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Historical Article

WILLARD E. GOODWIN: EDUCATOR, INNOVATOR AND PIONEER

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CHILDHOOD, EARLY EDUCATION AND DR. ELMER BELT

Willard E. Goodwin was born to Willard and Olive (Belt) Goodwin on July 24, 1915 in Los Angeles, California and died on July 22, 1998, just 2 days short of his 83rd birthday (fig. 1). Willard and his younger brother by 8 years, Donald A. Goodwin, grew up in La Cañada, California, an area just outside of Pasadena in the foothills of the San Gabriel Mountains, where their nearest neighbors were nearly 1 mile away. Lacking neighborhood playmates, Goodwin developed a passion for the outdoors and books. Both interests were encouraged by his father, an avid outdoorsman and employee at Fowler Brothers Book (one of the earliest bookstores west of the Mississippi), and his mother, a collector of books. Goodwin started schooling in a 2 room school house in La Cañada. He finished at the top of his class and entered John Muir Technical High School in La Cañada in 1929.

Goodwin's mother was the elder sister of Dr. Elmer Belt, a distinguished urologist who later became a founder of the University of California-Los Angeles (UCLA) Medical School. Willard and Donald were heavily influenced by their uncle and it was this close relationship that led them to medicine and urology. Goodwin often said later in life that he knew he wanted to become a urologist since eighth grade.

In high school Goodwin was active in the drama club, sports and Boy Scouts. He graduated in 1933 as valedictorian and student body president, and delivered his valedictory address on the virtues of world peace at the Rose Bowl. Since private university was beyond the family means, Goodwin chose the University of California at Berkeley for his undergraduate education.

LIFE AT UNIVERSITY OF CALIFORNIA AT BERKELEY, LIFELONG FRIENDS AND MARITIME ADVENTURES

Goodwin entered the University of California at Berkeley in 1933 to study pre-medicine. He spent 1 summer in college working in the laboratory of Dr. Harry Deuel at University of Southern California studying ketones.[1] This work consisted largely of performing adrenalectomies on rats and it resulted in his first scientific publication.

Possibly one of Goodwin's closest friends in college, and indeed afterward, was Robert S. McNamara, who became president of the Ford Motor Company, Secretary of Defense in the Kennedy and Johnson administrations, and president of the World Bank. Academically successful, Goodwin was elected to the distinguished Golden Bear Honor Society at Berkeley. After graduation and prior to starting their respective graduate programs, Goodwin and McNamara embarked on a voyage to see the world as ordinary seamen. The 2 men convinced the Sailors Union of the Pacific that they were farm boys from the country (evidently an easy task!) and they eventually joined the crew of the President Hoover, a passenger and cargo ship of the commercial Dollar Steamship Line. In China the ship was fired upon mistakenly by the Chinese, thinking it was of Japanese origin. Several of the crew were killed in the attack, and Goodwin and McNamara were put in charge of the bodies. Lacking instructions or a better idea, they shoved them in the refrigerator. Such were the maritime adventures of Goodwin and McNamara.

JOHNS HOPKINS MEDICAL SCHOOL, INTERNSHIP AND MARRIAGE

Goodwin entered Johns Hopkins Medical School in 1937. During the first year he spent his free time taking courses in medical illustration with Max Brodel and medical history with Henry Sigerist. A fellow medical student who would become a lifelong friend and peer was Frank Hinman, Jr. After the completion of medical school in 1941 and prior to internship (Goodwin on the urology service at The Brady Urological Institute and Hinman on the William Osler service in medicine) the 2 homesick young men drove cross country from Baltimore to San Francisco in Hinman's old Buick. They were in such a rush to head home that they left Baltimore as soon as their last examinations were done. They missed graduation by leaving so early and had to receive their diplomas by mail.

Goodwin began his surgical internship under the direction of Hugh Hampton Young at The Brady Urological Institute at Johns Hopkins in 1941. As a surgical intern, Goodwin worked with the newly appointed Chief of General Surgery at Hopkins, Alfred Blalock. Goodwin's chief resident as an in-

FIG. 1. Willard E. Goodwin, M. D., 1915 to 1998, founding chief of urology at University of California-Los Angeles.

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tern on the urology service was Ormond S. Culp, a man who had an influential role during Goodwin's early training. Despite spending the first several months of internship without leaving the hospital, Goodwin managed a little social life. At a Halloween party on October 31, 1941 he met Mary Pearsons Josephs, a medical illustrator at Hopkins. A spark was ignited and they were married 5 months later (fig. 2).

WORLD WAR II AND RESIDENCY AT THE BRADY UROLOGICAL INSTITUTE

By the end of internship in the spring of 1942 the United States was fully engaged in World War II. Goodwin secured a position in the Brady urology residency with a second year appointment from Young just prior to the professor's announcement of retirement effective July 1st, 1942. However, after the first few months of his second year Goodwin was summoned by the Army. With the aid of Young he was able to get an appointment to Walter Reed Hospital with Dr. Lloyd Lewis, a noted researcher on testis tumors. It was not long after that Goodwin was assigned overseas to command a small medical unit in the South Pacific Theater. On the way to the West Coast in preparation for heading to sea Goodwin was notified by telegram of the birth of their first child, Mary.

In the South Pacific Goodwin practiced urology, albeit lacking formal training. He socialized at events for nurses and doctors in New Zealand, and at 1 picnic, he and a nurse were swept out to sea by an unexpected large wave. Dangerously close to the jagged rocky shore, Goodwin maintained consciousness and saved himself and the nurse. For heroism off the battlefield Goodwin was awarded the Soldier's Medal. When the South Pacific duties ended, Goodwin and his men returned to the United States and were reassigned to England to help with D-Day casualties. The next reassignment was to camp Joseph P. Robinson in Little Rock, Arkansas, where the Goodwins were blessed with a second child, Peter Colt Goodwin, in 1945. Wanting more urology training, Goodwin transferred to Brooke Army General Hospital in San Antonio, Texas, where he performed his first nephrectomy, learned about hematuria in patients with sickle cell disease and diagnosed the rare condition of thoracic kidney.

After the war was over the Goodwins returned to California. In January 1946 the family returned to Baltimore, where Goodwin resumed residency under J. A. Campbell Colston. Fellow residents were Herbert C. Brendler, Herbert S. Doroshow and Peter L. Scardino. William Wallace Scott from the University of Chicago assumed the Brady leadership in July 1946. During his laboratory year in residency Goodwin made 2 important discoveries: the description of hematuria in patients with sickle cell disease (he had observed this for the first time in the South Pacific) and the use of mannitol (or its isomer sorbitol that is used now) as irrigant during transurethral resection.[2,3]

There are numerous stories of Goodwin during residency. One memorable moment occurred when Goodwin decided to have a vasectomy after the birth of their third child, Willard Goodwin, II, in 1948. He asked Brendler to perform it, ostensibly because of the Goodwin shoestring budget. In the basement of the Brady Brendler began to apply the topical anesthetic but on the first spray Goodwin jumped off the table and ran down the hall, naked. Brendler began chasing Goodwin through the Brady and upon hearing the commotion Doctor Scott joined the chase. Three men with only 2 in trousers running down the halls of the Brady made a quite a scene.[4]

During residency Goodwin convinced the Hopkins administration to integrate the Brady wards. He moved his black patients from their segregated ward to the same ward with the same nurses as the white urology patients. In his chief residency year Goodwin was approached by William Longmire, a former Hopkins trainee and the new chief of surgery at the fledgling UCLA Medical School, to lead the urology division. Longmire had known Goodwin since his days in medical school and residency. Elmer Belt, a principal force in the founding of the UCLA School of Medicine, had been influential in attracting Longmire to UCLA from Hopkins. Goodwin accepted the job at UCLA, although he was still chief resident and no students had yet been admitted to the new medical school. After visiting UCLA and formally accepting the position Goodwin was asked to say a few words to the other newly appointed UCLA faculty members, who were more senior than he was. Not knowing exactly what to say, Goodwin simply stated, As Mark Anthony said when he crept into Cleopatra's tent one dark night, "I didn't come here to talk." Having said that, Goodwin sat down to a roar of laughter. After finishing his residency in 1949 Goodwin took over the position vacated by Brendler as assistant professor at Hopkins for 2 years before going to UCLA.

FIG. 2. Young Willard and Mary Jo Goodwin circa 1940s

BUILDING THE UCLA DIVISION OF UROLOGY

Upon arriving at UCLA in 1951 Goodwin checked in with his new chief of surgery, Doctor Longmire, and asked, "What do you want me to do, Bill?" To which Doctor Longmire replied, "Just make the best department of urology in the country." Goodwin modeled the UCLA division after the Hopkins program. He slowly began to add faculty members, of whom the most notable was Joseph J. Kaufman, one of Goodwin's first residents at UCLA. When the UCLA hospital opened in 1955, urology beds were the first to fill and spill over into beds allotted for other surgical specialties.

The period between 1955 and 1958 was one of great activity at the UCLA Division of Urology. The following story is emblematic of this time. After inadvertently placing a needle in the renal collecting system of a patient while trying to do a renal arteriogram, the idea of antegrade pyelography flowered in Goodwin's mind. The first time this happened Goodwin removed the needle immediately. The patient did well and Goodwin resolved to inject radiopaque contrast through the needle the next time that this happened. This opportunity occurred at Los Angeles County Harbor Hospital in 1955 during an arteriography attempt in a patient with hydronephrosis. In addition to the antegrade nephrostogram, Goodwin left a tube to drain the kidney, thus, placing the first modern percutaneous nephrostomy tube.[5] Such were the times at UCLA during this era. With hard work, innovative ideas, good leadership and talented faculty and residents Goodwin fulfilled his promise to Longmire.

SABBATICAL AND RENAL TRANSPLANTATION

In 1958 Goodwin took a sabbatical to study renal transplantation with Joseph Murray at Peter Bent Brigham Hospital for 6 months, and graft tolerance and rejection with Sir Michael Woodruff in Edinburgh, Scotland for another 6 months. In Boston he perfected a surgical technique of renal transplantation in the dog laboratory and explored animal models of rejection. Goodwin cultivated his friendship with Murray, whom he had met several years earlier during a conference in Los Angeles. Goodwin took his entire family to Europe for the latter half of his sabbatical year. In addition to the laboratory work with radiation and graft tolerance, Goodwin and family visited much of Europe on weekends. Goodwin read of experiments in animals using steroids to treat various conditions and he extrapolated that steroids might combat post-renal transplant rejection. Upon returning to UCLA Goodwin in 1962 reported the first effective use of steroids for allograft rejection.[5] Because of Goodwin's strong interest in renal transplantation and Longmire's support, the division/department of urology has been the primary service for renal transplantation at UCLA.

THE 1960S AND 1970S

During the 1960s Goodwin continued to build the division of urology to world class status. He instituted a foreign fellow program, whereby fully as well as partially trained urologists from other countries came to UCLA, shared their knowledge and learned from division faculty. This program produced many international leaders in urology. Division residents and faculty also contributed greatly to academic urology. Of those trained under the tutelage of Goodwin 20 became chairmen of urology programs and countless more made significant contributions to the field (Appendix 1). In 1964 Goodwin took his next sabbatical to Indonesia for 6 months, which included studies of pediatric bladder stones. Upon his return to UCLA Goodwin focused on developing the field of pediatric urology. In July 1970 at a relatively young age Goodwin stepped down from the chairmanship position to allow Kaufman to take over the helm. Goodwin believed that it was time for him to focus his attention toward broader academic urological issues and time for Kaufman to step into the limelight. Goodwin took great satisfaction in the success of his trainees, which was epitomized by the selection of his former resident, Patrick C. Walsh, as chair of urology at Johns Hopkins in 1974. Goodwin's bibliography includes more than 460 articles, chapters and books that detail the many significant original contributions that he made to urology (Appendix 2).

PERSONAL INTERESTS AND THE LATTER YEARS

Goodwin always had a love for the outdoors. From hiking through the Sierras and skiing in California as a child to adventuresome hiking and mountain climbing expeditions during his adult life, Goodwin had a passion for nature (fig. 3). He successfully scaled the Matterhorn and climbed Mount Rainier. Many of the fond memories people have of Goodwin outside of urology involve some sort of adventure or harrowingly missed disaster while outdoors.

Paraphrased from an interview with Robert S. McNamara, former president of the Ford Motor Company, United States Secretary of Defense and president of the World Bank:

> Willard from a very early age had a passion for being a urologist. He devoted his life to the study of urology. . .In 1935 or 1936, while at Yosemite skiing with friends, he was at the Badger Pass. . .He was using hickory skis and skiing back country. One of his skis broke and I and another friend started to work our way down the mountain to get a car because Willard couldn't possibly get down the mountain. However, he showed up several hours later walking down a stream around midnight![6]

FIG. 3. Goodwin skiing in mountains

As told by Dr. Joseph E. Murray (Nobel laureate and Emeritus Professor of Surgery at Harvard Medical School) and wife Bobby Murray:

> Will invited our family to join his and some friends camping in Sequoia National Park in California. We made lifelong friends with this California group. . . His major impact was getting urologists interested in renal transplantation. . . He really brought steroids into the equation, because I didn't think steroids would be worthwhile. . . Will had an axiom, "Keep your friendships in repair."[7]

Most people cannot recall Goodwin without a pipe in his hand. Of this he said he began smoking a pipe in college so that he could avoid cigarettes! It evidently worked but he became addicted to his pipe and was rarely deterred by "no smoking" signs. In retirement Goodwin continued to rekindle old friendships and make new ones. He circulated a publication called the Urologists' Correspondence Club, wherein urologists around the world could discuss interesting cases. He was active in a number of academic urological societies and received numerous distinctions (Appendix 3). After the death of Mary Jo in September 1993 Goodwin's health deteriorated. He died in Los Angeles, 2 days short of his 83rd birthday, in 1998. Doctor Goodwin was a pioneer, innovator and educator. Through the impact of his many trainees and discoveries, Goodwin's legacy in urology is indelible.[8]

The oral history taken by Dr. William C. Casey, recorded between July 1985 and August 1986, of Doctor Goodwin's life is the primary resource of this article. This record, "Urologic Innovator—Willard E. Goodwin," volumes I to III, published by the Regents of the University of California in 1991 was an invaluable source of first-hand information from Doctor Goodwin.

Robert S. McNamara, and Dr. and Mrs. Joseph Murray provided unique insight into Doctor Goodwin's life and character.

APPENDIX 1: BRIEF LIST OF SOME OF THE MANY ACADEMIC UROLOGISTS WHO WERE EITHER TRAINED BY OR WORKED WITH GOODWIN AT UCLA

Khairullah Haji Abdullah, M. D.	Kuala Lampur
David Bloom, M. D.	University of Michigan
Stuart Boyd, M. D.	University of Southern California
Stanley Brosman, M. D.	UCLA
Abraham Cockett, M. D.	University of Rochester
David Crawford, M. D.	University of Colorado
Kenneth Cummings, M. D.	Robert W. Johnson Medical Center
Sakti Das, M. D.	University of California at Davis
Jean de Kernion, M. D.	UCLA
Gerhard Fuchs, M. D.	Cedars Sinai/UCLA
Reuben Gittes, M. D.	Birgham Hospital and Scripps
Brian Hardy, M. D.	Children's Hospital-Los Angeles
Joseph J. Kaufman, M. D.	UCLA
Lester Klein, M. D.	Beth Israel—Boston
Carl Klutke, M. D.	Washington University
Gary Lieskovsky, M. D.	University of Southern California
Donald C. Martin, M. D.	University of California at Irvine
Gordon McLorie, M. D.	University of Toronto
Edward Messing, M. D.	University of Rochester
Jacob Rajfer, M. D.	UCLA
Shlomo Raz, M. D.	UCLA
Jerome Richie, M. D.	Brigham and Women's Hospital
Peter T. Scardino, M. D.	Memorial Sloan Kettering
Fritz Schroeder, M. D.	Rotterdam, Netherlands
Donald Skinner, M. D.	University of Southern California
Robert B. Smith, M. D.	UCLA
Urs Studer, M. D.	Bern, Switzerland
Paul VanCangh, M. D.	Brussels, Belgium
Patrick C. Walsh, M. D.	Johns Hopkins
Chester Winter, M. D.	Ohio State University
Hugh H. Young, II, M. D.	Massachusetts General Hospital

APPENDIX 2: SOME OF THE IMPORTANT UROLOGICAL CONTRIBUTIONS MADE BY GOODWIN

The use of mannitol during transurethral surgery[3]
Percutaneous nephrostomy[5]
The use of steroids to treat graft rejection in transplantation[6]
Ureteropyelostomy in transplantation[9]
Antegrade pyelography[10]
Cup ileocystoplasty[11]
Ileal ureter, practical use[12]
Hematuria in sickle cell disease[2]
Staging prostate cancer with W. W. Scott[13]
Needle biopsy of prostate, technique and interpretation with J. J. Kaufman[14]
Nephrectomy for hypertension with W. Leadbetter[15]
Radioactive renogram with C. Winter[16]
Ureterosigmoidostomy, popularizing the technique/improving the anastomosis[17]
Intussusception of ureter or bowel to prevent reflux[18]
Renal tuberculosis and hypertension[19]
Malignant testis tumor in a grizzly bear[20]

APPENDIX 3: SOME OF THE HONORS AND SOCIETIES TO WHICH GOODWIN WAS ELECTED PRESIDENT

Honors

Joseph J. McCarthy Prize, 1953
The Barringer Medal, American Association of Genito-urinary Surgeons, 1978
Keyes Medal, American Association of Genito-urinary Surgeons, 1987
Hugh Hampton Young Award, 1978
The Ramon Guiteras Award, 1991
The Valentine Medal, New York Academy of Medicine, 1980
The St. Paul Medal, British Association of Urological Surgeons, 1990
The Johns Hopkins Society of Scholars, 1978

President of the following societies

American Academy of Pediatrics, Urology Section, 1972–73
Clinical Society of Genito-urinary Surgeons, 1977–1978
Societe Internationale l'Urologie, United States Section, 1977–1978
Society of Pediatric Urology, 1976–1977
American Board of Urology, 1980–1981
American Association of Genito-urinary Surgeons, 1982–1983
Western Section, American Urological Association, 1983–1984

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