To Americans of a certain age, the date of July 20, 1969 is etched forever in their memory. That is the day that Neil Armstrong stepped on the moon with the words, “That’s one small step for a man, one giant leap for mankind.” The “a” was lost in radio static. Accompanied by Buzz Aldrin, he changed the future of mankind.

Similarly, on June 25, 1990, as Ralph Clayman walked into room 48 in Barnes Hospital in St. Louis, he didn’t say, but could have said, “That is one small step for a urologist, one giant leap for urologic surgery.” Accompanied by Lou Kavoussi, he changed the future of urology.

However, we all must acknowledge that the practice of urologic surgery is a continuum. We are all but temporary custodians of a very special profession. There have been other urologic astronauts prior to 1990.

In the early twentieth century, endoscopic prostatectomy was about in the same state as urologic laparoscopy was almost a century later. Hugh Hampton Young at Johns Hopkins had championed the perineal prostatectomy and later the “punch” operation, where a tubular knife was passed down an endoscopic instrument to cut away pieces of the prostate by feel.

The underpinning that paved the way for transurethral resection of the prostate was provided by an eccentric inventor who was not even a physician. W.T. Bovie held a doctorate in plant physiology and developed an innovative electrosurgical machine in 1920. He worked at Peter Bent Brigham Hospital in Boston and showed it to Harvey Cushing, who introduced it into clinical practice.

The resectoscope was introduced by Maximilian Stern in 1926. This instrument combined the ability to see as well as the ability to cut and coagulate the prostate using a loop of tungsten and electric current. Further modifications of the technique and instruments continued, and in 1931, the Stern-McCarthy resectoscope was developed due to the continued efforts of the instrument maker, Frederick Wappler, and the urologist, Joseph McCarthy.

Milestones in minimally invasive urologic surgery did not cease with the transurethral resection of the prostate. In 1955, Willard E. Goodwin and colleagues at UCLA reported the first use of a percutaneous puncture of the kidney to relieve hydronephrosis. They noted that this advance was in large part serendipitous, as he inadvertently accessed the kidney while attempting a percutaneous arteriogram. Goodwin’s discovery provided
the foundation for the development of percutaneous renal procedures in subsequent decades.

As percutaneous renal procedures continued to proliferate, the next logical progression was transcutaneous procedures. In 1975, while a resident at the University of Munich, Christian G. Chaussy, together with Ferdinand Eisenberger and Bernd Forsmann, began the preclinical and clinical research to investigate applications of the extracorporeal lithotripsy (ESWL) technology. In 1980, he performed the first ever ESWL treatment on a patient. In 1984, ESWL was introduced in the United States for evaluation at six institutions: Massachusetts General Hospital in Boston, Methodist Hospital in Indianapolis, Memorial Sloan Kettering in New York City, the University of Florida in Gainesville, the University of Virginia in Charlottesville, and Baylor Hospital in Houston.

The first laparoscopic radical prostatectomy was performed by Clayman and his team in 1991. This technique was soon embraced on both sides of the Atlantic as Guillonneau and Vallancien popularized laparoscopic radical prostatectomy in Europe. As laparoscopic radical prostatectomy became more widely embraced, the transition to robotic surgery was a natural evolution.

The development of the AESOP and da Vinci robotic systems began in the 1990s, and the da Vinci system appeared in Europe in 1999 and received FDA approval in 2000. In the ensuing two decades, robotic prostatectomy became the standard of care.

If Ralph Clayman is a urologic astronaut, then one of his former fellows, John Denstedt, is aptly noted to be a urologic ambassador. Since finishing his fellowship in St. Louis in 1989, John has served as a guest professor or invited lecturer over 400 times in 60 countries. He was the recipient of the prestigious AUA Gold Cystoscope Award in 1998 and currently serves as the AUA secretary, where he organizes the annual AUA meeting, the largest urology meeting in the world.

It should then come as no surprise that this issue of Urologic Clinics of North America, organized by John, contains contributions from authors from three continents and five countries. John has assembled experts in diverse fields and technological applications, which are truly cutting edge. This issue reiterates that urologic practice is kinetic. Today’s state-of-the-art is destined to become tomorrow’s obsolete; it is just a question of how quickly. In 1969, man landed on the moon; a half-century later, a mission to Mars is within our grasp. In 1990, Clayman performed the first laparoscopic nephrectomy; one can only imagine what urologists will be doing in 2040.

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REFERENCES