

# IJUH

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- The Pious Urologist: Roger W. Barnes
- How We Train: The origins of the urology residency in the USA
- Huggins and Hopkins: The reluctant Chairman
- Pioneers in Gender Affirmation: Benjamin and Elmer Belt

# PRAETERITUM DOCET

‘The past teaches’

## On the Cover



The insufflation of the animal bladder with air may have led to the organs use in some of homo sapien's first tools including a storage bag, a floating bob in fishing, and even as musical instruments. The inflated bladder was popularly used as the resonant chamber of the 'bladder fiddles' of medieval Europe or the waisted lute-like instrument of ancient Persia known as the *tar*. Certainly the inflated bladder was popular amongst children as a play thing and its use as a toy is documented by many artists in the western canon including Pieter Bruegl (c. 1530-1569) in *Children's Games*, Francisco de Goya (1745-1828), and Jean Bernard (1775-1833). Joseph Wright of Derby (1734-1797) was a major

landscape and portrait painter of the British Enlightenment and took particular interest in the effect of fire- and candle-light on his subjects. His 1768 work *An Experiment on a Bird in the Air Pump* depicts a parlor demonstration of the affects of decreasing atmospheric pressure on the captured animal, much to the horror of a young onlooker who has turned her head away from the scene. An earlier painting, the 1766 *A Philosopher Lecturing on the Orrery* uses the effects of a candle as a small 'sun', casting a stunning effect on the Philosopher's amazed audience members, mesmerized by the celestial workings of the orbiting planets. He chose a more casual and even playful subject with his depiction of *Two Boys with a Bladder*. Derby shows a young, and well-dressed model having inflated a bladder to its breaking point, gently illuminated by a candle, and much to the amazement of a fair onlooker, revealing the serpiginous lines of the bladder's vasculature. The painting, which is featured on this month's cover of the *Journal*, measures 28 x 36 inches, and was in English private collections for 200 years until it was sold to the J Paul Getty Museum, of Los Angeles, in 2019 where it has been presumably kept safely for public enjoyment.

# THE INTERNATIONAL JOURNAL OF UROLOGIC HISTORY

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*Essai des Urines, Gérard Dou (1613-75)*

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## Foreward



early 1 million souls were claimed in the 22-year period of the Napoleonic Wars (1803-1815), mostly from disease and deprivation, rather than from battlefield casualties.(1) Napoleon may have been unable to truly grasp the unheralded magnitude of the human suffering that lay in the wake of his campaigns but he was also responsible for establishing the first ambulance corps, battle-ready surgeons, and medical supply depots.(2) He was also concerned about the medical preparedness and training of civilian doctors who, ultimately, may have been called upon to serve a military role. As early as 1801, Napoleon established what we would recognize today as a resident physician and a kind of hierarchy that differentiated novices from the chiefs. The 2023 film *Napoleon* made no mention of the Emperor's role in graduate medical education (GME) (focusing instead on the subjugation of mere nations) but his contemporaries sure did. In this issue of the *Journal*, Hunt et al. provide the important time line, from Napoleon Bonaparte to Hugh Hampton Young, of the development of the formal residency training program in urology whose goal of producing outstanding urologists has remained unchanged for 100 years.(3) The steering of great programs falls on one shoulder- the Chair. One can little envy the person who would follow in Young's pioneering footsteps at Hopkins. Grutman, from Baltimore, uses primary archival materials from the 'Brady' itself to relate to us the search for Young's successor, which initially fell upon the future Nobel prize winner, Charles Huggins. (4) There are many descendants and lineages from good training programs. Some individuals have such great influence in subsequent generations, that their contributions must be celebrated, perhaps to relive or even inspire us. Herr and Hadley provide us with a biography of RW Barnes, the California urologist who spent decades volunteering in underserved continents around the world.(5) Another Californian, the urologist Elmer Belt, was a founding member of UCLA's medical school and whose nephew, Willard Goodwin, was the first chair of UCLA's urology department. Belt was a devoted historian and we hope would have

approved of the *Journal*. He and Frank Bicknell had first conceived of the idea of a Urology History forum at the annual meeting as early as 1965.(6) Belt also owned the most extensive collection of items related to Leonardo Da Vinci which later became the Library of Vinciana, part of UCLA. Hines et al. here report Belt's pioneering clinical activity as the first urologist in the USA performing gender affirmation surgery (GAS), and the comprehensive steps he undertook, with others, to ensure high quality outcomes.(7)

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## Roger W. Barnes – Pious Pioneer of Urology

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**Introduction:** Roger W. Barnes (RWB) (1897-1982) was one of the most influential urologists of the 20th century. His life and legacy is honored through his enduring scientific contributions and his global humanitarian impact. Our objective was to explore unpublished and primary data to better understand Barnes' medical and social contributions and place his long lived impact into perspective.

**Sources and Methods:** We reviewed personal files on RWB, his published papers and books, and newspapers and archival information at the Heritage Research Center, Loma Linda, CA.

**Results:** Barnes was an innovative urologist, prolific author, and teacher. He pioneered endoscopic surgery, most noted for transurethral resection of the enlarged prostate, conservative treatment of carcinoma of the prostate, and transurethral resection as primary surgical treatment of bladder tumors. As a Seventh Day Adventist, he dedicated himself to in sharing his knowledge and skill, leading to multiple medical missions on six continents to teach urology and establish still thriving departments and clinics.

**Conclusions:** RW Barnes lived a life of "self discipline, motivated by a concern for others..." He achieved that with skill and grace, an aspirational goal for urologists everywhere.

**Key Words:** Roger W. Barnes, endoscopy, medical missions

 In my (HH) first year of medical school, Spring 1966, I noticed a flyer on the bulletin board for a summer clerkship with a urologist in Los Angeles, named Roger W Barnes. Although I didn't know anything about urology, I jumped at the opportunity because, beside receiving education, a modest stipend was offered to also work as a physician assistant and technologist. I spent that summer with Barnes and his son-in-law partner, Henry L. Hadley, unaware at the time that Barnes was Chair of Urology at the College of Medical Evangelists (now part of Loma Linda University)(CME/LLU), and widely regarded as a 'giant' in urology. I came to appreciate only years later during my training why he deserved that distinction. To my good fortune, the clerkship proved to be a transformative experience, inspiring a future career path in urology (Figure 1).

Under Barnes' pedagogical scrutiny, my job was to obtain histories and perform urologic exams, draw blood and collect urine for analysis, inject contrast and take x-rays for intravenous pyelograms (including

developing the films), position and prep patients on the table for a cystoscopy, and arrange, in perfect order, required surgical instruments. On occasion, we made rounds with the residents at the nearby White Memorial Hospital, where Barnes conducted the majority of his operations (Figure 2). After some time observing him, Barnes taught me how to insert the rigid Brown-Buerger cystoscope into the bladder and begin cystoscopy before he arrived, completed his own exam, and pointed out the findings I had missed. Cystoscopy then was a tedious task since there was only one eyepiece without today's fiber optics and video-camera. The bladder was illuminated only by a single incandescent bulb screwed into the end of the scope. Regardless, Barnes' teaching was succinct. One day, an elderly gentleman, limping into the clinic with a cane, complained of frequent urination. We performed a comprehensive exam and I asked Barnes for his differential diagnosis. He answered, simply, "stroke" and the connection between neurological diseases and voiding dysfunction became indelibly fixed in my mind.

RW Barnes was always moving, running to see as many patients as he could during a long day. A colleague remarked, "a man most envied by weight watchers... is one who is so busy helping others that weight can't seem to catch up with him. This is Roger W. Barnes, MD." (1). Yet, with each patient, Barnes was kind, patient, and soft-spoken. He listened to his patients (a lesson I never forgot). Widely known as a healer, teacher, author, and scholar, Barnes is better known for his "sterling qualities of friendship and his willingness to serve in whatever capacity for his fellowmen." (1) All who knew him wanted to be, as was echoed by his grandson, Roger Hadley, "like grandpa Barnes." This manuscript's authors, both urologists 'standing on Dr. Barnes' shoulders', wish to honor the legacy of this remarkable man, focusing on his scientific contributions to urology, his global medical missions, and his humanitarian gifts. Barnes' philosophy was simple: "Self-discipline motivated by concern for others. (This) has been the standard of conduct which I have attempted to reach." (2) He achieved that, and much more.

## SOURCES AND METHODS

We reviewed the authors' personal files (HH and HRH), and the Department of Archives and Special Collections,

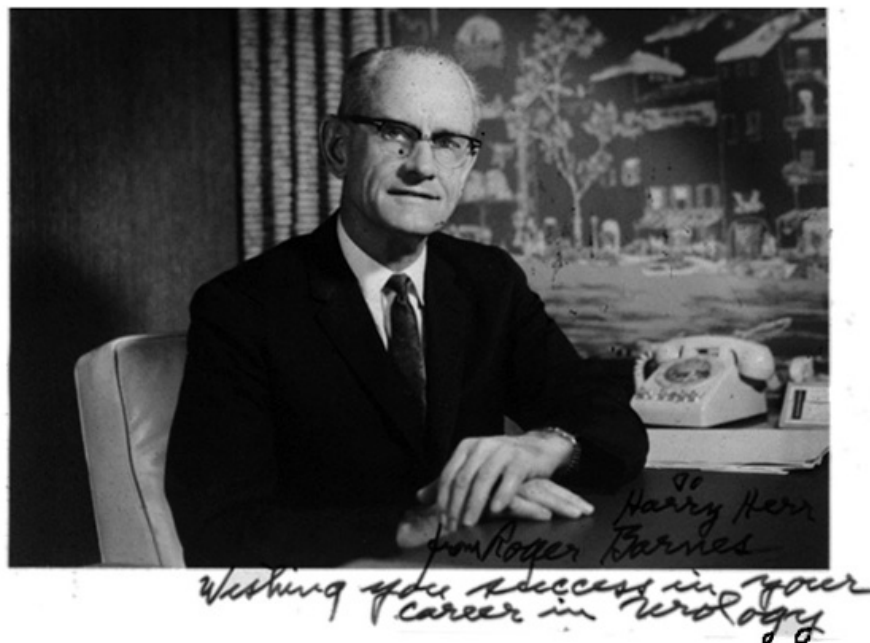
Heritage Research Center (Loma Linda University) containing the Barnes, Roger William, and Oca Davis biography file. We accessed the Adventist Review and Loma Linda/CME alumni journal, American Urological Association (AUA) Times, and RW Barnes' publications listed in PubMed.

## RESULTS

### Background synopsis

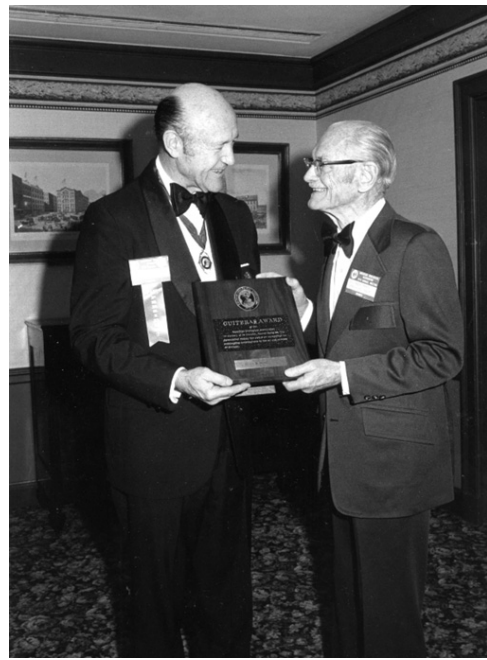
Roger William Barnes was born in Littelton, Colorado, in 1897. At age 11, he moved with his parents to northern California where, raised as a devout Seventh Day Adventist, he was educated at the faith-based Lodi Academy and Pacific Union College. He received his MD degree from the College of Medical Evangelists in Los Angeles, class of 1922. He was an excellent student, inducted into Alpha Omega Alpha and Kappa Phi Kappa honor societies. He completed an internship and residency in urology at the Los Angeles County Hospital in 1925. In the same year, he accepted an appointment to the faculty of CME/LLU, where he would remain for 57 years, serving as the first Chair of Urology from 1932 to 1967. He married Oca Davis in 1923 and the couple raised six children.(3)

Dr. Barnes was 'Mr. Urology', best known for



**Figure 1.** Roger W. Barnes (1897-1982), prolific author, teacher, and humanitarian. (Personal collection, to author, HH)





**Figure 2.** (Left) Aerial view of White Memorial Hospital complex and College of Medical Evangelists, Los Angeles campus, 1960. (Department of Archives and Special Collections, University Libraries, Loma Linda University). (Right) RW Barnes receives the AUA's Ramon Guiteras Award from AUA President, John Lattimer, 1979. (Didusch Museum, Linthicum, Md)

pioneering, mastering, and teaching endoscopic surgery. He developed the "Barnes adjustable stool", of which he was very proud. With his wife, Oca, he organized teaching programs in urology throughout the world. He also served three two-month tours on the medical ship S.S. Hope in Ecuador, Peru, and Ceylon (Sri Lanka). Dr. Barnes received numerous honors for his achievements, including the American Urological Association's (AUA) highest award, the Ramon Guiteras Award, in 1979 (Figure 2). "In all this", a colleague noted, "he remained a humble, contrite Christian, a devoted husband and father, and a respected teacher."(3)

Dr. Barnes knew that sometimes "medical science is not enough," illustrated by an experience he had with a patient (4).

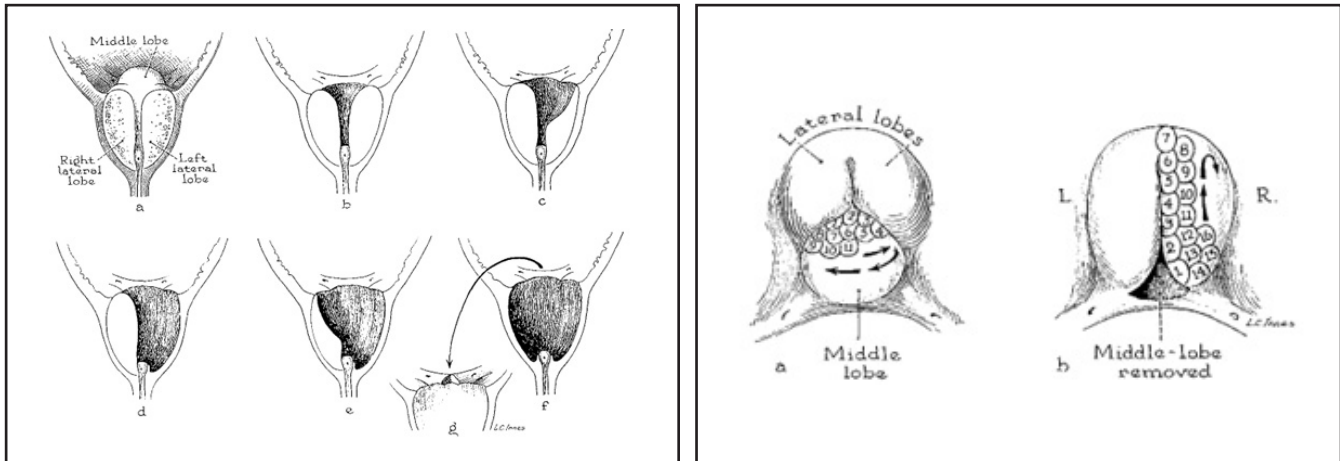
"When a person has had a heart attack, the extra stress caused by anxiety and fear as to the possible outcome can cause the patient to die. Therefore, the composure that can come from a patient's placing his faith in the 'Great Physician' may be the determining factor in his recovery. When the patient knows that the physician at his bedside is in contact with God, his confidence in

both is strengthened, his fear is changed to hope, and his anxiety gives way to peace." (5)

In 1972, at the age of 75, Barnes moved to Loma Linda when the medical school relocated and established a new residency program. He continued with his teaching and his urologic practice. Dr. Barnes' residents have since served in 14 countries on every continent except Antarctica. He remained active until a brief illness led to his death from leukemia in 1982 at the age of 84.(6) During his final days, his only concern was for others including the nurses taking care of him.(7) The Roger W. Barnes Medical Research Fund was established in his honor to support clinical and basic science research.

### Scientific Contributions

RW Barnes was a prolific author and scholar. He published over 150 scientific papers (22 papers published after the age of 75) and three textbooks, including the classic *Endoscopic Prostatic Surgery* (1943), and *Urological Practice* (1954), a treatise for medical students and general physicians. Between 1927 and 1959, he published single-author papers in *California Western Medicine* on such diverse subjects as urography,



**Figure 3.** (Left) The 'Barnes TURP technique' starts with resection of the middle lobe at 6 o'clock all the way to the verumontanum. This creates a nice trough in the floor of the prostatic urethra. Once this has been done the right and left lobes are then dealt with separately but one at a time. (10). (Right) "Transvesical view of prostate being resected showing sequence for removal of tissue."(10)

carcinoma of the prostate, litholopaxy vs. cystolithotomy, diet, bladder neck contracture, interstitial cystitis and non-specific urethritis in females, intestino-vesical fistula, bladder involvement in spinal cord lesions, and the undescended testis.(8) RW Barnes is best known for his technical description of transurethral resection of the prostate (TURP), conservative treatment of carcinoma of the prostate, and transurethral resection of bladder tumors (TURB). Throughout his writings, he emphasized meticulous surgical technique and the components of successful urologic surgery being a correct diagnosis, expert pre- and post-operative care, superb surgical judgment, and excellent surgical technique. Barnes always espoused that the surgeon who excels in each of these is the one who obtains the best results.(9)

#### **Transurethral Resection of the Prostate (TURP)**

TURP was introduced by Maximilian Stern in 1926, but it was RW Barnes who pioneered and popularized TURP throughout the world. He performed more than 18,000 procedures, including large glands up to 295 grams. Using his preferred Stern-McCarthy resectoscope (rather than the cold punch approach), he described his technique in exquisite detail, emphasizing the "endoscopic surgeon must develop coordination of movements and rhythm of motion to remove prostates rapidly"(Figure 3).(10) His description, while mirroring our common approach now, was innovative then: the intravesical lobe is first resected down to bladder neck fibers, followed by resection of the lateral lobes down to the prostatic capsule. Dr. Barnes cut rapidly, not

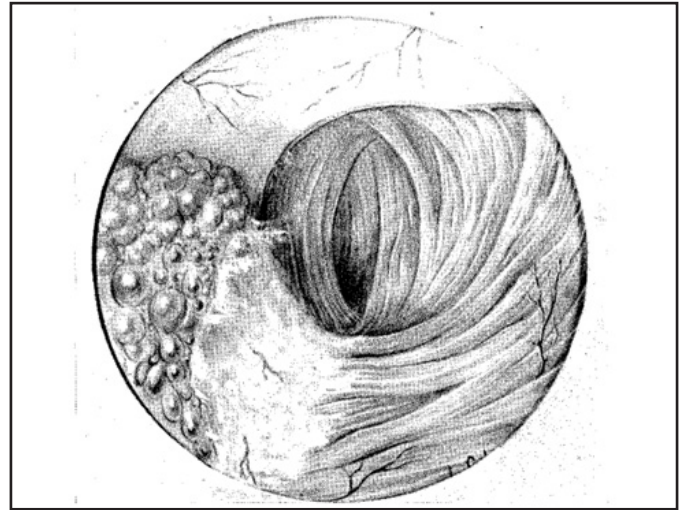
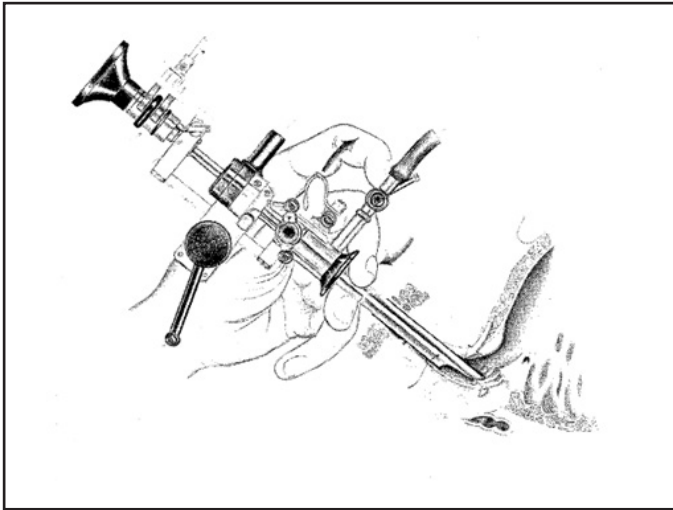
stopping to control bleeding until each lobe had been completely removed, exposing the major vessels for fulguration. In one report, up to 81% of his TURPs were completed in under one hour, and only 7% of patients required transfusion. In 1000 consecutive cases, Barnes and colleagues reported relief of obstructive symptoms in 87%, a mortality rate of 1.8%, and any complication requiring treatment in 3.3%.(11) TURP remains the gold standard surgical treatment of BPH today.

#### **Carcinoma of the prostate**

Dr. Barnes was an advocate for conservative therapy of prostate cancer. In a series of patients who were suitable candidates (e.g. had localized disease) for total prostatectomy, he used TURP and endocrine therapy (orchietomy or estrogen), reporting 10- and 15-year survival rates of 57% and 33%, respectively, similar at the time to those of radical prostatectomy, with far fewer adverse consequences.(12,13) He did limit recommendations for patients with fewer than 10 years life expectancy and emphasized (ahead of his time) that since many men may live 10 years without any treatment, 15-year follow-up is required to best judge efficacy of treatments.(14)

#### **Transurethral resection of bladder tumors (TURB)**

Barnes treated 81% of patients with bladder tumors with endoscopic surgery, including invasive tumors up to 8 cm in size.(15) He selected patients with tumors he deemed confined to the bladder wall. With TURBT, 53% of his patients survived 5 years compared at the



**Figure 5.** (Left) Dr. Barnes shows the position of hand and fingers on the Stern-McCarthy resectoscope and movement of the instrument during removal of obstructing prostate tissue.(10) "Leverage pressure of inner end of sheath against tissue to be removed. Arrows indicate direction of pressure while pieve of tissue is being resected."(10) (Right) Wide and deep transurethral resection of a bladder tumor.(16) "Partially resected bladder tumor shows different appearance of tumor tissue and bladder muscle."(16)

time to a survival rate of only 20% after radical cystectomy. (16) To achieve such results, his resection would have had to be wide and deep into clearly visible muscle. He once wrote that TURBT would proceed beyond "removing all tumor tissue and to continue resecting for approximately 1 cm deep to the tumor and on all sides lateral to the tumor. This is done even though the resection is continued entirely through the bladder wall"(Figure 5). (17) TURBT was followed with cystoscopy after 3 months to verify complete resection. Small recurrent bladder tumors were electro-fulgurated in the office. He emphasized that local stage as well as competence and experience of the urological surgeon were significant factors determining outcomes (18). Tumor staging was estimated from gross appearance of tissues at the time of resection, the extent of a complete visible resection, and the pathology report on grade, but not on stage, maintaining that the urologist determined the tumor stage not the pathologist. I continue to rely today on Barnes' principles regarding endoscopic evaluation and treatment of bladder tumors.

### Open Surgery

Barnes performed complex, open surgery, when appropriate, including uretero- and cystolithotomy, repair of injuries to the urinary tract, nephrectomy, cystectomy, urinary diversion through an isolated rectal pouch, plastic reconstruction of the penis after traumatic amputation, reconstruction of the urethra with a bladder flap, and repair of vesicovaginal

fistulas.(19-22) He also published a classification of uremia and its causes for physicians, where his encyclopedic knowledge of the urologic and medical diseases affecting the kidneys was apparent.(23)

### Medical Missionary

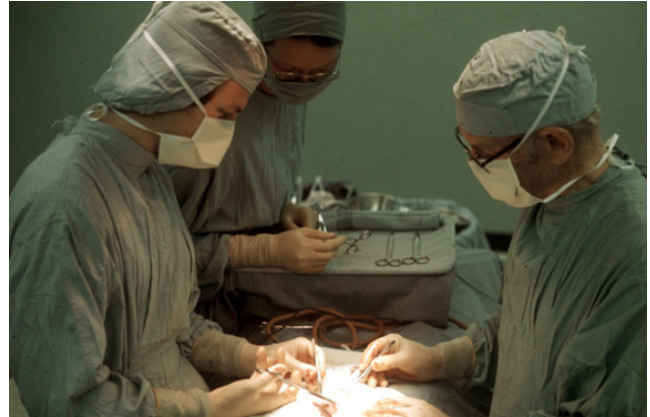
Barnes published a remarkable article in *JAMA* in 1958 that "knowledge of urology in this country should be shared with other countries."(24) He not only said urologists should do this, but they were "obligated" to do so. This could be done by training foreign medical graduates in the United States or in their own countries. Barnes did both, spending his vacations and sabbaticals on medical missions (Figure 6). Along with his wife, Oca, he established and organized urology teaching programs and clinics in church-operated mission hospitals located in the Middle East, the Far East, South America, Australia, Southern Asia, and Africa (Figures 7 and 8). In advance of his visits, hospitals arranged to have many patients available for consultation and surgery. He outfitted clinics with personal endoscopes donated from his practice. He performed the first TURP in post-revolution China (c.1970).

In Africa, Adventist hospitals were established in Malawi, Zambia, Botswana, Lesotho, South Africa, Kenya, Rwanda, Libya, Ethiopia, and Tanzania. Dr. Barnes purchased a land rover so that he and his wife could travel between hospitals. In South America, he worked in hospitals in Ecuador, Peru, Brazil, Bolivia, and Argentina. In Asia, he worked in Japan,





**Figure 6.** (Left) Barnes (on the right) searching the globe for his next missionary trip. (Courtesy, Heritage Research Center, Loma Linda University, Los Angeles). (Right) Roger Barnes (right) operating with author Roger Hadley, Saigon, Vietnam, 1974. (Author's personal collections, HRH)



Taiwan, Okinawa, Singapore, Bangkok, and Korea. He taught in New Zealand, Australia, the Philippines, and New Guinea.

The wide variety and unusual nature of disease in Southeast Asia created an ideal setting for Dr. Barnes, whose forte was ingenuity. He managed many patients with urinary calculus disease using a broad spectrum of techniques to remove offending stones. Urethral stones were excised through a perineal urethrostomy, bladder stones with a lithotrite and open cystolithotomy, distal ureteral stones were extracted by blind basketing or, in certain cases, transvaginal distal ureterolithotomy.(25)

Dr. Barnes spent 1956-57 in Vellore, India, where he developed the Department of Urology residency teaching program at the Christian Medical College (Figure 7). During this time, he taught 20 urologists to perform TURPs, contingent on their commitment to teach 20 other urologists throughout the country.(26) Soon thereafter, endoscopic surgery became dispersed throughout Asia, and the Vellore hospital and medical college is still one of the best in India.

Dr. Barnes spent October and November, 1974 operating in Saigon, Vietnam (Figure 6, right). The US Military had granted their main 3<sup>rd</sup> Field Hospital in Saigon to Loma Linda University to operate as a mission hospital. Barnes was accompanied by his grandson, Roger Hadley, who just graduated from medical school, and was taking a gap year to work in hospitals around

the world (above). While in Saigon, Dr. Barnes "did, what he said he had never done before," recalled Hadley, "a procedure in which he inserted a resectoscope through a very mature nephrostomy tract and grabbed a 1-2 cm stone with the resectoscope loop and pulled it out of the kidney.....my first PCNL." (27) On weekends, Barnes would participate in church services and visit orphanages throughout South Vietnam.

## CONCLUSION

Dr. Barnes dedicated his professional life to perfecting, performing, and teaching endoscopic surgical treatments of common urologic diseases. Favoring transurethral resection over open surgery, dove-tailed with his conservative philosophy to relieve symptoms and control disease with minimal side effects and burdens of therapy on quality of life. He did not just believe in his approach, by tabulating the long-term outcomes of his patients, he proved that transurethral surgery was certainly comparable, and in many cases, superior to radical open surgery, with fewer adverse consequences. His was a novel approach during the Halstedian era of cancer surgery, where removing whole organs and surrounding structures was justified as the only reliable cure. On the contrary, Barnes showed transurethral resection could manage four-fifths of bladder tumors and provide a comparable alternative (with hormones) to radical prostatectomy for carcinoma



**Figure 7.** Roger Barnes and wife, Oca, in center of key staff and their families, Christian Medical College, Vellore, India (1956-57). (Author's collection, HRH)

of the prostate. Throughout his writings, however, he emphasized repeatedly that case selection, an experienced surgeon, and meticulous surgical technique were critical to achieving a successful outcome, both in terms of complications and survival. He reported 15 to 20-year follow-up of his patients to truly evaluate survival and consequences of his treatments.

RW Barnes has had a durable global impact on urology, through his scientific contributions and teaching, which have benefitted, and continue to benefit, many patients. Although he focused on their urologic problems, he also attended to patients' overall general and spiritual health. He realized his life long dream to travel the world and serve those who most needed high quality urologic care.

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**Figure 8.** Four generations of urologists. Roger Barnes with his son-in-law Henry Hadley (back row, middle), grandsons Dean and Roger Hadley (back row, left and right, respectively), and great-grandson David Hadley (on couch, middle) while Zach Hadley (on couch, left) became an orthopedic surgeon. (Author's (HRH) personal collection)

# From Berlin to Brady: Tracing the Origins of the Urology Residency

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**Introduction:** Urology was one of the first subspecialties in medicine to employ the training model known today as residency, yet no definitive account currently exists of how urology residency programs came into existence. These events are rarely taught in formal urologic curricula. It is imperative that tomorrow's urologists understand how today's system came to be.

**Sources and Methods:** We performed a comprehensive review of the literature, referencing primary and secondary sources including journal articles, books, textbook chapters, monographs, bulletins, editorials, and transcribed speeches, to compile sufficient evidence to complete this historical review.

**Results:** During the 13th-18th centuries, surgical training was undertaken in small and non-regulated apprenticeships. Napoleon created the first versions of the residency training model in early 1800s France. In Berlin, Bernhard von Langenbeck (1810-1887) devised the most direct early predecessor of the modern system. An early trainee, Theodor Billroth (1829-1894) later mentored American surgeon William Halsted (1852-1922) and passed along the training methods. At Johns Hopkins Hospital, Halsted drew on Billroth's methods to establish the "pyramidal" training model in 1890. This was later adapted by Edward Churchill (1895-1972) at Massachusetts General Hospital into the "rectangular" structure in the 1930s, which is closer to existing residency programs today. Hugh Hampton Young (1879-1944), the 'Father of American Urology', was hired by Halsted at Hopkins and quickly became Chair of the Department of Genitourinary Diseases in 1897. Young informally recommended aspiring urologists to Halsted for appointment in the surgical residency, spawning the beginnings of the urologic specialty. In 1915, the Brady Urological Institute opened at Hopkins via a donation from Young's patient James Buchanan Brady (1856-1917), and a 7-year training program was designed alongside it. With this, the first formal urology residency in the country was born.

**Conclusions:** American urology residency formally began in 1915 at Johns Hopkins Hospital under the direction of Hugh Hampton Young and shares deep roots with the history of surgery itself. Recognizing where this training model originated is a critical context for all who seek to improve how the urologists of tomorrow are trained.

**Key Words:** History, urology, residency, education, surgical training, house officer

rology was one of the first subspecialties in American medicine to employ the training model known today as residency, stemming closely and directly from the original format brought from Europe and implemented by Dr. William Halsted at Johns Hopkins Hospital in 1889.(1) Though formal surgical training predated Halsted by hundreds of years, aspects of the apprenticeship model previously used are still largely ingrained in the fundamentals of how modern surgeons are molded, especially in surgical subspecialties such as urology.(2) Thus, it is fitting that the first formal residency training program in American urology was founded by Hugh Hampton Young, the 'Father of American Urology' and one of Halsted's

former surgical interns at Johns Hopkins.(3)

Despite urology's rich history, fewer than 50% of residency programs include historical content in their formal education curricula even though 83% of program directors believe history should be taught.(4) When history content is included in a program, reports suggest that 88% is achieved through "pimping" in the operating room and only 15% in dedicated lectures on urologic history. A total of 17% of program directors (PDs) felt history should not be taught in formal residency curricula and 4 of 5 PDs agreed with the statement that "residents can read about (history) on their own."(4) The American Urological Association (AUA) University provides a comprehensive resource

on 22 urologic domains deemed important to the development of the resident in urology. None are devoted to urologic history, how residency training came about, or the complex financial and legislative history allowing residency training to exist. There is no published resource on the history of urology residency training in the United States. Our objective was to identify the pioneers responsible for, and the steps taken to develop, the modern American urology residency system. Our secondary aim was to provide a resource for inclusion into formal urologic curricula so that future urologists may better understand how today's training systems came to be.

## SOURCES AND METHODS

Primary and secondary sources were identified via online literature search engines including PubMed (pubmed.ncbi.nlm.nih.gov), the National Library of Medicine (nlm.nih.gov), and Google Scholar (scholar.google.com), among others. Additional sources of particular importance included Young's autobiography and a named lecture delivered by Halsted at Yale in 1904.(5, 6) We also used academic journal articles as well as books, textbook chapters, monographs, bulletins, editorials, and transcribed speeches. Non-digitized books and other references were accessed in hard copy via the

Edward G. Miner Library at the University of Rochester Medical Center or digitized de novo using an interlibrary loan system. We used the resources of the William P. Didusch Center for Urologic History (Linthicum), the National Library of Medicine (Washington), and online search engines to identify images, which were used with permission or confirmed to be in the public domain prior to being selected.

## RESULTS

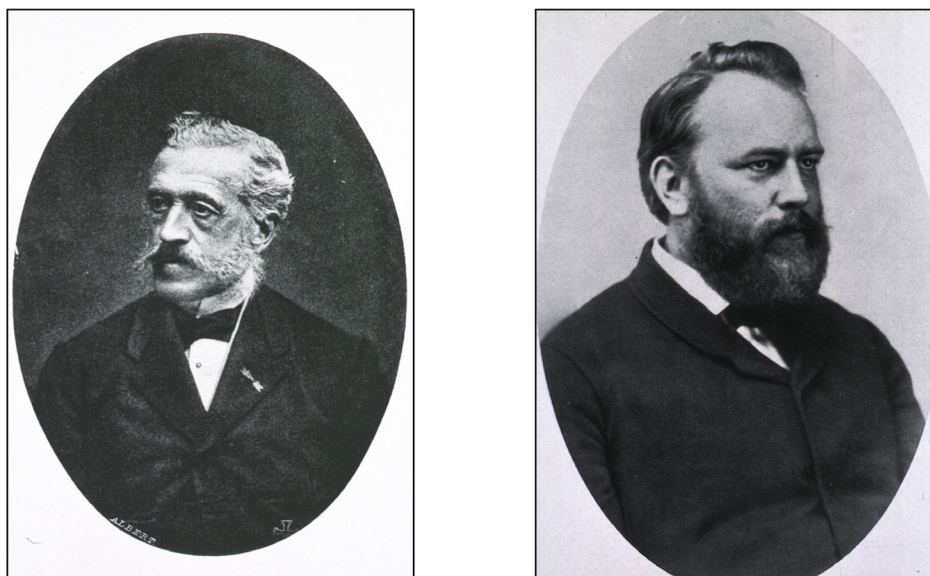
### Origins of Surgical Training

Surgery is an ancient profession, with written accounts of surgical technique first emerging in Egyptian papyri around 3000 BCE and further examples of modern procedures, such as incision and drainage, dating as far back as 1068 BCE in Mesopotamia.(7, 8) Surgical training has traditionally been viewed by modern scholars as an apprenticeship, although not always formal or structured. Apprenticeships began as informal arrangements with family or acquaintances, but over time rules took shape even as the length and content of training varied.(2) For example, apprenticeships during the 16th century often began with trainees around the age of 12 years old and lasted 5-7 years, with the option to pursue further years of training after in a so-called



**Figure 1.** (Left) The “Founder of Clinical Teaching”, Herman Boerhaave (1668-1738), and his alleged favorite pupil Gerard van Swieten (center) (1700-1772), who would eventually bring his mentor’s teachings from Leiden to Vienna. Decades later in France, similar bedside teaching practices became institutionalized in Napoleon’s “*L’internat des hôpitaux de Paris*” system. (Right) Jean-Charles Faget (1818-1884) became its first American graduate, or *AIHP*. (Public domain, National Library of Medicine, Bethesda)





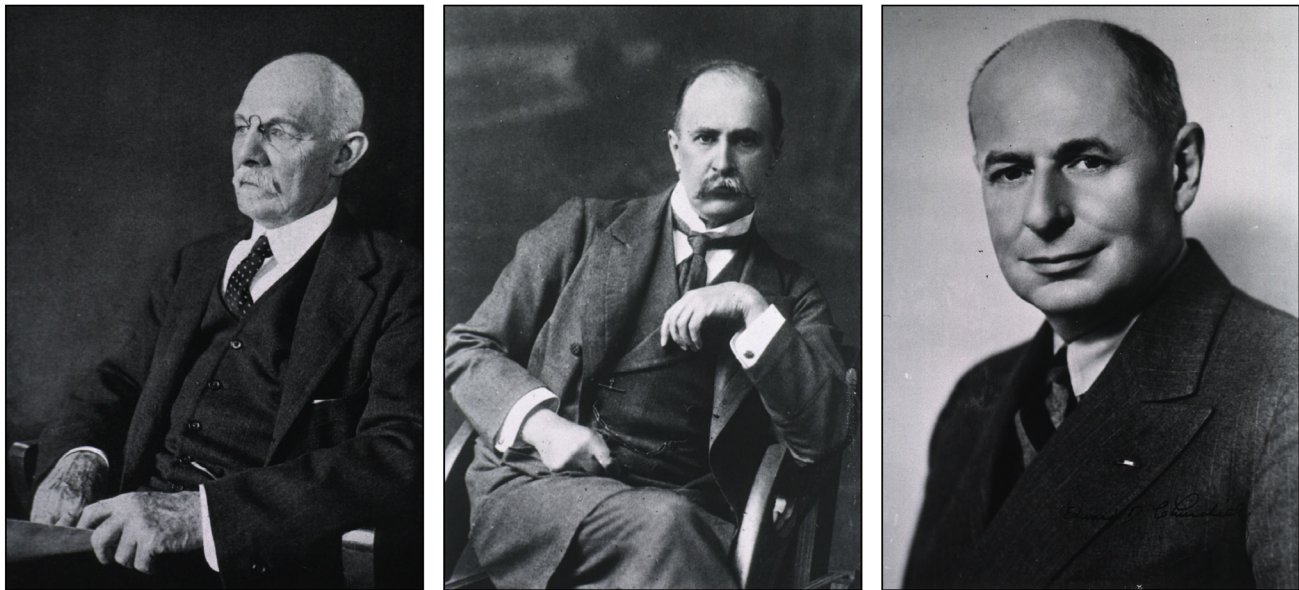
**Figure 2.** (Left) Bernhard von Langenbeck (1810-1887), Berlin's 'Father of the Surgical Residency', developed and refined a system of training 'house officers' who were the predecessors of modern-day surgical residents. One such house officer, Theodor Billroth (1829-1894) (right), eventually became Chair of the University of Vienna's surgical department and it was there that he later met and influenced a young William Halsted. (Public domain, National Library of Medicine, Bethesda)

'journeymanship'.(2, 9) Though not necessary to practice surgery, such itinerant opportunities allowed the apprentice to gain further experience under the same or a different master.

In France, even while apprenticeships continued to flourish, efforts to advance surgical education began to appear and foreshadowed the reforms that would take place centuries later. The College de Saint-Côme, established in Paris in 1210, eventually began an effort to train academic surgeons separately from their often minimally-trained barber-surgeon counterparts.(2) Academic physicians, or those with formal training or university education, became "surgeons of the long robe" and barbers "surgeons of the short robe." The schism in training and practice persisted across Europe, with records in London of the separate Guild or Fellowship of Surgeons and Company of Barbers existing as early as 1368 and 1308, respectively.(10) Eventually the two would join in 1540 as the Company of Barbers and Surgeons, which existed until 1745 when a bill signed by King George II allowed the surgeons to break away as the Royal College of Surgeons, which persists to this day.(10) Eight years earlier, in France, the surgeons also broke away from the barbers thanks to the efforts of King Louis XV's personal surgeon, François Gigot de La Peyronie (1678-1747).(11) Despite these organizational changes and the early 13th century

French innovation in training, informal apprenticeships would still predominate in Europe for centuries more. (2) In 1370 for example, an act of English Parliament mandated 7-year apprenticeships for guilds such as that of the surgeons.(10) While surgery slowly evolved from a trade to a profession, it would be a number of centuries before another burst of innovation was seen in the training model.

Throughout the 18th and 19th centuries, a handful of notable individuals would make important contributions to the eventual development of the residency training model. Herman Boerhaave (1668-1738), the 'Dutch Hippocrates' and 'Founder of Clinical Teaching', famously began conducting regular bedside teaching rounds at the University of Leiden in the early 1700s, drawing students and visitors from all over the world (Figure 1).(12, 13) Though bedside teaching had existed in the prior century in an intermittent fashion, Boerhaave added structure by having pupils observe a set number of cases in his 12 dedicated teaching beds on a twice-weekly basis. These rounds continued until his death in 1738 and ultimately set clinical training on a course towards the model still used today, with Halsted remarking that "the development of clinical teaching can be traced by unbroken tradition directly to Boerhaave."(5) After his death, Boerhaave's influence continued to spread, with his favorite pupil Gerhard



**Figure 3.** (Left) William Halsted (1852-1922), American surgeon and the 'Father of Modern Surgery', established the first American surgical residency program at Johns Hopkins Hospital after William Osler (center) (1849-1919) proposed the idea of a European-style residency training program to the Hopkins Board of Trustees. Decades later, Edward Churchill (right) (1895-1972) adapted Halsted's "pyramidal" model into a "rectangular" model at Massachusetts General Hospital, which remains the backbone of surgical residency program structures today. (Public Domain, National Library of Medicine, Bethesda)

van Swieten (1700-1772) accepting an invitation to teach at the medical school in Vienna in 1745 and shortly thereafter becoming its president (Figure 1).(12, 14) By 1754, the school's clinical instruction had been revolutionized, with bedside teaching rounds implemented by Anton de Haen (1704-1776), another of Boerhaave's pupils.(14, 15)

Not long after, in France, similar changes were brewing. In 1802, Napoleon created "*L'internat des hôpitaux de Paris*"—or Interns of the Hospitals of Paris (IHP)—training program in response to their disorganized medical system after the French Revolution.(16) Like Boerhaave's, this reform emphasized centralized teaching at the bedside referred to as "*au lit du malade*" and created a system of roles that would foreshadow those found in surgical residencies today.(16) "*Externes*", lowest on the totem pole, managed up to six patient beds and handled scut work such as morning examinations, progress notes, and small medical tasks or procedures. Fewer than 15% of them advanced to the IHP stage, a period of training lasting three to five years and encompassing both clinical education and written examinations.(16) Together, the "*internes*" and "*externes*" handled most of the work in the hospital through a daily presence and rotating night call, sometimes even living at the hospital.

A first of its kind, this system was akin to early models

of American surgical residency and drew trainees from around the world. The first American graduate, or "*ancien*" IHP (AIHP), was Jean-Charles Faget (1818-1884) who completed his "Internat" program in 1842 and became an AIHP with his thesis on the management of pediatric obstructive uropathy in 1844, before returning to New Orleans in 1846 (Figure 1).(16) Another American who brought the French training influence back home was William Osler (1849-1919), who is noted to have visited Paris to observe the "*au lit du malade*" teaching rounds during the late 1800s.(16) Eventually, Osler would draw on this influence in proposing a surgical residency at Johns Hopkins.

### Residency Takes Shape in Berlin

In the early 19th century in Berlin, Bernhard von Langenbeck (1810-1887) began to weave a fateful thread which would eventually lead to Halsted, Hopkins, and ultimately a urology residency at the Brady Institute (Figure 2). Upon graduating medical school in 1834, von Langenbeck traveled abroad for two years of post-doctoral study and visited France during the same years that the IHP model was prominent.(17) Eventually joining the University of Berlin in 1848 as a staff surgeon, he would ultimately become known as the 'Father of the Surgical Residency.'(18) At Berlin's famous Charité Hospital, von Langenbeck developed and refined a





**Figure 4.** (Left) Hugh Hampton Young (1870-1945), the “Father of American Urology”, established the first American urology residency program at Johns Hopkins Hospital’s new James Buchanan Brady Urological Institute in 1915. (Public Domain, National Library of Medicine, Bethesda). (Center) Frank Hinman Sr. (1880-1961), a previous appointee to Halsted’s surgical program, became the first chief resident under Young. (Right) William A. Frontz (1885-1934) succeeded Hinman the following year and thus became the first Brady resident to complete a full chief year. (William P. Didusch Center for Urologic History, Linthicum)

system of training “house officers” who might be seen as predecessors of modern-day residents. Under his system, medical graduates spent long hours in-house at the hospital, often living on-site, and undertook graduated responsibility in the care of surgical patients.(10, 19)

One of his many prominent house officers was Theodor Billroth (1829-1894),(19-21) the ‘Founder of Abdominal Surgery’ (Figure 2).(22) In Berlin, Billroth studied under von Langenbeck in medical school and then became his assistant in the surgical clinic at Charité.(22) In 1860 he accepted a surgical professorship at the University of Zürich, leaving seven years later to assume the chair position in the University of Vienna’s surgical department.(20-22) A century prior, Boerhaave’s pupil, van Swieten, had reformed medical education in Vienna, and now it was Billroth’s turn to make his mark by bringing with him the house officer training model of Berlin and von Langenbeck.(14) Years later, Halsted would be exposed to this revolutionary system while training under Billroth in Vienna during his European travels of 1878-1880 (Figure 3).(23, 24) Heading across the Atlantic in 1878, due to the lack of surgical exposure in his brief stint at New York Hospital, Halsted may not have predicted that the trip would also ready him to transform American surgical training.

Upon his return to America in 1880, Halsted stepped into a faculty role at the College of Physicians and Surgeons in New York City.(23-25) Over the next six years, he taught and practiced at five other city hospitals, including Bellevue and Presbyterian, and was known to be a daring surgeon and a prolific educator.(26) Drawing on his European training and

those influences dating back to Boerhaave, he held medical student lectures, implemented regular bedside clinical teaching rounds, and even arranged for laboratory training with his future Hopkins colleague William Welch (1850-1930), who was also at Bellevue at the time.(23, 24, 26) As a result, his students were consistently successful and his growing renown and influence as a leader in surgery and medical education began to spread.(5, 23)

Unfortunately, Halsted developed an accidental cocaine habit in 1884 while experimenting with the drug as a local anesthetic after German ophthalmological research introduced its potential for use in procedures.(23-27) With the influence of cocaine addiction, scholars have written that his papers began to deteriorate and his other clinical and academic duties suffered.(23, 26) However, he still found time to travel abroad back to Vienna in 1885, where he shared the anesthetic properties of cocaine with Billroth’s first assistant, Anton Woelfer.(26) At the height of Halsted’s addiction, declining health and erratic behavior led his friend and colleague Welch to arrange an intervention of sorts, traveling together by boat to the tropical Windward Islands. (23, 26) The journey failed, with Halsted breaking into the ship’s medical supplies to steal drugs. Shortly after returning home, he checked into six months of ‘rehab’ in Providence, Rhode Island.(23-26)

There, Halsted successfully weaned off cocaine but traded it for morphine and a tainted reputation.(23, 26) Without a career in New York to return to, Halsted next landed in Baltimore after accepting an invitation to live with Welch

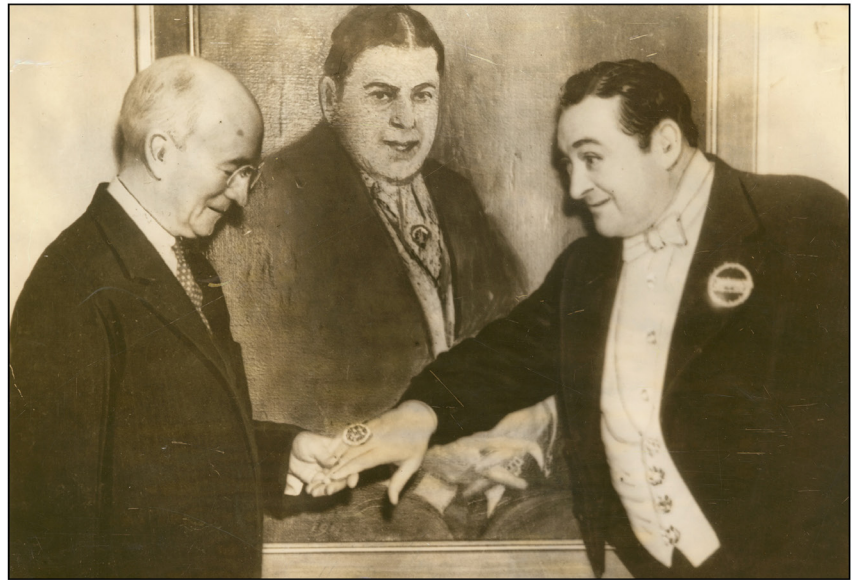
**'DIAMOND JIM' GIVES  
\$220,000 TO HOSPITAL**

**Thank Offering to Johns Hopkins  
for Cure, Which He Cele-  
brates with a Dinner.**

**FIRST SOLID MEAL IN MONTHS**

**Illness Forced Him to Give Up the  
Things in Life He Enjoyed Most  
—Plans Another Dinner.**

James Buchanan Brady, Vice President  
of the Standard Steel Car Company,  
known from ocean to ocean as "Diamond  
Jim" Brady, has given \$220,000 to the



**Figure 5.** (Left) Announcement of initial donation by 'Diamond Jim' Brady establishing the Brady Urologic Institute (New York Times, 8/13/1912). (Right) Hugh Hampton Young examining one of the famous diamond rings willingly displayed by his patient, James Buchanan Brady (1856-1917). (William P. Didusch Center for Urologic History, Linthicum)

and join his pathology lab at Johns Hopkins University. (23-26) After another brief stint in rehab in 1887, (23, 26) Halsted succeeded in impressing his new peers and by 1889 was appointed surgeon at the newly opened Johns Hopkins Hospital. (23, 26, 27) In 1890 he was made its first Surgeon-in-Chief and, in 1892, became the first Professor of Surgery at the recently opened School of Medicine. (23-27) He is now considered one of the founding 'Big Four' doctors at Hopkins—alongside Welch, William Osler, and Howard Kelly (1858-1943)—and it was at Hopkins that Halsted would also establish the first American surgical residency program. (2, 10, 23)

### The Halsted Model

A residency program at Hopkins was originally proposed by Osler to the Board of Trustees in 1890, likely stemming from his prior exposure to the French IHP system. (16) Upon his arrival and appointment, Halsted quickly and enthusiastically implemented the system for surgical training (Figure 3). (2, 24) Halsted's "pyramidal" model of surgical residency training at Hopkins updated but drew heavily on the French and German training systems he encountered when traveling and studying abroad. (2, 9, 23, 25, 27, 28) While giving the 1904 Annual Address in Medicine at Yale, his alma mater, he stated, "It was our intention originally to adopt as closely as possible the German plan." (5) Still, his methods were not without innovation and certainly unlike any other

surgical training program in America at the time. (29)

Halsted selected eight surgical residents the first year, with four occupying one-year positions and four remaining on in perpetual appointments. (5, 18, 25, 27-30) Of the latter four, one was appointed the chief or "house surgeon", with the other three as assistant surgeons in line for promotion once Halsted personally approved the chief for graduation to independent practice. (5, 18, 25, 27-30) There was no set duration of training for the four residents on permanent staff, and advancement was not guaranteed. (5, 18, 29) The system was biased to create a single exemplary academic surgeon, somewhat at the expense of the others. Even those who did not rise to the top, however, still went on to have illustrious surgical careers. (23, 25, 30) While Halsted adamantly defended his system's soundness, detractors pointed to the arduous length of training and pyramidal structure as obvious faults. (18, 28) Still, the Halsted model became prominent thanks to his many trainees spreading its tenets after departure, such as Harvey Cushing (1869-1939) upon his 1912 arrival at the Brigham Hospital in Boston. (9, 27)

Even alongside the Halsted model's success, other programs existed and innovation slowly took place. For example, two- and three-year surgical training programs were common at other hospitals such as the University of Pennsylvania and Massachusetts General Hospital (MGH) in the early 1900s, but it was felt that these

graduates were still not fully ready for independent practice.<sup>(30)</sup> The first major evolution of Halsted's model came in 1922, when his 13th resident, George Heuer (1882-1950), left to become Chair of Surgery at the University of Cincinnati.<sup>(27)</sup> Heuer's model borrowed from Halsted's, but replaced its perpetual appointments with set training durations. In Heuer's residency, a one-year internship was followed by a six-year surgical residency, and it was the first to introduce regular rotations in various surgical domains. For example, residents in their third year primarily focused on urology and orthopedics.<sup>(31)</sup> In 1932, Heuer moved to Cornell Medical Center in New York and established another surgical residency in the same style of Cincinnati's.<sup>(31)</sup>

The next major shift came in 1938, when Edward Churchill at MGH proposed his "rectangular" residency model (Figure 3).<sup>(30, 32)</sup> A major critic of Halsted's long and autocratic structure, Churchill favored a training model which emphasized groups of surgeon mentors instead of a single dominant master.<sup>(30)</sup> Critiquing the fast and frequent exiting of residents from Halsted's program, he famously remarked, "half a surgical training is about as useful as half a billiard ball."<sup>(25, 28, 30)</sup> MGH's previous two-year training program had been expanded to three in 1935, and in comparison, Churchill's new system accepted fewer candidates but kept them longer to ensure each resident received a complete and holistic surgical education.<sup>(30, 32)</sup> All six residents would complete five years of training, and two could then optionally stay on for an additional supervisory year of clinical work or education in preparation for an academic career.<sup>(30)</sup> Churchill's model traded the competitiveness of Halsted's for a collaborative approach, and still serves as the backbone of surgical residency programs today.<sup>(18, 25)</sup>

## DISCUSSION

### Hugh Hampton Young and the Brady Institute

Residency in urology would eventually arise under the influence of Hugh Hampton Young, one of Halsted's initial residents (Figure 4). Born September 18, 1870 in Texas, Young began to spend time with his grandfather, a surgeon in Virginia, around age 12 and quickly developed a knack for working with his hands.<sup>(3, 6)</sup> Just over a decade later, he followed in his grandfather's footsteps and earned a medical degree from the University of Virginia in 1894.<sup>(3, 6)</sup> In his autobiography, Young commented on the poor state of medical education at the time and lack of clinical practice among most of the teaching professors, perhaps foreshadowing

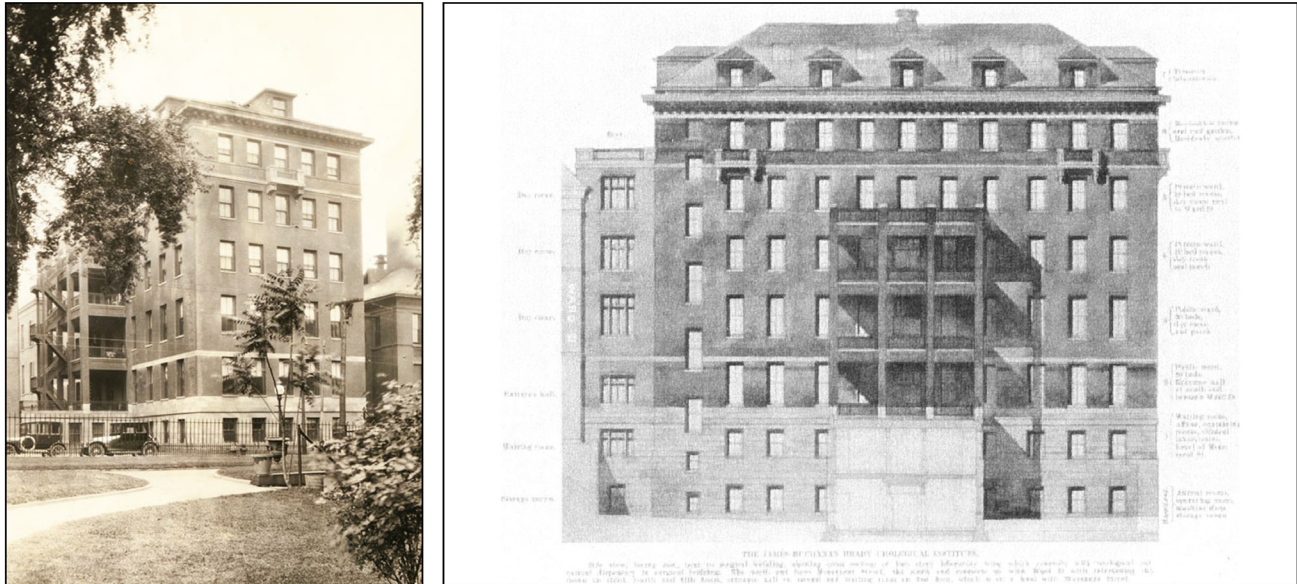
his subsequent desire to improve urologic training. Young arrived at Hopkins shortly after graduating and initially worked in pediatrics, bacteriology, and pathology as Halsted had no surgical intern positions available at the time.<sup>(3, 6)</sup> To Young's excitement, he was soon able to fill a temporary vacancy and ultimately was appointed to stay on as a house officer.<sup>(1, 3, 6)</sup>

In 1896 he began to study bladder dysfunction and by 1897 was made Chair of the Department of Genitourinary Diseases at age 27, after the death of its former leader, James Brown, two years prior.<sup>(3, 29, 33)</sup> Despite his research, Young had no particular clinical interest in urology at the time and instead expected to pursue other routes within general surgery.<sup>(6)</sup> In response to the promotion, famously cited as occurring after Halsted and Young literally ran into each other in the hallway, Young stated, "This is a great surprise. I know nothing about genitourinary surgery."<sup>(1, 6)</sup> Halsted then replied, "Welch and I said you didn't know anything about it, but we believe you could learn."<sup>(1, 6)</sup> And learn he did, helping the department through 1941 and embarking on an illustrious career which ultimately led to his reputation as the 'Father of American Urology'.<sup>(3)</sup>

From 1897-1915, Young was allowed to recommend aspiring urologists to Halsted for appointment in the surgical residency, spawning the beginnings of the urologic specialty as we know it today.<sup>(1)</sup> One such appointee was Frank Hinman Sr. (1880-1967), who would later go on to become Young's first urology resident at Hopkins in 1912 before leaving in 1915 to open a private practice and then soon after assume the Chairman of Urology role at the University of California in San Francisco (Figure 4).<sup>(1, 6, 34)</sup> Coincidentally, his son Frank Hinman Jr. (1915-2011) was born that very same year and pursued urology himself, eventually joining his father's private practice in San Francisco and penning his famous *Atlas of Urologic Surgery* which is still widely used today.<sup>(35)</sup>

Young's illustrious career was full of landmark innovations and famous trainees, but undoubtedly his most famous patient was a wealthy businessman in the railroad and steel industries named James Buchanan Brady (Figure 5).<sup>(6, 36, 37)</sup> Known as "Diamond Jim" for his penchant for fine jewelry and elaborate collection of the aforementioned gemstones, he was "remarkably generous" and "one of the most extraordinary men I have known" in Young's words.<sup>(6)</sup> The two met in 1912, when Brady sought out Young's practice after finding no relief from other physicians in Boston and New York for his agonizingly infected and obstructing prostate.<sup>(36)</sup>





**Figure 6.** (Left) The James Buchanan Brady Urological Institute, exterior view, began construction in November 1913 and opened for patient care in January 1915. (Alan Masan Chesney Archives, Johns Hopkins Hospital, Baltimore). (Right) A schematic of the building published in a 1914 Johns Hopkins alumni magazine where a 7-year urology residency was designed and established by Hugh Hampton Young, the first urology residency in America. (Public Domain, J Hop Alumni Mag, 1914; 2: 96)

The symptoms were so excruciating that Brady instructed his valet to open the safe one night, believing his death was imminent, and burn specific sensitive documents.(37)

Much to Diamond Jim's relief, Young recommended an exciting new transurethral approach with an instrument he had recently invented, as opposed to open prostatectomy, which his prior surgeons had deemed too risky due to Brady's severe obesity, diabetes, and heart disease.(6, 37) Thus, Young performed his famous prostatic 'punch' resection on April 7, 1912 and, despite a postoperative infection, Brady recovered quickly and remarkably well.(6, 37) Brady was so thrilled with the outcome that he showered Young and his family with elaborate gifts, and a strong bond of friendship developed as their clinical relationship continued.(6)

The following year, Young became interested in building a urologic hospital at Hopkins.(3) He had prepared rudimentary plans years earlier, but the funding fell through and the idea had been abandoned.(6) Revisiting the prospect, Young thought of Brady, who had previously confided in him an admission that his lavish spending on actresses and entertainment often felt like "mistaken generosity."(6) "Thinking of the money Brady had squandered, it occurred to me that he might be persuaded to build a hospital as a monument to himself," Young wrote.(6) At his next check-up appointment, Young proposed the idea and "saw that Brady was greatly impressed."(6) Soon after, Diamond Jim donated \$220,000

(Figure 5) in order to establish the James Buchanan Brady Urological Institute at Johns Hopkins Hospital, which broke ground on November 15, 1913 and opened to patients on January 21, 1915 (Figure 6).(1, 3, 6, 37) In Young's words, "Brady often sent patients to be treated at his institute," and "(the) fact that they were all taken care of without expense was greatly appreciated by Brady, who often said that the pleasure he got from building the institute was great and that he was sorry he had not done it years before."(6)

### The First Urology Residency

Alongside the Brady Institute's construction, Young drew upon both German and Halstedian inspiration and designed a seven-year surgical residency training program in urology, with six years spent in Baltimore and one away in Minnesota under the tutelage of Dr. Frederick Foley (1891-1966).(3, 6) The structure consisted of a chief resident of sorts, numerous subordinate house officers, and integrated medical students into the training just as Osler and those before him had emphasized.(3) Young's residents enjoyed an intern year; supplemental rotations in general surgery, gynecology, and pathology; research time; and multiple dedicated years of urology training.(3, 6) In their final year of training as chief, or "resident urologist", Young's trainees would take a more active role in leadership, teaching, and research at the institute and performed nearly all of the surgeries in the public

wards.(1, 3, 6)

In his thirty years presiding over the residency, Young's progeny numbered at least 38 chief residents and countless more assistant residents.(1, 3) Hinman Sr. was the first true urology resident at Hopkins, training under Young from 1912 until 1915, when Hinman briefly became the first chief resident at the brand new Brady Institute before departing for San Francisco.(1, 6, 34) However, it was his successor William A. Frontz (1885-1934) who would become the first to complete a full chief year at the Brady Institute after the residency program transitioned there in June, 1915 (Figure 4).(1, 6) After completing his training, Frontz stayed on at the Brady Institute as an assistant in urology and then as an assistant visiting urologist until his untimely death from an acute dilation of the heart at the age of 49.(1) The residency program was quick to become a remarkable

success, with Young's many subsequent disciples often earning professorships and heading urology programs across the country immediately upon graduation.(6)

## CONCLUSION

The first formal residency training program in American urology was founded in 1915 by Hugh Hampton Young alongside the opening of the James Buchanan Brady Urological Institute at Johns Hopkins Hospital. While these events are rarely taught in formal urologic curricula, their historical importance cannot be overstated. Recognizing where this current residency training model originated is critical context for all who seek to improve and evolve how the urologists of tomorrow are trained.

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# Elmer Belt, Harry Benjamin, and the Birth of Gender-Affirming Surgery in the United States

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**Introduction:** Gender Affirming Surgery (GAS) originated in early 20th century Europe and innovators there established some of the first surgical and social principles of GAS. GAS in the United States, however, lagged behind in practice and acceptance. Two American pioneers in the care of patients undergoing gender-affirmation therapies were Elmer Belt and Harry Benjamin. How they became dedicated to GAS and establishing a new standard of care for GAS in the United States is less clear. Our goal was to describe how Belt and Benjamin created GAS in the US, in the context of their time, and how their work influenced our current approach to transgender care.

**Sources and Methods:** We accessed the private papers, correspondences, and memos of Belt and Benjamin from their private libraries, donated collections to local archives or libraries including the University of California at Los Angeles, the National Library of France (Paris), and the National Library of Medicine (Bethesda). We used secondary sources as cited.

**Results:** The first documented GAS was performed in Berlin at the Charité Hospital in collaboration with Magnus Hirschfeld's Institut für Sexualwissenschaft in 1922. Thirty years later, the sensational story of Christine Jorgensen, an American GI who underwent transgender surgery in Denmark, sparked US interest in transgenderism. By the early 1950s, US endocrinologist and transgender activist, Harry Benjamin, sought a surgical partnership with Elmer Belt, a Los Angeles urologist. Belt became the first surgeon in the US to perform gender affirming surgery, though he did so in secrecy. His surgical interventions included penectomy, vaginoplasty, and abdominal transposition of the testicles. Despite the safeguards that Belt and Benjamin created, Belt ultimately discontinued gender affirming surgeries as he feared patient regret might lead to either legal or personal retribution. These unofficial safeguards ultimately influenced the World Professional Association of Transgender Health (WPATH) standards of care, leaving a lasting impact on the field of gender affirming medicine.

**Conclusions:** Benjamin and Belt were extremely influential in the birth of gender affirming surgical care in the US

**Key Words:** Elmer Belt, Harry Benjamin, Gender Affirming Surgery, Transgender Medicine



ender affirming surgery was first documented as early as 1922 in Berlin, but its expansion to other parts of the world halted in the wake of World War II. However, wartime trauma advancements by British plastic surgeon Harold Gillies ultimately became the foundation for phalloplasty, and the post-World War II era presented a cultural shift in the American ethos that allowed for advancements in gender affirming surgery.(1) Americans in the late 1940s and early 1950s were experiencing "technological euphoria" with the steadfast belief that scientific advancement and discovery were limitless. (2) In addition, there was an increasing acceptance of individualist culture that emphasized one's right to live as they chose.(3) This atmosphere lent itself to

curiosity among the general, medical, and transgender population alike, and it likely influenced Dr. Harry Benjamin and Dr. Elmer Belt to pursue gender affirming surgical care for their transgender patients.

## SOURCES AND METHODS

Secondary literature was reviewed regarding the individual roles of Drs. Elmer Belt and Harry Benjamin in advancing gender affirming surgery in the United States, including scientific publications, transgender history books, and personal files of Belt and Benjamin. The UCLA Library Special Collections provided Dr. Belt's files, containing many correspondences between Belt and Benjamin. The Kinsey Institute for Research in Sex, Gender, and Reproduction at Indiana University

provided Dr. Harry Benjamin's personal files, including correspondences with Dr. Belt. In addition, we accessed the collections of the National Library of Medicine at [www.nlm.nih.gov](http://www.nlm.nih.gov), the Library of France at [www.gallica.fr](http://www.gallica.fr), the Magnus Hirschfeld society at [www.magnus-hirschfeld.de](http://www.magnus-hirschfeld.de), and the German Map Archives at [landkartenarchiv.de](http://landkartenarchiv.de).

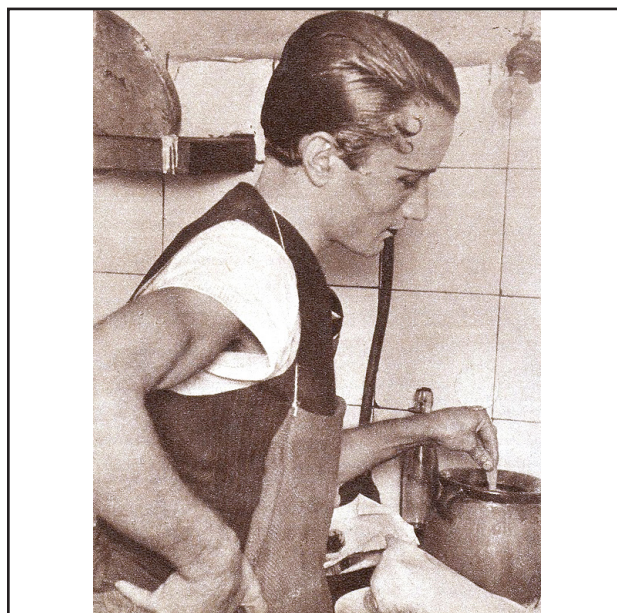
## RESULTS

### Hirschfeld and the *Institut für Sexualwissenschaft*

Transgenderism has likely been perceived in humanity from time immemorial but it was not until German Sexologist Magnus Hirschfeld (1868 – 1935) developed formal codification schemata to establish boundaries between homosexuality, transvestitism, and transsexualism (Figure 1). He termed individuals as "transsexuals" if their desired gender identity conflicted with their sex assigned at birth. Critically, this established a category separate from that of homosexual and transvestite individuals. In 1919, Hirschfeld established the *Institut für Sexualwissenschaft* (The Institute for Sexual Science) in Berlin to study gender identity and sexuality (Figure 2).(4) As a gay man himself, he advocated for and employed many of his patients at the Institute to protect them from legal troubles as they

lived out their desired lives (Figure 1).(5)

One of Hirschfeld's patients and employees was Dora (Rudolph) Richter (1892-1933) (Figure 3). Rudolph Richter experienced severe gender dysphoria from a young age and, when only 6 years old, she attempted to remove her own penis with a tourniquet. After multiple arrests for cross dressing, she was released into the custody of Hirschfeld who employed her as a domestic servant at the Institute. In 1922, Richter underwent orchiectomy at the nearby Charité Hospital by German surgeon (and future convicted war criminal) Erwin Gorhbandt (1890-1965). In early 1931, reconstructive surgeon Dr. Ludwig Levy-Lunz (1889-1976) performed Richter's penectomy (Figure 3). Following her recovery, Richter then underwent the first documented gender affirming vaginoplasty, performed by Gorhbandt. In this procedure, Gorhbandt incorporated surgical principles of vaginoplasty, described in the late 19th century for the Mayer-Rokitansky-Kuster-Hauser population with congenital vaginal atresia.(5) In this procedure, a perineal dissection between the bladder and rectum was carried to a depth of 12 cm until peritoneum was reached, creating a space for the neovagina. Upper thigh skin grafts were used to line the neovagina, reinforced by an intravaginal sponge sutured in place to mold the cavity. The sponge was left *in situ* for several weeks post



**Figure 1.** Magnus Hirschfeld (left) (1868-1935), in exile in Paris, early 1930s, established the *Institut für Sexualwissenschaft*, in Berlin, as part research center and part shelter where many transgender individuals were employed (right) (*Voilà : l'hebdomadaire du reportage*, 7/1/1933, National Library of France).





**Figure 2.** 1920's Berlin, site of the world's first gender affirmation surgery. Pictured here in city center are **A**, site of Hirschfeld's *Institut für Sexualwissenschaft* on 3 Beethoven Strasse; **B**, Charité Hospital where Dora Richter's 1922 and 1931 surgeries took place; and **C**, the Operaplatz (now Bebelplatz), where marauding SS youth staged a book burning of all of the Institute's written materials on May 10th, 1933. (Pharus Berlin, 1920, *Landkartenarchive*, Germany)

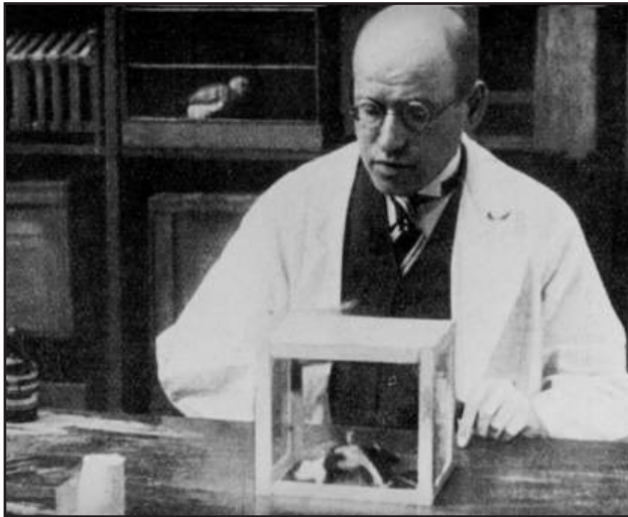
operatively to help the graft adhere to the neovaginal wall. Following sponge removal, neovaginal dilations were performed to maintain the neovaginal cavity. Subsequently, Felix Abraham (1901-1937) published reports describing Richter's and Lili Elbe's (a Danish painter, 1882-1931) gender-affirming vaginoplasties in 1931. Tragically, the Institute was raided by Nazi-backed students in 1933, and its library and contents were burned in the infamous book conflagration of May 10th, 1933 (Figure 2). It is presumed that Richter did not survive the attack but others have reported that she survived the war in Czechoslovakia and then West Germany.(5) Hirschfeld himself had left Germany in 1930 for a world-wide good-will tour and was never to return, eventually dying in exile in Nice, France, while many of the Institute's employees were persecuted under the Nazi regime.(5)

### **Christine Jorgensen and American GAS**

Over the next 20 years, and with Europe under the cloud of WWII, there were few advances in the field of transgender care.(5) However, in 1952 transsexualism

and gender-affirming surgery was revitalized by news of Christine Jorgensen (1926-1989), the "Ex-GI" who became a "Blonde Beauty" after GAS overseas (Figure 4). Her 1953 surgery was the most frequently reported topic in the United States.(2) George Jorgensen traveled to Denmark in 1950 after learning that doctors there were hormonally and surgically treating transgender patients. She described her journey as a "one way ticket to a new life...George Jorgensen is never coming home."(6) She worked with Danish endocrinologist Christian Hamburger (1904-1992) who treated her with synthetic estrogen, a new advent in endocrinology. Christine was readily willing to be experimented upon and serve as a self-proclaimed "guinea pig".(6) Hamburger ultimately was the inspiration for her chosen name, "Christine". In 1951, following legal approval in Copenhagen, she underwent orchiectomy, soon followed by penectomy in 1952. Although reports vary, it is believed that she eventually underwent vaginoplasty upon her return to the United States.(5) Christine paved the way for transgender individuals in the United States as her publicity shed light on the societal and medical





**Figure 3.** Ludwig Levy-Lenz (1892-1966) (left) was said to have performed penectomy, the second stage of gender affirmation surgery for Dora Richter (right), in 1931, shown here working in Hirschfeld's Institute on Beethoven Strasse, early 1920s (Both WikiCommons).

challenges faced by those considering gender-affirming therapies. She supported herself by performing on stage with songs and dance, never sexualizing her transition by adhering to the stereotypical '1950s housewife' persona.<sup>(3)</sup> Her efforts in this regard appeared to have engendered a positive public response and influenced perspectives regarding transgender individuals.<sup>(1)</sup> In his 1966 publication "The Transsexual Phenomenon", German born and educated endocrinologist Harry Benjamin (1889-1986) stated that "the case of Christine Jorgensen focused attention on the problem as never before.



**Figure 4.** Christine Jorgensen (1926-1989), the American actress and singer, and the US first known GAS patient. (Dare magazine, July 1953, Public Domain)

Without her courage and determination, undoubtedly springing from a force deep inside her, transsexualism might be still unknown -- and might still be considered to be something barely on the fringe of medical science."<sup>(7)</sup>

Headlines at this time focused on GAS being performed overseas, but the New York endocrinologist Harry Benjamin was by 1950 already providing hormonal treatment to transgender patients. Benjamin had a longstanding friendship with Hirschfeld and he had trained under Austrian physiologist Eugen Steinach (1861-1944). Steinach, who partnered with Hirschfeld in the 1920s, was the first to identify the morphologic effects of synthetic testosterone and estrogen on human development.<sup>(3)</sup> Benjamin eventually fled Nazi Germany for the US but had visited the Institute many times during the 1920s and early 1930s.<sup>(8)</sup> In the late 1940s, Benjamin was referred a transfeminine patient. Given his experience with hormonal treatments in the geriatric population, he felt comfortable hormonally treating the patient in hopes of improving her gender identity.<sup>(8)</sup> A large influx of patients sought Christian Hamburger's care in Denmark following the publicity of the case of Christine Jorgensen. In response, the Danish Ministry of Justice officially banned international patients.<sup>(3)</sup> Hamburger was greatly empathetic to the more than 450 potential patients who had written him and recommended that they contact Benjamin.<sup>(3)</sup> Benjamin developed such a large following thereafter that he required a surgical partnership and an ally for surgical referrals. He found one in Elmer Belt, already an established urologist in Los Angeles.





**Figure 4.** Elmer Belt (1893-1980), the UCLA urologist and historian, was a pioneer in American gender-affirming surgeries in the 1950s and early 1960s though struggled with the socio-economic impact on his patients who he felt had unrealistic expectations of GAS outcomes.(UCLA archives, Los Angeles)

### **Elmer Belt, American pioneer**

Elmer Belt (1893-1980) performed gender-affirming surgeries at Good Samaritan Hospital as the University of California at Los Angeles (UCLA), where he was on faculty, objected to his performing GAS there.(9) It is reported that Belt began performing GAS including penectomy, vaginoplasty, and abdominal transposition of the testicles as early as 1950 for patients referred by Benjamin.(3) From 1950 to 1954, Belt performed at least a dozen GAS in secrecy.(1) Rather than orchiectomy, Belt performed abdominal transposition of the testes in order to circumvent California's so-called 'mayhem laws' which forbid elective castration.(10) Patients who tolerated several months of hormone therapy and still desired castration were referred to the general surgeon, JC Koch of Amsterdam whom Benjamin knew through the Dutch psychiatrist Frederik Hartsuiker of the Netherlands. With time, however, Hartsuiker became skeptical of the practice and referred all of Benjamin's patients to the Dutch psychiatrist Dr. Coen van Emde Boas (1904-1981). Following successful orchiectomy, these patients returned to the United States, often completing their feminizing vaginoplasty with Elmer Belt, as the surgeons in Amsterdam were not yet performing

vaginoplasty.(10)

Little is documented about the methods of Elmer Belt's gender-affirming surgery. He practiced in relative secrecy and purposefully did not publicize his care for the transgender population. Furthermore, many of his files were destroyed in a 1958 office fire. In contrast, Benjamin was a published author and presented nationally on his experiences with the hormonal and surgical outcomes of his patients, many of whom had been operated upon by Belt. What little is known about Belt's transgender work is through patient reports and his personal files that were donated to the UCLA Library. In her autobiography, *"The Man-Maid Doll"*, Patricia Morgan reported her care under Belt including her undergoing penectomy and intraabdominal testicular transposition, followed two months later by vaginoplasty. She recounted in horror the smell of tissue necrosis after neovaginal sponge removal and immense pain with in-clinic neovaginal dilations. (11) Other patients recall Belt's office staff seeming uneasy by their presence. Despite being treated rudely at times, patients felt that they had to tolerate this treatment as Belt was their only hope for transfeminine surgery in the US.(3)

Patient selection for surgery was critically important to

MEDICAL QUESTIONNAIRE - DECEMBER 1968

1. How many (H/A) hermaphrodite (or pseudo-hermaphrodite patients have you treated during the past 46 years? *five*

A - True H/A	<u>2</u>
B - Male Pseudo-H/A	<u>3</u>
C - Female Pseudo-H/A	<u>    </u>
2. How many transsexual\* (T/S) patients have you treated during the past 20 years? 70

M - (Genetic male)	<u>70</u>
F - (Genetic female)	<u>    </u>
3. How many transvestite\*\* (T/V) patients have you treated during the past 20 years? 72

M - (Genetic male)	<u>72</u>
F - (Genetic female)	<u>    </u>
4. How many are receiving hormone treatment?

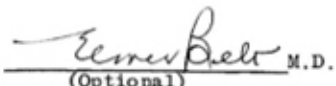
	H/A <u>    </u> H/A <u>    </u>	
By you: M T/S <u>20</u> F T/S <u>    </u>	By others: M T/S <u>    </u> F T/S <u>    </u>	
T/V <u>80</u> T/V <u>    </u>	T/V <u>    </u> T/V <u>    </u>	
5. How many of your transsexuals (or that you know of) have had the sex reassignment operation?

(Male to female)	<u>12</u>
(Female to male)	<u>1</u>
6. How many patients with Klinefelter syndrome have you *Diagnosed + refer to endocrinologist* treated? 6
7. How many other physicians do you know who treat transsexuals non-surgically with hormones? 15 By other means?
8. If it is agreeable to you and the physicians referred to above, the Erickson Educational Foundation would like to add these names to the referral file to respond to inquiries from transsexuals and others outside the New York area (and outside U.S.A.).

Would you be willing to advise us in the event that you know that a physician or hospital has initiated research, treatment, or operations on transsexuals?      If so, we will appreciate receiving such information.

\* Individual who is genetically of one sex but psychologically of the opposite sex.  
 \*\* Individual with overwhelming desire to wear clothes of the opposite sex.

COMMENT:

  
 (Optional) M.D.

NOTE: To mail this sheet, just fold and seal. It is already self-sealing, stamped and addressed.

**Figure 5.** Medical questionnaire sent to Belt on behalf of the Erickson Educational Foundation in 1968. The filled out questionnaire catalogs Belt's clinical experience and volume of gender-affirming surgeries that he performed. This questionnaire was among Belt's personal files that were donated to UCLA Library Special Collections by his family.(18)

both Benjamin and Belt who harbored fears of either personal or legal retribution from patients. In an attempt to minimize patient regret, Belt would send Benjamin's patients to psychiatrist Carroll Carlson "in accordance with our established routine".(12) However, psychiatric clearance was often not enough to convince Belt to operate.(13) Benjamin wrote that surgical, psychological, and practical outcomes were the three essential criteria to consider surgery.(13) As a result of their own stringent criteria to protect patients and themselves, Benjamin and Belt ultimately withheld surgeries from patients who

otherwise had adhered to normative transgender roles. (13) Benjamin and Belt corresponded frequently about patient "EV". In one letter, Belt wrote to Benjamin that he wasn't comfortable operating on EV "regardless of what the psychiatrists say".(14) Belt joked in one letter to Benjamin that they would both likely "get shot by some patient like EV" highlighting their fear of personal retribution.(15) Belt conjectured that because EV would not "pass" as a woman in society at the time, which could potentially affect her income potential, she was at risk of developing "surgical regret".(13)

### Factors of Social Impact on Surgical Results

Some patients expected Belt and Benjamin to assist them in finding jobs after surgery once the patients found themselves abandoned by their family and social support systems.(3,13) The perceived need to 'blend into society' in the stereotypical mold of the new gender identity became another requirement for Belt before he agreed to operate upon a patient. Such caution demonstrates that, while Belt and Benjamin were, in general, supportive of transgender patients' right to surgery, they were highly selective 'gatekeepers' before surgical therapies could be commenced. Despite having "a strong sense of compassion for these poor devils", Belt soured as his patients' demands increased.(16) He once wrote that "in the most successful operation we ever had, the patient came in after all was done expressing dissatisfaction because there was not a uterus with tubes and ovaries... and she could therefore not have a baby."(3) Belt and Benjamin's correspondence highlighted their desire to offer surgery only to patients "who weren't too demanding" as their self-advocacy was perceived as impatience and volatility.(13) In this early era of transgender medicine, Belt's concerns were not inconsistent with fellow practitioners fearing their patients would "ruin their lives".(13) Ultimately, Belt felt that his patients continued to demand more. "No matter what we do," he wrote "they will never be satisfied."(17) Moreover, familial pressure to step away played a role for Dr. Belt. In 1954, Belt's nephew, Willard Goodwin (1915-1998), Chief of Urology at UCLA, sat on a committee that temporarily prohibited gender-affirming surgeries there. Given the legal fears, Belt followed suit.(3) By the late 1950s, Belt quietly and reluctantly resumed his surgical gender affirming practice. He referenced that he eventually stopped offering surgery as some patients "expected more than the surgeon can possibly deliver -- even though the limitations -- were most carefully set forth preoperatively."(14) The combined fear of legal retribution and frustration with patient's unrealistic expectations ultimately drove Dr. Belt to close this chapter of his career in 1962.

Belt ultimately reported operating on 72 male to female and 1 female to male patients (Figure 5).(18) Benjamin felt that one third of the surgical outcomes were "good" and approximately one half were satisfactory.(19) Psychiatrist Ira Pauly published a post-operative satisfaction rate of over 80% in his global review of outcomes after GAS, a cohort that included many of Belt's patients.(20)

### International Gender Dysphoria Association

Belt and Benjamin's unofficial practice to legally safeguard themselves ultimately influenced the precedent established by the Harry Benjamin International Gender Dysphoria Association.(13) In its 1979 standards-of-care document, the founding committee emphasized that sex-reassignment on demand is contraindicated. Similar to Benjamin and Belt's assessment that patients needed to "pass" in society living in their desired gender to minimize surgical regret, the committee's "Principle 12" stated that "the best indicator for hormonal and surgical sex-reassignment is how successfully the patient has been living out, full time, vocationally and avocationally (sic), in all social situations, the social role of the genetically other sex, and how successful the patient has been in being accepted by others as a member of that genetically other sex."(21)

Standard 8 stated that psychiatrists recommending genital gender-affirming surgery must obtain peer review by another mental health professional, resulting in the well-established 'two letter' requirement, which remained controversial requirement in the updated World Professional Association of Transgender Health recommendations.(14,21) Benjamin and Belt's conservative practices shaped the way in which doctors approached gender affirming care for years to come: with trepidation and multiple safeguards to protect themselves from legal action resulting from patient regret.

Dr. Belt continued to remain in close contact with Dr. Benjamin, despite refraining from gender affirming surgeries after 1962. In their letters to each other, Belt remained passionately (though quietly) abreast of transgender news across the world. In a 1977 holiday card to Benjamin, Belt wrote "How wonderful it is to have the transsexual problem so widely and generally accepted now, all due to the wonderful start you gave it.(22) He was incredibly empathetic to the suffering of his trans patient --a self-proclaimed "softie"-- but he experienced immense societal and personal pressure to remain under the radar and protect his career.(3)

### CONCLUSION

Some modern-day critics have labeled Belt and Benjamin's care as paternalistic at a time when transgender care was previously ignored. Their legacy, however, was their establishing an opportunity for medical and surgical care for transgender individuals that prioritized a responsible approach to minimize patient regret.



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# Charles Huggins' Road Not Taken at the Brady Urological Institute

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**Introduction:** Twenty years before Charles Huggins became one of two urologists to win a Nobel Prize, he earned a different prestigious title: Hugh Hampton Young's successor at the Brady Urological Institute. This article seeks to better understand Huggins' relationship with the 'Brady' and why he accepted the position, only to repudiate the offer months later.

**Sources and Methods:** Archival research was conducted at the Alan Mason Chesney Medical Archives at Johns Hopkins and at the Hanna Holborn Gray Special Collections Research Center at The University of Chicago. Secondary sources were accessed as cited.


**Results:** Letters between Charles Huggins and Alfred Blalock, the Director of Surgery at Johns Hopkins Hospital (JHH), reveal that Huggins' relationship with the Brady began earlier than previously reported. When Hugh Hampton Young retired in 1941, Blalock wanted Huggins to become the Chair, but socio-political factors interfered with his appointment. When Huggins was finally offered the position in 1945, he accepted the post but he resigned shortly thereafter.

**Conclusions:** The presented research provides insight into a turbulent period of transition at Hopkins. However, several archival gaps remain. Nevertheless, findings reveal that Huggins' decision kept the Brady on the original trajectory set by Hugh Hampton Young. Huggins' decision to relinquish the offered Chair position was motivated by something quite personal, his professional goals, and his sense of self.

**Key Words:** Charles Huggins; Hugh Hampton Young; History of Medicine; Archives

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n the official annals of the Brady Urological Institute at Johns Hopkins, Charles B. Huggins receives only a brief mention.<sup>(1,2)</sup> Yet it is a well-known fact that, in 1946, Huggins accepted an appointment as Chair and then relinquished the post.<sup>(1,2)</sup> Archival evidence from the Alan Mason Chesney Medical Archives at Johns Hopkins and The Hanna Holborn Gray Special Collections Research Center at The University of Chicago reveal that, contrary to published accounts, 1946 was not the beginning of Huggins' relationship with the Brady. The author conducted research using primary archival materials in order to better understand the nature and extent of Huggins' relationship with the Brady and why, only a few months after accepting the appointment at Hopkins, he reneged on the decision.

## SOURCES AND METHODS

Primary documents, archival records, and correspondences were accessed at the Alan Mason Chesney Medical Archives at Johns Hopkins University and The Hanna Holborn Gray Special Collections Research Center at The University of Chicago. Multiple in-person visits were made in May, August, and October of 2024,

The Chesney Medical Archives began informally in the 1930s when Alan Mason Chesney, the dean of Johns Hopkins Medicine, discovered a treasure trove of documents relating to the founding of Johns Hopkins Hospital and the School of Medicine. Chesney was inspired to continue collecting materials on Hopkins history and his personal passion set in motion a tradition of archival research at the institution. In 1974,



**Figure 1.** The Hanna Holborn Gray Special Collections Research Center at The University of Chicago (UC) which holds the largest collection of archives related to Charles Huggins during his tenure at UC over a remarkable 70 year career from 1927-1990 (Author's Personal Photo, AJG).

A. McGehee Harvey was appointed the institution's first Associate Archivist; by 1978, the Hopkins archives were named in honor of Alan Mason Chesney for his contributions to preserving Hopkins history.<sup>3</sup> Today, the Chesney Archives houses photographs, artifacts and medical instruments, personal papers, audio recordings, institutional records, and biographical files. The entire collection is massive; the personal records of Hugh Hampton Young, for example, occupy 35 linear feet.<sup>4</sup> The Hanna Holborn Gray Special Collections Research Center houses a portion of The University of Chicago Library's collection, including various manuscripts, University materials, rare books, and the Chicago Jazz Archives. The Department of Special Collections, as it was known, was created in 1953. In 2020, it was named for Hanna Holborn Gray who served as the tenth President of the University from 1978 to 1993. The Center houses 350,000 rare books, 13,216 linear feet of manuscripts and other documents, and 60,234 linear feet of University material (Figure 1).<sup>5</sup> Charles Huggins had a longstanding relationship with The University of Chicago beginning as a research fellow in 1927 and ending as a retired Professor Emeritus in 1990.

Requests to access materials at both archives can be submitted online using institution-specific forms. After approval, researchers can select a date to visit the archives and view the materials. For this study, multiple visits were made to each archive to comprehensively assess the relevant materials.

## RESULTS

### The Inter-Regnum: Finding the Brady's 2nd Chair

In 1941, when Hugh Hampton Young stepped down as the Brady's first Chair, the search for his successor began.<sup>(2)</sup> Many thought it would be difficult to find someone of Young's stature to fill the position. Alfred Blalock, who was Director of Surgery at Johns Hopkins and charged with selecting Young's successor, wanted to appoint a full-time faculty member as part of a larger move away from faculty with private practices to faculty devoted to research and patient care.<sup>(6)</sup> Blalock was inspired by The University of Chicago where such a transition had already occurred.<sup>i</sup>

At that time, Charles Huggins, a professor of surgery at The University of Chicago, had recently published a series of papers detailing the androgen-dependent nature of prostatic tissue, a finding that would later win him the 1966 Nobel Prize in Medicine.<sup>(7)</sup> Shortly after that publication, around February 1942, Huggins and Blalock began a robust correspondence, some of which can be found at The University of Chicago and Johns Hopkins.<sup>(8,9)</sup> Seemingly uncharacteristic of professional correspondence during this era but suggestive of a warm personal relationship, "Charlie" wrote to "Al" and vice versa.<sup>(8,9)</sup>

Early in their correspondence, Blalock suggested he wanted Huggins to lead the Brady but that other factors complicated the decision. "Dr. Hugh Young would like to have the men who have been trained by





**Figure 2.** (Left) Alfred Blalock (1899-1964), the Chair of Surgery at Johns Hopkins Hospital at the time of Hugh H. Young's retirement in 1941. (Courtesy, The Alan Mason Chesney Archives Johns Hopkins University) Blalock was in charge for the search for Young's successor and his first order of business was to try and recruit the young Charles Huggins (Right) away from his busy research post at the University of Chicago. (Courtesy, William P. Didusch Center for Urological History, Linthicum, Md)

him considered very carefully as his successor," Blalock explained.<sup>9</sup> Blalock reassured Huggins of the desired outcome: "I want you to know that I feel just as I did when I talked to you in Chicago...[and] I hope you will appreciate the spirit in which this letter is written, and it is because of my friendship for you that I am describing the situation as I see it."<sup>(8)</sup>

By March 1942, Blalock wrote to Huggins that "nothing...[could] be done about the appointment of a permanent Professor of Urology."<sup>(8)</sup> Huggins responded, expressing he was "greatly honored... by being considered," but that he was disappointed because he had already arranged for his family "to consider an offer seriously."<sup>(8)</sup> Huggins knew that the position would have "meant a widened scope for my work" and allowed him to focus on "the primary functions of the clinical teacher...the advancement of knowledge by investigative techniques."<sup>(8)</sup> Despite Huggins' disappointment, he told Blalock, "[I]f I may be of any assistance to you in the future, please feel free to call upon me."<sup>iii</sup> This was an offer Blalock did not forget.

Without an official hire in the wake of Young's retirement, J.A. Campbell Colston served as the interim Chief of the Brady. Colston was already an established

Brady staff member and had trained under Young, making him a fitting leader while the search for Young's successor continued.<sup>(2)</sup> Although the Brady's future may have seemed uncertain, Huggins' future was less so: without a forthcoming offer from Hopkins, other institutions attempted to lure him away from Chicago. By Fall 1945, Huggins had been invited to join the faculty at the University of Pennsylvania, which reignited Blalock's initial desire to attract Huggins to Hopkins. Blalock took matters into his own hands, writing in September 1945 to an unnamed correspondent at Hopkins to recommend the appointment of Charles Huggins as a Hopkins "Professor of Urology, preferably on a full-time basis."<sup>(9)</sup> In that letter, Blalock emphasized Huggins' capabilities as a "a good teacher, an excellent urologist, and an able investigator."

After Blalock contacted Huggins in late November 1945 to gauge his interest in coming to the Brady, Huggins expressed reservations. By letter dated December 14, 1945, Huggins requested Blalock's assurance that "there would be a good deal of time for research activities," saying that, "while I do not intend to neglect patients, I do not want to have the Hopkins faculty believe that they were obtaining the services of a



**Figure 3.** Left. Charles Huggins receiving the Nobel Prize in medicine, December 10, 1966, Concert Hall, Concert Hall, Stockholm, Sweden for his work on the relationship between androgens and prostate cancer. (Courtesy, SVT International, Stockholm). (Right) Huggins, at 77, as the invited speaker, Student Research Evening, June 1978, University of Freiburg, Germany (WikiCommons).

high powered clinician who would be expected to devote his time exclusively to clinical duties.”(9) If his needs were met, Huggins said he could ensure that the “Department will have a greater future than it has under the leadership of Doctor Young.”(9) A letter from Huggins to Blalock on December 14, 1945 suggests that Huggins believed himself well-positioned to surpass Young’s legacy through a combination of grit and tenacity: “if hard work will do it, it shall be done.”(9) Huggins was offered the job.

On January 11, 1946, Huggins accepted the appointment to serve as the second Chairman of the Department of Urology.(8) On January 16, 1946, the news broke to the general public via an article in the *Baltimore Sun*. The appointment was so monumental that the *Journal of American Medical Association* even included a one-paragraph mention in its January 26, 1946 issue:

“Dr. Charles B. Huggins, professor of surgery (urology) and head of the department of urology, University of Chicago School of Medicine, has been named director of the Brady Urological Institute and professor and head of the department of urology at Johns Hopkins University School of Medicine, Baltimore. The appointment will be effective July 1. The appointment fills the vacancy that occurred when Dr. Hugh H. Young, founder of the Brady Institute, died on Aug. 23, 1945. Dr. Huggins,

who has been affiliated with the university since 1927, has been professor of urologic surgery at Chicago since 1936. Prior to that he had been associated with the University of Michigan Medical School as instructor in surgery. He graduated at Harvard Medical School, Boston, in 1924.”(8,10)

This appointment was important news not only for the Brady but for the entire medical profession.

### **Huggins' cold arrival in Baltimore**

At the end of February 1946, Huggins visited Baltimore to meet with the Brady faculty. Simply put, Huggins was not well received.(11) Like Blalock, Huggins believed that “one cannot have a mixture of part-time and full-time men with a great difference in their income working harmoniously together.”(9) However, there were members of the faculty, such as Hugh Judge Jewett, who wished to retain their private practices while continuing to serve as part-time faculty members. In a March 1946 memorandum to Winford H. Smith, the director of Johns Hopkins Hospital, Jewett lamented that “a serious situation has presented itself...[because] I am threatened with expulsion if I refuse to come to terms, and an attempt is made to coerce me, through intimidation, to sacrifice my personal liberty.”(12) Questions of who should have faculty status and how faculty should spend their time caused tension between long-time Brady personnel and the newly appointed

Chair.

Accounts of how Huggins reacted to the cool reception of his intended Brady colleagues provide insight into Huggins' state of mind. According to one of Blalock's biographers, when Huggins visited the Brady in February, he and Willard Goodwin, a Brady house officer and distant family friend, took a walk on a particularly cold day. Huggins remarked, "Will, it is a bleak prospect." Goodwin himself later quoted Huggins as having said, "It certainly is a forbidding prospect isn't it?" Regardless of the precise words spoken, Huggins may not have been talking about the weather.(6,11)

### Huggins reconsiders

It is hardly surprising, then, that on March 1, 1946, shortly after his visit to the Brady, Huggins sent a letter to Hopkins President Bowman asking to be released from his commitment. Huggins explained that the Brady was a "large venture...[that] cannot be run successfully by a single man even if he had new assistants." (9) Some scholars have interpreted this letter as evidence that Huggins did not believe he could run the Brady by himself, particularly at the sacrifice of research time.(1,2) However, a letter Huggins sent Blalock on the same day as the resignation letter suggests that Huggins' decision was more complicated than previously thought.

Huggins wrote to Blalock, noting the "complex problem involving whole time men, free lance surgeons, [and] the necessity to run a very large institute together with scientific productivity." (9) Huggins expressed keen awareness of those who opposed his leadership: "I am too weak to cope with the situation and emotionally unprepared to tackle a job which would require me to come out swinging... I operate on a very small scale conceiving myself in a very modest way to be a scholar, surgeon and investigator..." Thus, Huggins acknowledged that his desire to be released from his obligations to the Brady was not merely a matter of thinking the job was too big for one person. Rather, Huggins recognized he could never metamorphosize into the type of physician-leader the Brady wanted.

On March 8, 1946, after Huggins declined the appointment, William F. Braasch, a urologist at the Mayo Clinic, sent him a letter: "In fact, many of your friends have wondered whether you could be happy in the much publicized Baltimore field. Frankly speaking, in order to keep up with the Brady traditions, they need a super-salesman at its head...it is far better for you to readjust your position now than it would have had you found it necessary to do after you had made the change." (8) It is not clear whether Braasch was trying to console Huggins or provide his own opinion on the topic, but Braasch's letter suggests that the Brady had a

specific reputation of producing "super-salesman" capable of pushing forward the department's vision and priorities. This vision – of excellence in three domains of surgery, patient care, and research – may not have been shared by Huggins. In this way, Huggins' decision may not have been guided simply by a question of circumstance but one of character. He was an accomplished researcher and physician but not a Brady physician, after all.

After Huggins officially resigned, he returned to The University of Chicago where another drama awaited him. Huggins' former student, William Wallace Scott, had succeeded him. Now that Huggins wanted to resume his position, few options other than a joint appointment with Scott remained.(1) Scott, however, did not want to share the leadership position with Huggins.(1,13) In a surprising turn of events, the problem resolved when Scott was offered the Brady Chair in June 1946.(13) Contrary to the drama surrounding Huggins' appointment, Scott's transition to the Brady was relatively seamless.(2)

### CONCLUSION

Despite new insights into the history of the Brady presented in this essay, several archival gaps remain. Future research may analyze institutional barriers that precluded Huggins' appointment in 1942. Precisely what role did Blalock play in 1945 in to ensure Huggins was offered the job? Who, other than Jewett, did Huggins target for dismissal if they did not give up their private practice? Who was pushing for a "salesman"-leader model at the Brady? Despite a turbulent period of transition, Huggins' decision – his path not taken – kept the Brady aligned with Hugh Hampton Young's original vision of an institution dedicated to research, surgical excellence, and patient care.

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## ENDNOTES

i. It is possible that Blalock became acquainted with the Chicago model through Huggins, whom he undoubtedly had encountered in professional contexts. It is not known how the two men first became acquainted.

ii. At the Annual American Surgical Association meeting in April 1942, Blalock was on a commentary panel following Huggins' presentation: "if a real contribution is made in cancer in any one field, such as Doctor Huggins has made... it raises our hope of being able to find out something about cancer in other parts of the body." Huggins and Blalock appear to have been in a continued and regular correspondence. For example, in September 1945, Huggins shared a reprint of his recently published article with Blalock, writing "The cancer problem is a good one, full of interest and extremely broad. Things are looking up a little from the standpoint of therapy, at least in the dogs."<sup>(9)</sup> It appears that the two men maintained an amicable relationship even after Huggins was not hired to lead the Brady in 1942.

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