherence. George Benson did some great work with Alan Wein on neurourology and urodynamics which I became involved with during my residency. Joe Corriere, John Gregory, and Harry Schoenberg had all been a part of Penn Urology and were also very influential though they had left Philadelphia before I arrived.

After I had been a Penn Urology resident for 1 year, Grant left to become Chair at Jefferson. Alan, by this point, was doing the bulk of the urologic surgery at Penn and working ungodly hours. He was fast becoming a recognized name in the field and remaking neurourology along with his close cohort of Jerry Blaivas, Ed McGuire, and Bob Krane. He had brought Bob Levin, PhD to the urology research lab and Bob had the knack of making anyone he worked with famous.

I remember publishing my first paper with Vic Carpiniello on whether or not ureterotomy for stone extraction should be closed or left open. There were no IRB issues, just piles of patient charts on his kitchen table to go through. I co-authored a paper on the effect of oral bethanechol on urodynamic results in normal individuals. As a resident, we started doing urodynamics with water by gravity, and then moved to carbon dioxide "high tech" units. Working with George Benson both in the laboratory and in the operating room was a unique and extremely valuable experience I treasure. I wrote up my lab data showing that minute amounts of heparin could prevent bacterial attachment to rabbit bladders that had their mucopolysaccharide layer denuded with dilute hydrochloric acid. Harry Schoenberg gave me first prize for it at the Philadelphia Urological Society resident contest. I read Tom Stamey's two books on urinary tract infection and marveled that he had developed much of the data himself and wrote the definitive texts single-handedly. I saw from observing Alan that one could be influential in urology by picking a niche and trying to advance that small part of the field. He would do so by making neurourolgy understandable for the practicing clinician, and this would be a major influence for me with regard to interstitial cystitis/bladder pain syndrome in the future.

Alan hired Stan Greenberg, a really bright and superb resident who had just finished, to help with the urology workload. I was finishing my residency and John Duckett, Chief of Urology at CHOP, had arranged for me to spend a year as a senior registrar in Portsmouth, England. While John was technically fantastic, he was unique in his creativity and could modify, improve, and develop brand new surgical procedures with ease. He had

the knack of making anyone he spoke with feel important and the center of his attention. He had relationships with urologists all over the world. I was very excited about this opportunity and looked forward to working in another system. I was to come back and join Alan and Stan after my year away. Alan called me 10 months later and asked me to return immediately. He had become the Chief of Urology while I was away and Stan had moved to Columbia, South Carolina to join another ex-Penn resident, Dan Shames, who would go on to become an influential urologist at FDA.

My time at Penn between 1981 and 1990 was very special for me. Being young, I was very close with the residents which I enjoyed. I made many lasting friendships with them. Urology was not as specialized as it is today, and I operated on many complex cases with superb backup always around if necessary. Howard Pollack was chief of uroradiology and the smartest urologist and nicest person I could ever imagine. He had the answer to any diagnostic question and at conferences practiced the Socratic method, always pulling the right answer to a question from whomever was put on the spot and acting as if they had known it all along.

My research on urinary tract infection and bladder host defense mechanisms pointed me in the direction of interstitial cystitis in my first few years in practice. I met the director of the newly established Interstitial Cystitis Association, Vicki Ratner. We appeared live on ABC's Good Morning America twice in 1984, and after the first appearance the program received 10,000 letters from desperate patients, suggesting that this was not the rare disease portrayed in the literature. NIDDK took note and with the help of Bob Levin, our PhD, I received the first RO1 grant to study the disorder. I also organized the first international meeting to bring together physicians and scientists from around the world to discuss the state of interstitial cystitis appended to the AUA June 1988 Annual Meeting in Boston. This lead directly to the NIDDK November 1988 meeting that established research guidelines for studying the syndrome and advanced interest in the disorder world-wide. The Boston meeting was the genesis for *Interstitial Cystitis* edited by Hanno, Staskin, Krane, and Wein and published by Springer-Verlag, the first book devoted to IC. A chance encounter with an IC patient on amitriptyline for depression in our practice put forward the idea that this medication could be useful in treating the syndrome.

The Boston meeting was the first of what would come to be 3 decades of international meetings, conferences, and publications. All were focused on advancing the field and getting harmonization. Meeting and working with urologists, gynecologists, and scientists from North America, Europe, and Asia has been one of the most enjoyable and productive parts of my career.

I enjoyed working with Keith Van Arsdalen and Bruce Malkowicz and of course Alan Wein. All were willing to help out with coverage, drop what they were doing during a difficult case if I needed their expertise, and support me and let me bounce ideas off of them. Terry Malloy and Victor Carpiniello were trusted resources at Pennsylvania Hospital. All made the long hours fun. The entire Penn faculty was involved in the "Clinical Manual of Urology" series of basic urology texts that were an outgrowth of the resident grand rounds presentations that were used to study for board examinations by our trainees.

In 1990 I moved from West Philadelphia to North Philadelphia to become the Chairman of Urology at Temple University. This was a challenging job which made me realize that a urology chair has many different spheres in which he or she operates, and a good chair must master them all. The first is the clinical sphere with patients. The second is the responsibility for instituting and providing the basis for a sustained research presence in the department. The third is the hospital and university political sphere where maintaining the influence of your department is critical in acquiring the resources you need to be successful. Finally, there is the national and international urology environment in which you operate and need to be visible.

I was fortunate that Mike Ruggieri, PhD moved his lab from Penn to Temple. He remains there to this day and continues his superb research efforts as well as teaching. I was also lucky to have recruited Mike Pontari to Temple where he has made valuable advances in the field of chronic pelvic pain and is recognized internationally for his work. When I moved to Temple, I became an editorial consultant for *Urology Times* and held that position for 30 years. It gave me the opportunity to work with many remarkable people including Richard Williams who was then Chair at Iowa and is still missed. In 1996 I was elected President of the Philadelphia Urological Society and

invited Marty Resnick to speak at one of our meetings. It was a miserable stormy evening and Marty flew to Philadelphia and right back to Cleveland after the presentation. We were driving from the airport and I always remember what he told me. "If you don't always answer the telephone, it will stop ringing".

I was ready for a change after 9 years at Temple, and moved to FDA in Rockville, MD where Dan Shames, a former Penn urology resident, had become a leader in the Division of Reproductive and Urologic Drug Products. Working with Dan and Mark Hirsch I learned a tremendous amount in terms of what goes on in the "black box" of the FDA and how the process really works moving drugs from an idea to reality. However, after a year I was ready to return to clinical medicine.

I returned to Penn and worked part time in urology and part time in the Department of Clinical Effectiveness and Quality Improvement as a medical director in the health system. At the same time, I completed my MPH degree from the Medical College of Wisconsin in Health Care Administration. Ultimately, I returned to urology full time at Penn. Academically I was involved with AUA guidelines for interstitial cystitis/bladder pain syndrome from the late 1990's to the last update published in 2014. For 20 years I was closely involved with NIDDK regarding interstitial cystitis collaborative research efforts from the original IC database years through the first iteration of the multidisciplinary approach to the study of chronic pelvic pain. Getting to work with Lee Nyberg, a giant of urological research and research administration, was certainly one of the highlights of my career.

I retired from Penn in 2016. It was 42 years since I drove back home from Houston. One of my sons had moved to the west coast and traveling to Northern California my wife and I fell in love with the area. Eila Skinner had an opening for a part time faculty position at Stanford and I feel privileged to be able to work in such a beautiful area in an enriched academic environment and continue to see patients. It has been great to renew friendships with former Penn residents including Chris Payne and Harchi Gill and be a part of this superb training program.

In terms of my academic career, I think I am most proud of my Campbell's chapters on IC/BPS over the last five editions. I wanted to put together the relevant basic sources into a comprehensible chapter that makes it useful and understandable in a way as to improve the care of the patient, and credit all of those who contributed to the current state of knowledge. I am grateful to my colleague Rob Moldwin who is superbly carrying on that effort. The handful of urologists, gynecologists, and basic scientists with an interest in BPS 40 years ago has mushroomed to many hundreds around the world and I think it is only a matter of time until real breakthroughs are realized

While there are many aspects to being a physician in an academic setting, I think that satisfaction is fundamentally based on the uniqueness of the doctor-patient relationship. Patients are now much better informed than ever and much more likely to question and press their physicians. They expect and are entitled to the best care possible. This can be challenging for the provider, but the essence of the doctor-patient relationship has never changed and is hard to replace. Far more than any financial compensation or professional ego-gratification, I think it is the relationship with the patient that has formed the keystone of my career and is what keeps every provider coming back to work day after day.

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