The Hospital for Special Surgery 1972–1989; Philip D. Wilson, Jr., Eighth Surgeon-in-Chief

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Received: 3 February 2010/Accepted: 19 February 2010/Published online: 27 April 2010
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Abstract After nearly a decade as the seventh Surgeon-in-Chief (1963–1972) of The Hospital for Special Surgery (HSS), Robert Lee Patterson, Jr., MD (1907–1994) retired, having repaired adverse relations between HSS and the New York Hospital-Cornell Medical Center. Patterson, who had first joined the staff of The Hospital for the Ruptured and Crippled in 1936 as a Visiting Surgeon, was able to accomplish this very challenging task mainly through his close relationship with Preston Wade, MD (1901–1982), a general surgeon who had served with Patterson as Co-Chief of the combined New York Hospital-HSS Fracture service. The Board of Trustees of the New York Society for the Relief of the Ruptured and Crippled appointed Philip D. Wilson, Jr. MD, as the eighth Surgeon-in-Chief of The Hospital for Special Surgery. He assumed that office on July 1, 1972. Wilson, who had joined the staff as an Orthopaedic Surgeon to the Out-Patient Department in 1951, had trained as an orthopaedic resident at HSS from 1948 to 1950 and in 1951, finished his residency at the University of California Hospital Medical Center, San Francisco. During his 17 years as Surgeon-in-Chief, he led the hospital into the advanced field of implant research and development and building a world-class center for patient care. Additionally, many other orthopaedic services such as Sports Medicine, Scoliosis and

Metabolic Bone Diseases became the leaders in their fields. Supporting Departments of Rheumatology, Anesthesia and others were likewise recognized foremost in the country.

Keywords Robert Lee Patterson, Jr. · Preston Wade · Philip D. Wilson, Jr. · Harlan Amstutz · Philip D. Wilson · John Marshall · Russell F. Warren · David B. Levine · David Clayson · Charles L. Christian · Robert C. Mellors · Chitranjan S. Ranawat · John Insall · Allan E. Inglis · G. Dean Mac Ewen · Joseph M. Lane · Stephen W. Burke · Charles N. Cornell · Thomas P. Sculco · Eduardo Salvati

Introduction

After nearly a decade as the seventh Surgeon-in-Chief (1963–1972) of The Hospital for Special Surgery (HSS), Robert Lee Patterson, Jr., MD (1907–1994) retired, having repaired adverse relations between HSS and the New York Hospital-Cornell Medical Center. Patterson, who had first joined the staff of The Hospital for the Ruptured and Crippled in 1936 as a Visiting Surgeon, was able to accomplish this very challenging task mainly through his close relationship with Preston Wade, MD (1901–1982), a general surgeon who had served with Patterson as Co-Chief of the combined New York Hospital-HSS Fracture Service. One of Dr. Patterson's other major accomplishments was establishing a Biomechanics Laboratory in 1966. He appointed Harlan Amstutz, MD its first Director [1].

The Board of Managers of the New York Society for the Relief of the Ruptured and Crippled appointed Philip D. Wilson, Jr. MD the eighth Surgeon-in-Chief of The Hospital for Special Surgery. He assumed that office on July 1, 1972.

Wilson, Jr., who had joined the HSS staff as an Orthopaedic Surgeon to the Out-Patient Department in 1951, had trained as an orthopaedic resident at HSS from 1948 to 1950 and in 1951, finished his residency at the University of California Hospital Medical Center, San Francisco.

The author certifies that he or she has no commercial associations (e.g., consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

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Fig. 1. Dr. John Hinchey (*left*) with Dr. Philip D. Wilson, Jr. in 1971 at the 39th annual meeting of the American Academy of Orthopaedic Surgeons in San Francisco when Dr. Wilson, Jr. was elected AAOS president-elect. Dr. Wilson, Jr. was first informed of his election when he had already returned early to New York, necessitating his immediate return to San Francisco to accept this honor (from Hospital for Special Surgery Archives and Cristof Studio)

In 1972, The Hospital for Special Surgery was 9 years into its second century, since being founded in 1863 as The Hospital for the Ruptured and Crippled by James Knight, MD, its first Surgeon-in-Chief. Originally located on Second Avenue and Sixth Street in New York City, it moved to a new building on the corner of Forty-Second Street and Lexington Avenue in 1870, where it remained until 1912 [2]. Its name was changed in 1940 to The Hospital for Special Surgery [3].

It then relocated on Forty-Second Street between First and Second Avenues until 1955, when it finally moved to 535 East 70th Street, its present location, and became affiliated with the New York Hospital-Cornell Medical Center [4–6].

In 1971, at the 39th Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS) in San Francisco, Philip D. Wilson, Jr. was elected its president-elect (Fig. 1). The following year, he not only took office as AAOS President but also assumed the position as Surgeon-in-Chief of HSS. Recalling the past, his father, Philip D. Wilson, became the third AAOS President in 1934, and at the same time was appointed the fifth Surgeon-in-Chief of the Hospital for Special Surgery.

Wilson, Jr., recognizing the changing times of orthopaedics at the hospital from a rehabilitating home for children with musculoskeletal conditions during its founding years in the mid nineteenth century, to treatment of postpolio deform-

Fig. 2. Professor John Charnley and Dr. Wilson, Jr. (ca 1972) (from Hospital for Special Surgery Archives)

ities in the 1940s and 1950s, to managing patients with crippling arthritis, introduced a new direction for the clinical services. General orthopaedic Adult and Children Services were reorganized into specialty services by condition and anatomy. Previously established specialty clinics in scoliosis, clubfeet, hand, cerebral palsy and amputee were joined by new clinics and services as hip, back, foot, knee, metabolic bone disease, osteogenesis imperfecta, Familial Dysautonomia and others. First called supraspecialty services, they soon became known just as specialty services and clinics and were organized for both outpatient and inpatient treatment programs. Teaching and research were likewise compartmentalized according to specialty services.

Philip Duncan Wilson, Jr. was born on February 14, 1920 in Boston, Massachusetts to Germaine Porel, the daughter of a famous French actress, and Philip D. Wilson, MD, a young, well-known orthopaedic surgeon at Massachusetts General

Fig. 3. Dr. John Marshall, as seen in 1971 when he became the first Chief of Sports Medicine at HSS (from Hospital for Special Surgery Archives)

Table 1 Department of Orthopaedics 1973

THE HOSPITAL FOR SPECIAL SURGERY MARGARET M. CASPARY CLINIC	
July 1, 1973	
<u>PROFESSIONAL STAFF</u>	
SURGEON-IN-CHIEF.....	Philip D. Wilson, Jr., M.D.
PHYSICIAN-IN-CHIEF.....	Charles L. Christian, M.D.
<u>DEPARTMENT OF ORTHOPAEDIC SURGERY</u>	
DIRECTOR OF ORTHOPAEDIC SURGERY.....	Philip D. Wilson, Jr., M.D.
ASSOCIATE DIRECTOR OF ORTHOPAEDIC SURGERY.....	David B. Levine, M.D.
<u>Attending Orthopaedic Surgeons</u>	
William D. Arnold, M.D.	Bernard Jacobs, M.D.
Rolla D. Campbell, M.D.	Peter J. Marchisello, M.D.
John H. Doherty, M.D.	James A. Nicholas, M.D.
Alexander Hersch, M.D.	Lee Ramsay Straub, M.D.
Allan E. Inglis, M.D.	
<u>Associate Attending Orthopaedic Surgeons</u>	
Sidney Eichenholtz, M.D.	Ralph C. Marcove, M.D.
John N. Insall, M.D.	Victor Mayer, M.D.
David B. Levine, M.D.	Leon Root, M.D.
<u>Assistant Attending Orthopaedic Surgeons</u>	
Samuel Avnet, M.D.	John L. Marshall, M.D.
Howard Balensweig, M.D.	Chitranjan S. Ranawat, M.D.
Walther H. Böhne, M.D.	Eduardo A. Salvati, M.D.
John P. Lyden, M.D.	Konstantin P. Velis, M.D.
<u>Orthopaedic Surgeons to Out-Patient Department</u>	
Michael Browne, M.D.	David G. Mendes, M.D.
William J. Bruton, M.D.	Thomas D. Rizzo, M.D.
Gary A. Gallo, M.D.	Irwin A. S. Spira, M.D.
Robert A. Goldstone, M.D.	N. D. Krishne Urs, M.D.
Joseph V. Hajek, M.D.	William J. Walsh, Jr., M.D.
<u>Fellows in Orthopaedic Surgery</u>	
Paolo Aglietti, M.D.	Jeanne Familla, M.D.
Tyrone D. Artz, M.D.	Jon Wang, M.D.
James R. Cole, M.D.	James B. Wessinger, M.D.
Joseph R. Macys, M.D.	Dennis W. Wise, M.D.
Saghir U. Mir, M.D.	

Hospital. Dr. Wilson, Jr. had an older brother, Paul Wilson and a younger sister, Marianne Wilson Finkel [7].

Educated at Harvard College, he received his MD degree in 1944 from the College of Physicians and Surgeons of Columbia University. He was a general surgical

intern and resident at Massachusetts General Hospital from 1944 to 1946 and then served in the military at Brooke General Hospital from 1946 to 1948, being discharged as a Captain. After becoming an orthopaedic resident in 1948 at the Hospital for Special Surgery (1948–1950), he

Table 2 Number of orthopaedic residents and fellows graduating 1960–1990

Years	Residents	Fellows
1960–1970	39	71
1970–1980	67	59
1980–1990	79	122

took an additional year of orthopaedic training under Dr. Leroy Abbot and pursued biomechanics studies with Dr. Verne Inman at the University of California Hospital Medical Center in San Francisco and in Berkley (1950–1951) [8].

After joining the HSS staff as an Orthopaedic Surgeon to the Out-Patient Department (1951–1954), he quickly rose through the ranks to Attending Orthopaedic Surgeon in 1963. During these years, he accumulated a wide experience and knowledge in many fields in orthopaedics, including the spine and scoliosis, foot, knee, fractures, besides his focus on the hip, both adults and children [9–18]. He was also very interested in orthopaedic education, both undergraduate and graduate levels, orthopaedic pathology, bioengineering applied to orthopaedics and medical history [19–21]. Dr. Wilson, Jr. was often consulted by his colleagues for his opinion in establishing a diagnosis of various difficult orthopaedic problems and recommending appropriate treatment. He was considered one of the best surgeons in the operating room, and residents and fellows were always anxious to scrub with him.

In 1966, Dr. Wilson, Jr. visited John Charnley at Wrightington Hospital, Lancashire, UK to learn about a new hip operation, the total hip replacement. In 1967, Wilson, Jr. introduced this new surgical procedure into HSS (Fig. 2). The procedure was quickly adapted by others on the orthopaedic surgical staff and performed under general endotracheal anesthesia in one of three operating rooms at the hospital. A 4th operating room was inadequate to accommodate hip, knee and spine procedures.

In 1972, the length of stay for total hip replacements was 19 days and by 1989 it was 9 days. The length of stay of all 2,400 open operations in 1968 was 19 days and by 1973, it still remained at 17 days as the number of open operations increased to 2900¹ [22]. A five-bed Recovery Room was supervised by the Director of the Department of Anesthesia Dr. John L. Fox, with his staff of five Attending Anesthesiologists.

As reported in a previous article, in 1971, an Orthopaedic Sports Medicine Clinic was founded at HSS by John Marshall, DVM, MD (1936–1980) [1]. At that time, Sports Medicine, as the specialty we know today, was in its infancy. The American Orthopaedic Society for Sports Medicine (AOSSM) had its organizational meeting in 1972 in Washington, DC while the first issue of the American Journal of Sports Medicine was published that same year [23]. The HSS Sports Medicine program was one of the first in the country that focused on treatment and prevention of sports' joint injuries, including

clinical studies and laboratory research in the sports field [24]. John Marshall, originally trained in veterinary medicine, eventually obtained his MD degree and as an HSS orthopaedic resident in 1967, worked in the HSS Comparative Orthopaedics Laboratory, directed by Dr. Sten-Erik Olson, a Swedish veterinarian, who resigned in 1968 to return to Sweden (Fig. 3). Marshall went on to serve as Team Physician for the New York Giants football team, orthopaedic consultant to the New Jersey Nets basketball team, the U.S. Olympic Ski Team and the New York City Public Schools Athletic League.

Gaining such expertise, with his enthusiasm spilling over onto his colleagues and students, Marshall quickly became a world-renown figure in orthopaedics and sports medicine. But his career came to a sudden and unexpected end when he died in a light-airplane crash in a snowstorm on February 19, 1980 at the age of 44. He was enroute from a meeting of the American Academy of Orthopaedic Surgeons in Atlanta Georgia to consult the U.S. Ski Team at the Winter Olympics in Lake Placid, New York. The year before, he had persuaded Steven Arnocsky, DVM to join the HSS staff and direct the Comparative Orthopaedics Laboratory. Arnocsky continued in that role after Dr. Marshall died.

To replace Dr. Marshall, Dr. Russell F. Warren was appointed Chief of Sports Medicine [25]. Warren had obtained his medical degree from the State University of New York at Syracuse and finished his orthopaedic residency at HSS in 1973. After a brief trial of practice,

Fig. 4. David Clayson, PhD., as the Clinical Psychologist on the HSS staff, not only sat on the Orthopaedic Resident Selection Committee but held monthly meetings with the 1st year orthopaedic residents as their advisor (from Hospital for Special Surgery Archives)

¹ In 1989, the last year that Dr. Wilson, Jr. was Surgeon-in-Chief, the average length of hospital stay had been reduced to less than 9 days with ambulatory surgery increasing to 1,129 procedures from 74 in 1980. Four operating rooms in 1972 doubled to 8 operating rooms by 1989.

Table 3 Department of Medicine

<u>DEPARTMENT OF MEDICINE</u>	
DIRECTOR OF RHEUMATIC DISEASES.....Charles L. Christian, M.D.	
<u>Attending Epidemiologist</u>	
Leon J. Kutner, M.D., Ph.D.	
<u>Attending Physicians</u>	
William H. Kammerer, M.D.	Irwin Nydick, M.D. (Cardiology)
<u>Associate Attending Physicians</u>	
Carl A. Berntsen, Jr., M.D.	William C. Robbins, M.D.
Abraham S. Jacobson, M.D.	Bernard Rogoff, M.D.
Lawrence J. Kagen, M.D.	Emmanuel Rudd, M.D.
<u>Assistant Attending Physicians</u>	
Harry Bienenstock, M.D.	Michael D. Lockshin, M.D.
Edgar J. Desser, M.D.	Francis Perrone, M.D. (Cardiology)
Martin Gardy, M.D.	Paul E. Phillips, M.D.
Jose Luis Granda, M.D., Ph.D.	Marcos Rivelis, M.D.
Herbert Koteen, M.D.	Robert Thoburn, M.D.
Robert W. Lightfoot, Jr., M.D.	
<u>Physicians to Out-Patient Department</u>	
Richard L. Daneshower, M.D.	Bruce Nitsberg, M.D.
Leroy H. Hunninghake, M.D.	Milton A. Wald, M.D.
Bento Mascarenhas, M.D.	
<u>Assistant Physician to Out-Patient Department</u>	
Robert Winchester, M.D.	
<u>Fellows in Rheumatic Disease</u>	
Sidney R. Block, M.D.	J. Steven McDougal, M.D.
Teresita Go, M.D.	Ronald Saykaly, M.D.
William Gough, M.D.	John Sergeant, M.D.

and then taking a Shoulder Fellowship with Dr. Charles S. Neer, II at the New York Orthopaedic Hospital, Dr. Warren joined the HSS Attending Staff in 1977. Eventually, he would serve as Surgeon-in-Chief at HSS (1993–2003).

In 1973, the orthopaedic staff was comprised of 24 orthopaedic surgeons with admitting privileges and others with only outpatient privileges (Table 1). These Attendings supervised the residents and fellows in the specialty clinics and general orthopaedic and children's clinics. A senior Attending was Chief of the Clinics on a daily basis during the week days. A clinic patient who needed surgery was approved by an Attending, admitted at least the day before surgery and was operated by a member of the house staff, often a different resident/fellow but always supervised by an Attending Orthopaedic

Surgeon. When the clinics and services became reorganized into specialties, there was much less confusion and better care and follow-up. House staff, assigned to private surgical cases, experienced a different kind of teaching. Rotations through affiliate hospitals such as the Bronx Veterans Administration Hospital, New York Hospital and Memorial Sloan-Kettering Cancer Center offered a third type of surgical experience.

Education of the house staff was always very important, both in and out of the operating rooms. There were daily resident conferences from 7:30 to 8:30 am during the week, with a Surgeon-in-Chief's conference on Fridays. A list of journal articles to read was left in the medical library the night before, and residents prepared themselves to be quizzed the next morning by Attendings in conferences.

Fig. 5. In 1977, Dr. Christian, besides being HSS Physician-in-Chief, also had held an interim role as Acting Physician-in-Chief at The New York Hospital and Acting Chairman of the Department of Medicine at Cornell University Medical College (from Hospital for Special Surgery Archives)

Computer and internet technology had not arrived. House-staff education depended greatly on a few classic texts, the journals and teachings by postgraduate fellows and senior residents besides Attendings.

Prior to 1965, four residents were taken for 3 1/2 years in the HSS orthopaedic program, to begin after having had 1 year of internship and 1 year of general surgery. A new resident started quarterly. The number of residents was increased from four to six per year in 1965, and a new rotation system was introduced where all six residents began July 1. In 1972, with the new supraspecialty clinics, the residents rotated through these specialty clinics every 2 months. The next year at the 40th annual meeting of the American Academy of Orthopaedic Surgeons, Dr. Wilson, Jr. gave his presidential address addressing the pursuit of excellence, education and supraspecialization [26]. In 1974, the size of the orthopaedic program increased to eight residents per year for a total of 32 positions. The length of the orthopaedic residency was extended to 4 years, while 2 years of prior surgical training was reduced to 1 year [25]. Clinical Orthopaedic Fellows would rotate through four different services for a total of 1 year. There were some Orthopaedic Fellows assigned to only one service for the year such as hand, scoliosis, pediatrics, cerebral palsy, etc. When the supraspecialty clinics and services were formed, most Clinical Orthopaedic Fellows were assigned to one service. In 1972, there were also three research orthopaedic fellows, six Clinical and Research Rheumatic Disease Fellows, and one Research Fellow in Biochemistry. There were no fellows in Anesthesia, Radiology or on other supporting services (Table 2).

That year, a unique orthopaedic resident interviewing system was introduced. Interviews were held all day Friday and Saturday morning in January. Each candidate was

assigned a 10-min interview usually conducted by two interviewers who were either Orthopaedic Attendings, members of the Research Staff, orthopaedic residents or other staff. There were three 2-hour sessions on Fridays and two similar sessions on Saturday mornings to which a pre-chosen group of about 60 to 80 candidates was assigned. The interviewees had been selected by members of the Orthopaedic Resident Selection Committee from some 400 applications. Interviewers scored each candidate, met after the sessions for further discussion and eventually ranked each candidate. Such rankings were personally tabulated by Dr. Wilson, Jr. who was in charge of the entire orthopaedic residency program. At first, he would chalk scores on a blackboard but later with introduction of the computer, Tim Wright, PhD., who joined the staff in 1977 as an Assistant Scientist in the Research Division, was able to computerize all the data. Results from Friday morning interviews were tabulated by lunchtime.

One of the interviewers was David Clayson, PhD (1934–2001), Associate Clinical Psychologist on staff at HSS on the Psychiatry Service. Clayson, who served as Head of Psychology in Psychiatry at New York Hospital-Cornell Medical Center from 1968 to 1993, was brought on the HSS staff in 1967 by Dr. David B. Levine, Chief of the Scoliosis Service. Levine sought his expertise in managing adolescent and adult scoliosis patients who often were problematic, particularly with their body image [27]. Clayson was initially introduced into the field of orthopaedics when he subjected some senior HSS orthopaedic staff to psychological

Fig. 6. Dr. Robert C. Mellors served as Director of the Department of Laboratories and of the Department of Research from 1969 until he retired in 1984 (from Hospital for Special Surgery Archives)

Table 4 Research Department 1973

RESEARCH DEPARTMENT

July 1, 1973

ADMINISTRATIVE STAFF

Robert C. Mellors, M.D., Ph.D.....Director of Research
Charles L. Christian, M.D.....Associate Director of Research
Aaron S. Posner, Ph.D.....Associate Director of Research
Walter J. Schulz, B.A.....Administrator

PROFESSIONAL STAFF

Senior Scientists

Charles L. Christian, M.D.....	Professor of Medicine
Allan E. Inglis, M.D.....	Clinical Professor of Surgery (Orthopaedics) and of Anatomy
Leonhard Korngold, Ph.D.....	Associate Professor of Micro- biology
Klaus Mayer, M.D.....	Clinical Associate Professor of Medicine
Robert C. Mellors, M.D., Ph.D.....	Professor of Pathology
Aaron S. Posner, Ph.D.....	Professor of Biochemistry
Robert F. Watson, M.D.....	Clinical Professor of Medicine

Associate Scientists

Lawrence M. Blau, Ph.D.....Assistant Professor of Radiology
(Physics)
Walther H. Bohne, M.D.....Clinical Assistant Professor of Surgery
(Orthopaedics)
Peter G. Bullough, M.D.....Associate Professor of Pathology
Jose Luis Granda, M.D., Ph.D.....Assistant Professor of Medicine
Lawrence J. Kagen, M.D.....Associate Professor of Medicine
Leon J. Kutner, M.D., Ph.D.....Assistant Professor of Microbiology
in Surgery (Orthopaedics)
Robert W. Lightfoot, Jr., M.D.....Assistant Professor of Medicine
Michael Lockshin, M.D.....Assistant Professor of Medicine
John L. Marshall, M.D.....Clinical Assistant Professor of Surgery
(Orthopaedics) and of Anatomy
Paul E. Phillips, M.D.....Assistant Professor of Medicine
Peter S. Walker, Ph.D.....Assistant Professor of Bioengineering
in Surgery (Orthopaedics)

Assistant Scientists

Foster Betts, Ph.D.....	Research Associate in Biochemistry
Norman Blumenthal, Ph.D.....	Research Associate in Biochemistry
Jane W. Mellors, Ph.D.....	Assistant Professor of Biochemistry in Surgery (Orthopaedics)
Takashi Yoshiki, M.D.....	Fellow in Pathology

Research Associate

Paul Tannenbaum, D.D.S.....Research Associate in Biochemistry

Table 4 (continued)

<u>Visiting Scientist</u>	
Chen-Ya Huang, Ph.D.	
<u>Research Fellows</u>	
Enrique Blazquez, M.D.	Orthopaedics
Sidney R. Block, M.D.	Rheumatic Diseases
Adele Boskey, Ph.D.	Biochemistry
Teresita Go, M.D.	Rheumatic Diseases
William Gough, M.D.	Rheumatic Diseases
J. Steven McDougal, M.D.	Rheumatic Diseases
Harry Robinson, Jr., M.D.	Orthopaedics
Roy Rubin, M.D.	Orthopaedics
Ronald Saykaly, M.D.	Rheumatic Diseases
John Sargent, M.D.	Rheumatic Diseases
<u>Visiting Research Fellow</u>	
Hiroshi Saito, M.D.	Immunopathology
<u>Special Consultants</u>	
Fakhry G. Girgis, M.D., Ph.D.	Comparative Orthopaedics
Sten-Erik Olsson, D.V.M., M.D., Ph.D.	Comparative Orthopaedics

tests, apparently never done before. After all the orthopaedists returned their questionnaires, Dr. Clayson reviewed the completed tests and reported the results anonymously in a meeting with those taking the tests (Fig. 4).

Clayson's role in the resident interview program was to see every candidate alone for 10 min. In later years, he could interview a candidate in 3 min and tell if there was some type of psychological problem.

Dr. Clayson also met with first year residents monthly for counseling, had yearly dinners with residents and spouses and scheduled a weekend retreat with residents and their families at the Caspary Estate in the Catskill Mountains of New York, a property left to the HSS house staff for vacation time by Alfred H. Caspary [1].

Dr. Charles L. Christian was now 2 years into his position as Director of Rheumatic Diseases and Physician-in-Chief [1]. In his 1972 annual report, he stated that "the mission of the department is to gain new information regarding the cause of common rheumatic diseases such as rheumatoid arthritis, systemic lupus erythematosus, arteritis syndromes, polymyositis, etc" [22] (Table 3). In addition to his role in clinical medicine, he also held the position of Associate Director of the Department of Research (Fig. 5). In 1978, the hospital received its first Multipurpose Arthritis Center grant from the National Institutes of Health and 10 years later in 1988, received its second grant.

Robert C. Mellors, MD, PhD was appointed Director of Research in 1969 and Pathologist-in-Chief of the Department of the Laboratories (Fig. 6). There were over 40 scientists listed in the Research Department in 1973 with

offices and laboratories in the Caspary Research Building, across the street from the hospital on 71st Street (Table 4). This was the first free-standing orthopaedic research unit in our country. The building had opened with a formal ceremony on November 17, 1960. It was the product of a vision of Philip D. Wilson, who realized how important the interaction of research with clinical orthopaedics was.

Dr. Wilson, Jr. also had this same vision—the significance of close connections between research and clinical staffs. He recruited young engineers particularly to expand and formalize design and development of joint replacement implants. HSS was already at the frontier in developing a total knee implant system, with a team of surgeons and engineers led by Chitranjan S. Ranawat, MD (Fig. 7), John Insall, MD (1930–2000) (Fig. 8), Peter Walker, PhD and Allan E. Inglis, MD, producing their first duocondylar and unicondylar prostheses in 1971 (1)². A more stable prosthesis led to the development of the total condylar knee by Walker, Ranawat and Insall in 1974. The total condylar knee became the first successful and widely utilized total knee replacement in the world [28, 29]. Continued development of the total knee implant at the hospital led to the introduction of the Insall–Burststein total condylar III in 1976 and the Insall–Burststein posterior stabilized knee prosthesis in 1978.

In 1975, Peter Walker, PhD. resigned as Director of the Department of Applied Biomechanics and Chief of the Biomechanics Laboratory and was replaced in May, 1976

² HSS surgical records indicated that 103 knee replacements were performed in 1972, increasing to 836 knee implants in 1989.

Fig. 7. Dr. Chitranjan S. Ranawat, who trained as a fellow at the Hospital for Special Surgery from 1966 to 1969, was appointed to the HSS Attending Staff in 1969 (He practiced at HSS until 1994, when he moved his practice to Lenox Hill Hospital where he was appointed The James A. Nicholas Chairman of the Department of Orthopaedic Surgery and the Director of the Ranawat Orthopaedic Center at Lenox Hill Hospital). Besides his expertise in research and clinical orthopaedics, he has been a major educator in training orthopaedic residents and fellows (from Hospital for Special Surgery Archives)

by Albert H. Burstein, PhD. from Case Western Reserve University in Cleveland, Ohio (Fig. 9).

A search committee had been organized by Dr. Wilson Jr. and had consulted with the Sibley School of Mechanical and Aerospace Engineering at the main Cornell University campus in Ithaca, New York. The engineering school suggested two representatives on the committee, Donald L. Bartel, PhD and Dr. Burstein. After the committee was formed, Dr. Burstein wished to be considered for the position.

A formal program resulted between the hospital and the engineering school on the Ithaca campus to promote collaborative research, teaching and patient care projects. This program served as a model for linkage programs between engineering faculty and students in Ithaca and HSS clinical and research staff.

Beginning in 1976, custom implants, from computer-assisted designs, were fabricated for difficult cases in the hospital's biomechanics department in collaboration with device manufacturers. First produced in the Alfred Caspary Research Building on 71st Street, the facilities moved in 1982 to the newly opened Dana Center on East 73rd Street³.

³ The Dana Center moved back to the Caspary Research Building in January 2004.

Fig. 8. Dr. John Insall, who was a Fellow at HSS in 1961 and then returned to England, rejoined the HSS Staff as an Attending Orthopaedic Surgeon in 1965 and was appointed Chief of the Knee Service in 1969. Insall was a founding member of the Knee Society in 1983 and became its President in 1987 (from Hospital for Special Surgery Archives)

In the Fall of 1976, G. Dean Mac Ewen, MD, Medical Director of the Alfred I. duPont Institute (1969–1986), served as the Surgeon-in-Chief pro tempore, a program started in 1935 by Dr. Wilson. As an Honorary Alumnus, Dr. Mac Ewen has continued to return to HSS functions over the years, attending many HSS annual meetings (Fig. 10).

Also in 1976, Dr. Joseph M. Lane was recruited from the University of Pennsylvania Hospital in Philadelphia to supervise a metabolic bone disease service. The next year, Dr. Lane was appointed Chief of the Bone Tumor Service at Memorial Sloan-Kettering Cancer Center (Fig. 11) [25]. Lane worked closely with Herbert Kramer, Director of the HSS Orthotics and Prosthetics Department, in overseeing the fabrication of prostheses for amputees. It should be noted that this department, a legend dating back to Dr. James Knight's original hospital in 1863, was first established as a brace shop when the hospital was on 42nd Street between First and Second Avenues (1912–1955) [30]. In 1985, Lane started an Osteoporosis Prevention Center with the assistance of an HSS nurse, Theresa Galsworthy, RN, who was in charge of daily operations of the program.

Fig. 9. Albert Burstein, PhD., the 3rd Director of the Department of Biomechanics, is seen in his laboratory in 1976 operating a cartilage testing machine, designed and constructed by HSS Biomechanics Staff members Peter Torzilli, PhD and Jim Carr (from Hospital for Special Surgery Archives)

In 1977, the HSS Board of Managers, chaired by Henry U. Harris (1926–2008), made a major commitment for expansion and relocation of the surgical suites, modernization and addition of new physician office spaces and private ambulatory patient accommodations (Fig. 12). A new hospital administrator, Donald S. Broas, was appointed HSS Vice President and Executive Director in 1977 when T. Gordon Young retired after 24 years of serving in that role (Fig. 13). The retirement of

Fig. 10. Dr. Wilson giving Dr. MacEwen an HSS Alumni tie in 1976 when Dr. MacEwen was the *Surgeon-in Chief pro tempore* at HSS (from Hospital for Special Surgery Archives)

Fig. 11. Dr. Joseph Lane, with dual appointments at HSS and Memorial Sloan-Kettering Hospital where he eventually was Chief of the Bone Tumor Service, in his laboratory ca 1976 (from Hospital for Special Surgery Archives)

D. Dean Smlith, MA, RN, Director of Nursing from 1965 to 1977 was also that same year. She was followed by Barbara J. Kelly, MA, RN, as Vice President for Nursing, who continued in that role until 1989 when she retired.

The new proposed project was to add three floors over the front driveway from 70th Street to near 71st Street. The 3rd floor would house a cafeteria, examining areas and physician offices. The 4th floor was to add a modern operating suite of six operating rooms, a 15-bed Recovery Room and facilities for the radiology department including one room for computed tomography scans. A holding area of six beds was located on the 5th floor (Fig. 14). Funding came from a major campaign named The New Horizon Fund, chaired by HSS Board member, Charles H. Theriot of Kidder, Peabody and Company. The projected goal of \$8 million was reached by December 1980 and the goal was then extended to \$12 million to cover actual increased costs.

Interest in sports medicine grew significantly under Dr. Warren, and the Sports Medicine Service became very popular with patients and staff. Because of the demand of

Fig. 12. Henry U. Harris, an investment banker⁴ who had been on the HSS Board of Managers since 1961, was elected Chairman of the Board in 1972 at the same time Philip D. Wilson, Jr. became Surgeon-in-Chief. He led the major changes of expansion for nearly two decades until he resigned as Chairman in 1989. He was a very effective leader, a good friend of the professional staff and was a close and respected colleague of Dr. Wilson, Jr. (from Hospital for Special Surgery Archives)

treating an increasing number of sports-related orthopaedic injuries, an Orthopaedic Sports Medicine Research and Performance Center opened in 1983, with trainers and therapists added to the staff.

Further renovation and expansion of space on the third floor to provide physician facilities for outpatient services proceeded in 1986 and construction of the Belaire building on 71st Street was begun. The first 13 floors were for HSS use and the remaining floors, entered on East 72nd Street, were for private residential facilities. A hospital café was located on the ground level, and the cafeteria in the main building was closed. The newly created Sports Center moved into the area opposite the café in 1988 when the Belaire Building was completed.

⁴ Henry U. Harris, grandson of John F. Harris, the founder of Harris, Upham & Co. and the grandson of Edwin S. Webster, the founder of Stone & Webster, Inc. was President and CEO of Harris, Upham & Co. As a 2nd Lieutenant in the Army, while just after marching in front of General Douglas MacArthur in the Philippines on July 4, 1946, the day the Philippines became independent, Harris contracted polio. He was medically transported to Hot Springs, Arkansas and then later to Warm Springs, GA to convalesce.

Fig. 13. Donald S. Broas, as HSS Executive Director, orchestrated the large hospital expansion program which gained city, state and federal approval in 1978 and completed in 1980 (from Hospital for Special Surgery Archives)

In 1985, Dr. Mellors retired and Aaron S. Posner, PhD., Associate Director of Research, was appointed as Director of Research. Dr. Peter Bullough, on staff since 1968 as Chief Orthopaedic Pathologist and Attending Pathologist since 1980, was appointed Director of Laboratory Medicine [1]. Dr. Posner retired in 1987 to be replaced by Dr. Wilson, Jr. (Table 5).

One of the many specialty clinics and services was the Back Service whose chief was Bernard Jacobs, MD (1924–1992). He specialized in low back pain and managed very difficult patients from around the world who sought his expert orthopaedic advice (Fig. 15).

Table 5 Directors of research

1955–1993

1955—Philip D. Wilson, M.D. First Director of Research
 1962—Goren C.H. Bauer, M.D.
 1969—Robert C. Mellors, M.D., PhD
 1985—Aaron S. Posner, Ph.D.
 1987—Philip D. Wilson, Jr., M.D.
 1990—Joseph M. Lane, M.D.
 1993—Adele L. Boskey, M.D.

Fig. 14. Structural steel (1979) erected over the driveway for the new 3rd, 4th and 5th floors. Construction was completed by February 1980. Note the original Margaret Caspary Clinic entrance at the 70th Street level (from Hospital for Special Surgery Archives)

With the retirement of Dr. John Fox, Chief of Anesthesia in 1986, Nigel E. Sharrock, MD was appointed Director of the Department of Anesthesia on July 1 (Fig. 16). Dr. Sharrock, a native of New Zealand where he received his medical degree, was an Associate Attending Anesthesiologist at Lenox Hill Hospital. Previously, he had been on staff at the Peter Brent Brigham Hospital in Boston prior to coming to Lenox Hill Hospital. He rapidly brought on new staff physicians to the department, introducing regional anesthesia techniques, implementing a pain service and exploring methods of hypotensive anesthesia and sophisticated monitoring systems.

Two other new orthopaedic staff appointments in 1986 were Stephen W. Burke, MD and Charles N. Cornell, MD. Dr. Burke, a 1971 graduate of Cornell Medical College, was an Associate Professor of Pediatric Orthopaedics at Louisiana State University Medical School and had been on staff of Tulane Medical Center, Children's Hospital and Touro Infirmary, all in New Orleans.

Dr. Cornell, an HSS orthopaedic resident from 1982 to 1985, received his medical degree from Cornell University Medical College in 1980. Following his orthopaedic residency, he was the recipient of the Hoar Fellowship in Orthopaedic Trauma, granted by the New York Academy of

Medicine. Dr. Cornell took an additional trauma fellowship at the Harborview Medical Center in Seattle, Washington (Fig. 17).

Dr. David B. Levine, having been the Associate Director of Orthopaedic Surgery (1973–1986) was appointed Director of Orthopaedic Surgery on July 1, 1987, a position previously held by Dr. Wilson, Jr. (Fig. 18).

With the hospital running into progressive operative deficits at the end of the 1980s, Dr. Levine initiated a total hospital Cost Containment Program. He called a number of meetings of interdisciplinary hospital staff to address wide spread waste, awareness of problems, education and communication among all members of the HSS staff. At first, the focus was on operating room performance and specifically addressed the control, use and costs of joint implants. Attention to reimbursement became a significant issue, particularly the knowledge, performance and responsibility of the coders in the Record Room. The bottom line was education of all the staff, particularly of the professional staff [31, 32]. It was a time HSS was forced to layoff hospital staff and one message was: Reduce wastes—help save a job—that job that may be yours.

Dr. Lee Ramsay Straub (1913–1994) retired in 1987 having established a Hand Clinic in 1953 and the Comprehensive Arthritis Service (CAP) in 1967 with Dr. Richard H. Freyberg (1905–1999), Director of Rheumatic Diseases. Following Dr. Straub's retirement, Dr. Allan E. Inglis was appointed Chief of the Hand Service and Dr. Chitranjan Ranawat, Chief of the CAP Service.

Fig. 15. Dr. Bernard Jacobs standing on the 71st Street ramp next to the Caspary Research Building in 1988. Born in London, he graduated from the University College Hospital Medical School in 1948 and became an American citizen in 1950 (from Hospital for Special Surgery Archives)

Fig. 16. Dr. Nigel Sharrock investigated patients undergoing total joint replacement and the cardiopulmonary and vascular status postoperatively. He introduced epidural pain control at HSS and quickly became a leading authority, addressing orthopaedic meetings across the nation (from Hospital for Special Surgery Archives)

In 1989, Dr. Robert H. Freiburger resigned as Director of Radiology and Nuclear Medicine and was followed in that position by Dr. Jeremy Kaye.

In 1988, Dr. Wilson, Jr. announced his intent to retire as Surgeon-in-Chief, and a search committee for his replacement was formed. For more than two decades, Wilson led the development, advancement and investigative research in total hip replacement surgery (THR) at HSS. When he first became Surgeon-in-Chief in 1972, he appointed Dr. Eduardo Salvati, who had just completed a fellowship in hip and knee at the hospital to become Chief of the Hip Service (Fig. 19).

With Dr. Salvati as a co-author, Dr. Wilson published a number of studies on successful results and complications of THR, particularly analyzing postoperative infections and methods of prevention [33–35]. He reported on a long-term follow-up of Charnley total hip replacements and revision hip surgery in the early 1980s [36, 37]. He selectively studied mechanical failures of hip replacements, the histology of bone–cement interface and the role of polymethylmethacrylate in total hip arthroplasty [38–41].

Fig. 17. Dr. Charles Cornell (*left*) who joined the HSS staff in 1986, was assigned part-time to the staff of the combined HSS-New York Hospital Fracture Service. Dr. Stephen Burke became a member of the HSS Orthopaedic Pediatric Staff and the Scoliosis Staff (from Hospital for Special Surgery Archives)

Fig. 18. Dr. David B. Levine (*right*) as the new Director of Orthopaedic Surgery in 1987 was assisted by Dr. Thomas P. Sculco as Associate Director of Orthopaedic Surgery. Dr. Levine graduated as an orthopaedic resident from HSS in the Class of 1964. Dr. Sculco graduated in the HSS Residents' Class of 1972 (from Hospital for Special Surgery Archives)

Fig. 19. Dr. Eduardo Salvati who had received his medical degree in Buenos Aires, was an orthopaedic resident in Florence, Italy and Buenos Aires before becoming a hip and knee fellow at HSS (from Hospital for Special Surgery Archives)

On December 31, 1989, Dr. Philip D. Wilson, Jr. retired from the office of the Surgeon-in-Chief, after more than 17 years in that position.

On January 1, 1990, Dr. Andrew J. Weiland from Baltimore became the ninth Surgeon-in-Chief of the Hospital for Special Surgery.

Conclusion

This is the eleventh and final article of this series on the history of Hospital for Special Surgery (the period from 1863 to 1989), published consecutively in this journal since its first issue in September 2005. I plan to compile this information into a book, to be published at the time of the 150th anniversary of Hospital for Special Surgery in 2013.

References

- Levine DB, The Hospital for Special Surgery 1955–1972; T. Campbell Thompson, Serves as sixth surgeon-in-chief 1955–1963 followed by Robert Lee Patterson, Jr., the seventh surgeon-in-chief 1963–1972. *HSS J.* 2010; 6: 1–13
- Levine DB, Hospital for Special Surgery: Origin and Early History. *HSS J.* 2005; 1: 1–6
- Levine DB, The Hospital for the Ruptured and Crippled renamed The Hospital for Special Surgery 1940; the war years 1941–1945. *HSS J.* 2009; 5: 1–8
- Levine DB, The Hospital for the Ruptured and Crippled: Knight to Gibney, 1870–1887. *HSS J.* 2006; 2: 1–6
- Levine DB, The Hospital for the Ruptured and Crippled Moves East on 42nd Street 1912 to 1925. *HSS J.* 2007; 3: 131–136
- Levine DB, The Hospital for Special Surgery affiliates with Cornell University Medical College and New York Hospital, 1951; Philip D. Wilson retires as surgeon-in-chief, 1955. *HSS J.* 2009; 5: 83–91
- Levine DB, The Hospital for the Ruptured and Crippled: Eugene H. Pool, fourth Surgeon-in-Chief 1933–1935 followed by Philip D. Wilson, fifth Surgeon-in-Chief 1935. *HSS J.* 2008; 4: 97–106
- O'Brasky M, Reflections on and celebrations of Dr. Philip D. Wilson, Jr. *HSS Alumni News* 2009; Fall Edition
- Wilson PD Jr., Paralytic foot deformities. *Pediatr Clin North Am.* 1955; 2: 987–1001
- Wilson PD Jr., Levine DB, Internal Derangements of the Knee Joint. *Comroe's Arthritis and Allied Conditions.* Hollander J ed, Lea & Febiger, Phil. 1972; ch 77; 1411–1421
- Wilson PD Jr., Fracture dislocations of the shoulder girdle. In: Wade PA, ed. *Surgical Treatment of Trauma.* Grune & Stratton; 1960: 405–411
- Wilson PD, Jr., Amstutz HA, Czerniecki A, Salvati EA, Mendes DG, Total hip replacement with fixation by acrylic cement: a preliminary study of 100 consecutive McKee–Farrar prosthetic replacements. *J Bone Jt Surg.* 1972; 54A: 207–236
- Wilson PD, Jr., Ritter MA, Colonna capsular arthroplasty—a long term follow-up of forty hips. *J Bone Jt Surg.* 1968; 50A: 1305–1327
- Wilson PD, Jr., Levine DB, Compensatory pelvic osteotomy for ankylosing spondylitis. *J Bone Jt Surg.* 1969; 51A: 142–148
- Amstutz HC, Wilson PD, Jr., Dysgenesis of the proximal femur (Coxa Vera) and its surgical management. *J Bone Jt Surg.* 1962; 44A: 1–24
- Wilson PD, Jr., Dangelmajer RC, The problems of antero-axial dislocation in rheumatoid arthritis. *J Bone Jt Surg.* 1963; 49A: 1780
- Wilson PD, Jr., Levine DB, Low back pain and sciatica. *Comroe's Arthritis and Allied Conditions.* Hollander J ed, Lea & Febiger, Phil. 1972; ch 82:1511–1560
- Wilson PD, Jr., Low back pain—a problem for industry. *Arch Environ Health.* 1962; 5:505–510
- Wilson PD, Jr., Nationally organized courses and symposia in orthopaedic education. *Clin Orthop.* 1971; 75: 129–134
- Wilson PD, Jr., A clinical study of the biomechanical behavior of massive bone transplants used to reconstruct large bone defects. *Clin Orthop.* 1972; 87: 81–109
- Wilson PD, Jr., James Knight (1810–1887) of the Hospital for the Ruptured and Crippled. *Clin Orthop.* 1958; 11: 1–8
- Wilson PD, Jr., The Hospital for Special Surgery Annual Report, New York; 1973
- Jackson DW, The history of sports medicine. Part 2. *Am J Sports Med.* 1984; 12: 255–257
- Patterson RL, The Hospital for Special Surgery Annual Report, New York; 1971
- Wilson PD, Jr., Levine DB, Hospital for Special Surgery; a brief review of its development and current position. *Clin Orthop.* 2000; 374: 90–106
- Wilson PD, Jr., One for all; all for one. *J Bone Jt Surg.* 1973; 55A: 859–865
- Clayson D, Levine DB. Adolescent scoliosis patients' personality patterns and effects of corrective surgery. *Clin Orthop* 1976; 116:99–102
- Ranawat CS, History of total knee replacement. *J South Orthop Assoc.* 2002; 11(4): 218–226
- RDS. John H. Insall, MD 1930–2000. *J Bone Jt Surg.* 2001; 83A: 635
- Levine DB, The Hospital for the Ruptured and Crippled entering the twentieth century, ca 1900–1912. *HSS J.* 2007; 3: 2–12
- Levine DB, Kille A, Keenam M, Carr J, Wright T, Burstein A, Cost awareness and containment for the 1990s; recycling orthopaedic implants. *Contemporary Orthopaedics.* 1992; 25: 376–381
- Levine DB, Cole BJ, Rodeo SA, Cost awareness and cost containment at The Hospital for Special Surgery. *Clin Orthop.* 1995; 311: 117–124

33. Wilson PD, Jr., Salvati EA, Aglietti P, Kutner LJ, The problem of infection in endoprosthetic surgery of the hip joint. *Clin Orthop.* 1973; 96: 213–221
34. Aglietti P, Salvati EA, Wilson PD, Jr., Kutner L, Effect of a surgical horizontal unidirectional filtered air flow unit on wound bacterial contamination and wound healing. *Clin Orthop.* 1974; 101: 99–104
35. Wilson PD, Jr., Aglietti P, Salvati EA, Subacute sepsis of the hip treated by antibiotic and cemented prosthesis. *J Bone Jt Surg.* 1974; 56A: 879–898
36. Salvati EA, Wilson PD, Jr., Jolley MN, Vakili F, Aglietti P, Brown GC, A ten year follow-up study of our first one consecutive Charnley total hip replacements. *J. Bone Jt Surg.* 1981; 63A: 753–767
37. Pellicci PM, Wilson PD, Jr., Sledge CB, Salvati EA, Ranawat CS, Poss R, Revision total hip arthroplasty. *Clin Orthop.* 1982; 170: 34–41
38. Pellicci PM, Wilson PD, Jr., Sledge CB, Salvati EA, Ranawat CS, Poss R, Callaghan JJ, Long term results of revision total hip replacement; a follow-up report. *J Bone Jt Surg.* 1985; 67A: 513–516
39. Callaghan JJ, Salvati EA, Pellicci PM, Wilson PD, Jr., Ranawat CS, Results of revision of mechanical failure after cemented total hip replacement. *J Bone Jt Surg.* 1985; 67A: 1074–1085
40. Johanson NA, Bullough PG, Wilson PD, Jr., Salvati EA, Ranawat CS, The microscopic anatomy of the bone–cement interface in failed total hip arthroplasties. *Clin Orthop.* 1987; 218: 123–135
41. Wilson PD, Jr., Revision total hip arthroplasty: current role of polymethylmethacrylate. *Clin Orthop.* 1987; 225: 218–229