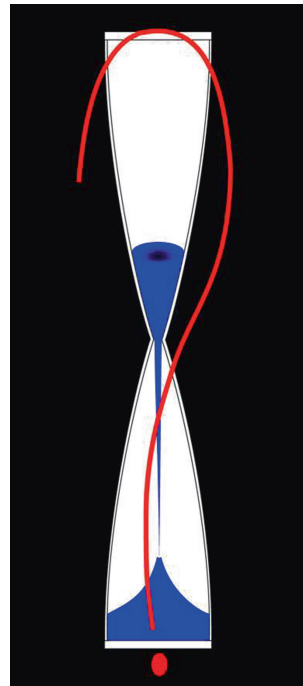


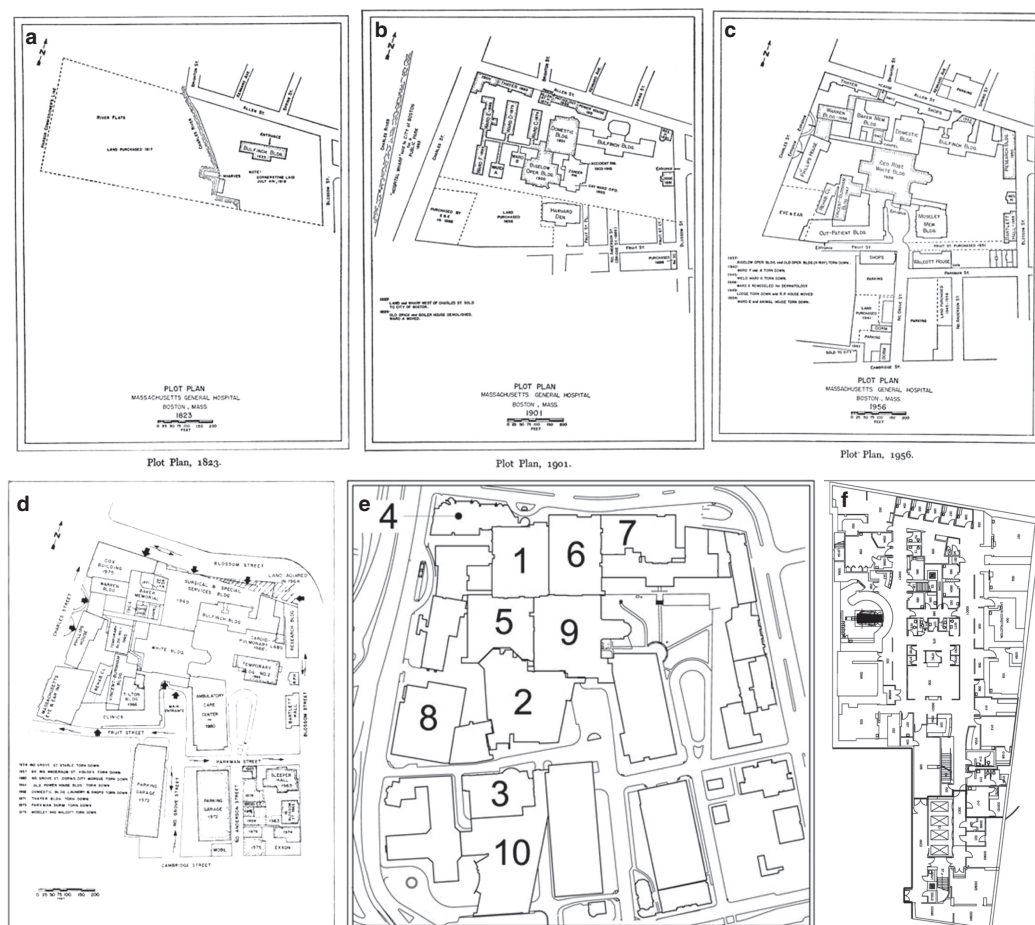
## Preface

The undisguised goal of the Massachusetts General Hospital [MGH] Department of Radiation Oncology is to work intensively to progressively and substantially increase the proportion of patients who are free of tumor and of treatment-related morbidity. There is acute awareness of the high incidence of cancer and the fact that we do not achieve our goal in a non-trivial proportion of patients. We are definitely sensitive to the fact that there are many questions to be posed and that the answering of those questions requires imaginative and thoughtful laboratory and clinical research. Importantly, there is no ambiguity that time is moving forward without the slightest delay for any person on this planet. This means posing critical questions and moving energetically to the generation of answers. The clear importance of questions and the relentless progress of time are illustrated by the image of the question mark and hour glass in Fig. 1.

A history of radiation oncology at the Massachusetts General Hospital (MGH) is a history of one component of the hospital and it will be considered in the context of the history of the hospital. This extends from 1811 to the present. Similarly, the hospital evolved out of the long history of medicine and science. Selected developments/events during that pre-MGH era will be discussed briefly.



**Fig. 1** Questions abound and are to be answered and time does not wait



**Fig. 2** (a–d) Footprints of the MGH in 1823, 1901, 1956, and 1980. (e) Footprint of the MGH as of 2011. Notice buildings 2, 3, 4, and 10 are the Third Century, the Francis Burr Proton Therapy center, the Cox, and

the Yawkey, buildings, respectively. Buildings numbered 1, 6, 7, 5, 9, and 8 are Blake, Grey, Jackson, Ellison, White, and MEEI, respectively. (f) Floor plan of Cox Ground clinical radiation area

We describe the creation of the MGH in 1811 and its subsequent growth and its contributions to advancing medicine, its staff and physical size. For the latter, look at the increasing MGH footprint vs time, 1823, 1901, 1956, 1980, and 2011; the floor plan of the Cox Ground floor is included, Fig. 2a–f. The present complex is illustrated by the aerial view, a view from across the Charles River, the new Yawkey, and the Third Century Building nearing completion are shown in Fig. 3a–d. In 2004 the Yawkey building was opened and added 440,000 ft<sup>2</sup> for hospital programs and an additional 530,000 ft<sup>2</sup> is to be available in 2011 in the Third Century Building. These do not show the Schinches building just across Blossom St. and the extensive complex in Charlestown. The present array is indeed substantial. Further, the sites of our radiation oncology programs at the Boston University Medical Center, Emerson Hospital, Newton Wellesley Hospital, and North Shore Center are not shown.

The Cox building, Fig. 4a, was opened in 1975 as the MGH Cancer Center, housing the radiation oncology program, viz., the clinical radiation equipment and treatment areas (ground floor), staff offices, and administration on Cox 3; physics, Cox 3; machine shop and engineers work space, Cox 4; and biology research laboratories and mouse colony, Cox 7 and half of Cox 6. In addition there were several multidisciplinary oncology clinics, office spaces for medical and surgical oncology staff. A significant expansion in our radiation biological research program occurred after R. Jain and team came in 1991 to the Steele Laboratories in Cox 7 and



**Fig. 3** (a) An aerial view of the MGH complex; (b) A view from across the Charles River; (c) The Yawkey building from Cambridge St (2004); and (d) The Third Century Building, to open 2011. This is on the site of the old Clinic Building and the Vincent Burnham Building



**Fig. 4** (a) The Cox Building (1975). (b) Building 149, one of the Charlestown complex of MGH buildings

to substantial laboratory space in Building 149 in Charlestown, Fig. 4b. The MGH now has several large buildings in the Charlestown complex.

We operated the proton therapy program for 28 years at the Harvard cyclotron. In 2001 that program was transferred to the Francis H. Burr Proton Therapy Center, shown in Chapter 6. The Yawkey building was constructed around and above the MGH proton center. The plan is that the Third Century Building will house all of the photon and electron therapy units and related clinical functions. In addition, consideration is given to including an additional proton facility. Thus, all of the clinical activities of radiation oncology will be convenient for patients and staff to the array of oncology clinics and conferences in the Yawkey. The only remaining radiation oncology function in Cox is to be the Steele Laboratory. The labs in Charlestown are to continue.

The physical scale of the MGH is impressive. Specifically, the gross total floor space is 7,335,654 ft<sup>2</sup>, the equivalent of ~168 acres. These figures include all spaces, e.g., clinical, research, general operations, parking. Of this, 4,729,053 ft<sup>2</sup> are on the main MGH Campus.<sup>1</sup> Our Charlestown complex represents 1,680,000 ft<sup>2</sup>. There are several properties at other sites.

<sup>1</sup>The area of the Clinics, Vincent and Tilton buildings were not included as they have been demolished in preparation for the construction of the Third Millennium Building for 2011.

Of the total, 6,166,212 ft<sup>2</sup> are owned and 1,169,442 ft<sup>2</sup> are leased by the MGH. These figures include all spaces, e.g., clinical, research, general operations, parking.

These figures do not include the building for the third century, scheduled to be completed in 2011. The gain in ft<sup>2</sup> will be 530,000 ft<sup>2</sup>. This would raise the total to 7,865,000 ft<sup>2</sup> or a total of ~180 acres. In addition, MGH rents 348,000 ft<sup>2</sup> in the Simches building that is in the space toward the shopping mall, just beyond the Holiday Inn. This brings the total to ~8,200,000 ft<sup>2</sup>.

The areas for radiation oncology in ft<sup>2</sup> are 24,414, 25,265, 3884, and 2062 for the Cox building, the Burr Proton therapy Center, Emerson building, and Harvard Gardens, respectively.<sup>2</sup>

The MGH is an exceptionally well-regarded institution internationally as providing the finest quality of medical care, advancing medicine by clinical and laboratory research and education of persons entering healthcare professions. The present size and scope of the hospital merit brief comment at this point. The number of beds started at 73 and is to be 1057 in 2011. The MGH now has 18,283 employees (2008), including 1625 M.D.s and 527 Ph.D.s. Importantly, the research budget for the hospital is \$528 M. For some years, the research budget has been in the 22–26% of the hospital total budget. Of this total, 80% is for on-site programs. For research training and for clinical trials, the distribution has been 8 and 7%, respectively. Financially, the MGH is in good condition, at this point in time: the FY2007 income is budgeted at \$2300 M and expenses of \$2200 M, i.e., a surplus of \$100 M. This reflects wise and prudent fiscal management combined with an undisguised commitment to providing continuously improving quality of medical care.

Over this 28-year period the department has enjoyed sustained medical, scientific, and educational success and is judged to be one of the very top radiation oncology programs on the global scene. These successes have been accompanied by continued growth in patient numbers and physical equipment and size. For example, the number of medical (M.D.) and science (Ph.D.) staff is now 46, with 19 physicians and 27 scientists. Of the Ph.D. full-time science staff 13 are in physics, 3 in biomathematics, and 11 in biology. This compares with four full-time clinicians and no Ph.D. scientists in 1970.

The total number of FTE employees is 258 and fortunately we are operating in the black. The number of patients treated per day has increased from ~90 in 1970 to ~270 by x-ray, electron, and proton beams. This includes ~11 pediatric patients treated per day.

In 1994, the MGH joined with the Brigham and Women's Hospital to create Partner's Health Care System. This organization has grown quite rapidly in the intervening 16 years to include a broad complex of eastern Massachusetts hospitals. Those owned by Partners Systems and are MGH related include Newton Wellesley, Spaulding, North Shore, and McLean Hospitals. Our department has responsibility for the clinical staffing and operation of radiation oncology programs at Boston University Medical Center and the Emerson Hospital. Further, the MGH has a very close affiliation with the Massachusetts Eye and Ear Infirmary. Despite ongoing speculation of a merger of the MEEI and MGH during the 40-year period of 1970–2010, the department continues to maintain extremely close collaborative working relations but remains generally independent. The MEEI cancer patients are seen collaboratively by MGH radiation and medical oncology staff and receive radiation treatment at MGH.

Similarly, the Brigham Women's Hospital (BWH) operates a clinical therapy unit in the Dana Farber Cancer Institute (DFCI). The Brigham works very closely with Boston Children's Hospital. It has working arrangements with several community hospitals also. Further, there is a complex interaction between the MGH, BWH, the Dana Farber Cancer Institute (DFCI), and the Beth Israel Deaconess Hospital (BID) to form the Harvard Cancer program. One benefit is

---

<sup>2</sup> This information was generously provided by David Ryan and David Hanitchak (Planning and Construction, real Estate and Facilities, MGH), personal communication, 2008.

a mechanism for planning and conducting Harvard-wide clinical investigations, clinical trials, and laboratory research. In addition, there is a Harvard-wide residency program.

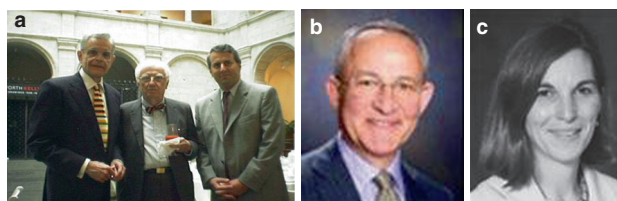
At this time, the MGH is the largest component of the quite impressive and expanding Partner's Health Care System.

## Recent and Present Leaders of Radiation Oncology at the MGH

Milford Schulz was the first MGH radiologist to practice almost full-time radiation therapy. He was on the staff from 1942 to 1976. Herman Suit was Chief of the Department of Radiation Oncology from June 1970 to October 2000. Jay Loeffler was then appointed as the new chief and is continuing effectively in that role. Figure 5a is a photograph of these three in the Fogg Museum of Fine Art of Harvard University at the evening function of a Science Festivity Day of the department. We work collaboratively with Jay Harris and his team at BWH and Mary Ann Stevenson and her team at the BID; see Fig. 5b.

MGH residents and fellows who have become chairs of academic departments of radiation oncology

Resident/fellow	Chief of radiation oncology	Resident/fellow	Chief of radiation oncology
Michael Baumann	University of Dresden, Germany	Thomas DeLaney	Boston University
Wilfred Budach	Düsseldorf, Germany	Sten Graffman	University of Lund, Sweden
Krzysztof Bujko	Marie Curie Cancer Center, Warsaw, Poland	Edward Halperin	Duke University University of Louisville as Dean
Arnab Chakravarti	Ohio State University	Eugen Hug	Dartmouth University, NH and at present Paul Scherrer Institute, Switzerland
Jurgen Debus	University of Heidelberg	Lisa Kachnic	Boston University
		Simon Powell	Washington University and at present Memorial Sloan Kettering Cancer
Larry Marks	University of North Carolina	Tyvin Rich	University of Virginia
Raymond Miralbell	University of Geneva, Switzerland	Joel Tepper	University of North Carolina
Rene Mirimanoff	University of Lausanne	Chris Willet	Duke University
Paul O'Kunieff	National Cancer Institute, Radiation Branch University of Rochester University of Florida	Takashima Yamashita	National Cancer Center, Tokyo, Japan
Marie Overgaard	University of Aarhus		
Resident who became director of Cancer Research Center			
Jens Overgaard	University of Aarhus, Denmark		



**Fig. 5** (a) Milford Schulz with Jay Loeffler (*right*) and Herman Suit (*left*) in the Harvard Fogg Museum of Fine Art. (b) Jay Harris, chief at the Brigham, and (c) Mary Ann Stevenson, chief at the Beth Israel-Deaconess system



## Physicists who have become chiefs of medical physics

Physicist	Head of medical physics	Physicist	Head of medical physics
Art Boyer	Stanford, CA	Clift Ling	George Washington, UC San Francisco, Memorial Sloan Kettering, NY
Ken Gall	Southwestern University, Dallas, TX	Marcia Urie	U Mass Worcester
Dale Kubo	UC Davis, CA	Lynn Verhey	UC San Francisco

One of the characteristics of the MGH program is the international character of its staff as is clearly illustrated in Fig. 6. The dots indicate the geographic origin of our faculty (blue) and residents, fellows, and students (red). This reflects our definite policy of seeking talent from the entirety of this planet. Our attitude has been “we have no interest in where you came from but only where you are going.” This has definitely been a positive factor in the productivity of all sections of the department.

Of the full-time faculty at MGH as of this writing, the fraction who came from abroad are medical, 7 of 19; physics 11 of 16; laboratory research 7 of 11; or a total of 25 of 46.

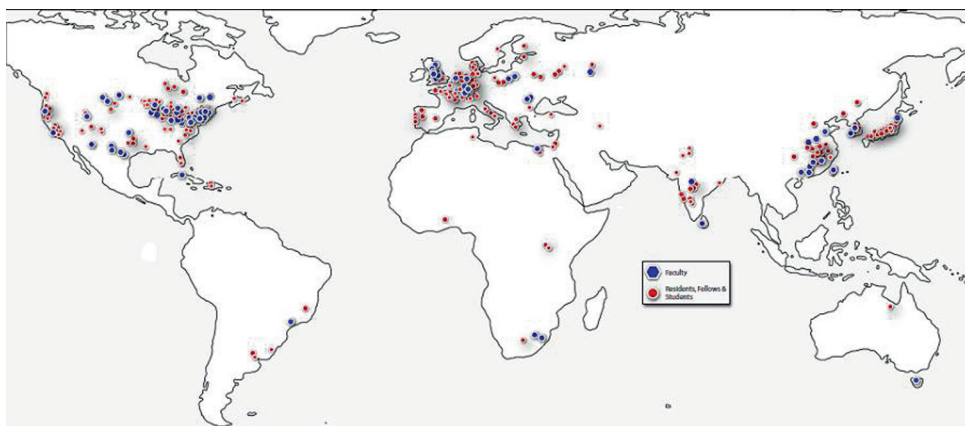
Ed Halperin was chief at Duke and then associate dean. He was next appointed to be dean of the Medical School at Louisville, KY. Nancy Tarbell has been appointed as dean for Academic Affairs at Harvard Medical School.

Jens Overgaard is director of the Cancer Research program at Aarhus.

Daniel Dosoretz is the most successful entrepreneur in American radiation oncology. He started with one center in Florida and now has more than 100 centers in the USA. He is credited with a model QA system yielding a quality operation.

Three of our former residents are now Editors in Chief of the three major journals in radiation oncology. These are Joel Tepper for *Seminars in Radiation Oncology*, Jens Overgaard for *Radiotherapy and Oncology* and Anthony Zietman for *International Journal of Radiation Oncology, Biology and Physics*. The impact factors are 4.1, 4.0 and 4.8. This is a unique achievement for residents from any single program.

Major books include (Underlined names are present or former MGH staff): George Holmes and Milford Schulz *Therapeutic Radiology*; CC Wang (Editor) and author, *Clinical Radiation Oncology: Indications, Techniques, and Results*; CC Wang, *Radiation Therapy for Head and Neck Neoplasms*; E. Halperin and co-editors L. Constine, Nancy Tarbell, and L. Kuhn (co-editors), *Pediatric Radiation Oncology* (in 5th edition); E. Halperin and co-editors C. Perez and L. Brady, *Principles and Practice of Radiation Oncology*; Peter Black and Jay Loeffler, *Cancer of the Nervous System*; Peter Mauch and Jay Loeffler, *Radiation*



**Fig. 6** Geographic distribution of the origin of our faculty (blue) and residents, fellows, and graduate students (red)

*Oncology Technology and Biology*; Dennis Shrieve and Jay Loeffler *Human Radiation Injury*; L. Gunderson and J. Tepper *Clinical Radiation Oncology*; Gunderson I, Willett C, Harrison L, Calvo P. *Intraoperative Irradiation*.

From the MGH, there have been five presidents of ASTRO: M. Schulz, H. Suit, J. Tepper, A. Zietman, and L. Gunderson. In addition, J. Overgaard and M. Baumann (former resident and fellow) have become presidents of ESTRO. T. Yamashita (former fellow) has served as president of JASTRO.

Among ASTRO gold medalist are C.C. Wang, W. Shipley, C. Ling, J. Tepper, and H. Suit.

## Presidents of MGH 1970–Present

During the history of the start of the planning for department and its operation to the present the MGH has had seven general directors/presidents. These are Dean Clark (1941–1962), John Knowles (1962–1972), Charles Saunders (1972–1981), J. Robert Buchanan (1982–1994), Sam Their (1994–1996), James Mongan (1996–2002), and Peter Slavin (2002–Present). The general directors/presidents with whom this department has interacted are shown in Fig. 7a–f. We have worked effectively and productively with each.

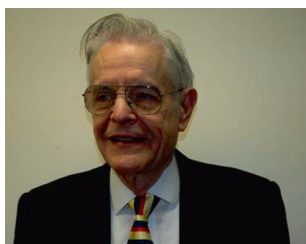
For the MGH radiation oncology department, virtually all of our staff, residents, and fellows, past and present, accept as a given that MGH stands for Man's Greatest Hospital. This decidedly immodest assessment is widely viewed among our group as being manifestly true and that perception is clearly reflected in a marvelous esprit de corp. Such an exceptionally



**Fig. 7 (a–f)** The general directors/presidents from 1962 to the present: John Knowles (1962–1972), Charles Saunders (1972–1981), J. Robert Buchanan (1982–1994), Samuel Their (1994–96), James Mongan (1996–2002), and Peter Slavin (2002–present)

positive attitude is solidly based on the judgment that the best possible care is provided for each MGH patient, i.e., the patient is, in fact, number one. Quite importantly, such an attitude is widespread throughout the hospital. Further, there is a deep pride in the contributions to the scientific advancement of oncology by this department.

## **Autobiographical Sketches of the Two Chiefs of the MGH Department of Radiation Oncology**



**Fig. 8** Herman Suit

February 1929. I lucked into life in Houston, TX, by way of a C section by Dr. Herman Johnson, required because of a placenta previa. This was a very uncommon surgical procedure in Houston at that time. My parents were so relieved at the success that they named their new son Herman. My medical experience was just beginning as at 4 weeks I was operated by Dr. Judson Taylor for pyloric stenosis. After the procedure, my mother was told that there was no need to bandage the surgical scar as I could not survive. She insisted that I would survive and they had to provide care to that effect. Johnson and Taylor later became the first chairs of OB-Gyn and of Surgery, respectively, at Baylor College of Medicine after its move to Houston. My luck continued in that Herman Johnson took a long-term interest in me. This medical history and the interest by Johnson were important factors in my decision to want a career in science and medicine. My mother's wish was for me to become a concert pianist or orchestral conductor. My maternal grandmother articulated very serious disappointment in my not wishing to be a preacher (such was not even on my screen but certainly never mentioned to her).

I had a very good time as a student and greatly enjoyed the years in the public schools and was a regular user of the school libraries and the Houston public library. Libraries became a significant interest/hobby for my adult life. A most special time for a boy in Texas were my three summers (ages 11, 12, and 13) and one fall school term on my grandparents farm/ranch in New Mexico. This provided riding, shooting, and the life of a young cowboy. At 13, I had a New Mexico driver's license. This carried zero weight with my father when I returned to Houston and had to wait to age 16 before getting the keys to the family car. I had the most wonderful parents. They were extremely supportive and caring and there was a deep and mutual love.

WWII was a very big concern to all and I assumed that I would be drafted. My determination was to be an officer and not a "troop." Hence I went to summer school and took extra courses during the regular terms in order to be a university junior by age 18 and hence eligible for officer's training school. Fortunately, the war was over in 1945. I graduated in January 1946 and then had my B.Sc. at 19 from the University of Houston. The finest teacher in my life was Eby Nell McElrath from whom I took organic and then biochemistry. This enhanced my determination to be in a scientific field of medicine. My family had very modest finances and I worked as a sales person at a lady's shoe store, Saturdays all day and Thursday evenings. The earnings combined with living at home provided for all of my college tuition, books, etc.



This work stopped upon entering medical school. My contacts with Herman Johnson continued quite warmly. He invited me to meet the Dean of Baylor. Johnson told him that he really should admit Suit into the incoming class in 1948. If not, there would be an awkward situation as he, as chair of the Advanced Admission Committee, would admit me as a junior. Clearly, I had no worry re-admission. My class had 89 students. A definite positive was the school policy that there be at least four women per year.

My plan was to obtain an M.Sc. in biochemistry while at Baylor. The goal was to become an endocrinologist as I judged it the most scientific specialty in medicine. Early as a freshman, I met Prof. Joe Gast, chair of biochemistry. Although I had had 1 year of college physics and of math, he required that I take physics and math at University of Houston in the summer between years 1 and 2 and more math at night during the fall term of my second year. Then, I had to take courses in nuclear and atomic physics at University of Texas at Austin in the summer between years 2 and 3. This was an extremely exciting experience, viz., learning about the atom and nucleus, viz., some real science. As a medical student taking such courses was definitely uncommon, the professor suggested that I read two books dealing with radiation biology and take an exam for credit. The result was a very large surprise, i.e., learning that radiation was being used to cure patients of their tumor with preservation of anatomy and function. I changed my career plans to radiation oncology.

As a boy of  $\sim 11$ , I developed the opinion that Oxford University had the highest concentration of intellectual power on this planet and I wanted to go there. That was not a prospect. I was enormously thrilled when considering a center to go for research and clinical education in radiation oncology to learn that Oxford was indeed an absolutely top-rated center. I applied and was accepted to my huge surprise. I did not appreciate that there were practically no applicants to radiation oncology and that they were keen to get a young doctor, even an ex-colonial with research interest. That there had been no competition for the position was of no concern to me as I was actually at Oxford. The chief was Frank Ellis, a super role model as he was interested almost entirely in data and little interest in opinions. Further, there was an outstanding researcher L. Lajtha. He became my thesis advisor, really brilliant and a true scholar. I was most pleased to be surrounded by extremely impressive talent in many areas of human interest and activity. I was admitted as a D.Phil. student (Oxford and Cambridge do not use the designation Ph.D.) and a scholarship. The 3.4 years in Oxford were the most intellectually stimulating time of my life. There was constant questioning, offering of contrary opinions, disputations and all with real respect and courtesy. I did learn much in radiation oncology, lab research, and most certainly respect of data as the critical factor in assessing an interpretation of any phenomenon. One close colleague and long-term warm friend is Eric Hall.

This was followed by two excellent years at the radiation branch of the NCI with approximate half time in the lab and half in the clinic. As a young American physician with English boards and an Oxford D.Phil. even with only quite modest clinical experience, I was given responsibility for the radiation treatment of all patients at the NCI except for electron irradiation by a giant Van de Graaff unit. I declined the latter, as the machine was unreliable, having produced one fatal and one quite serious injury due to malfunction not long before I arrived at the NCI.

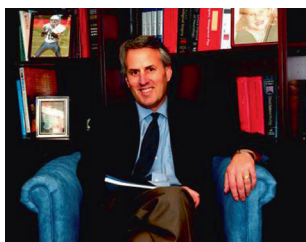
I was then recruited to MD Anderson by Warren Sinclair, head of physics, during the 1958 meeting of the International Society of Radiation Research at Burlington Vermont. He asked me to go for a swim out into Lake Champlain. There he discussed the MD Anderson and the opportunity to work in the clinic:lab on a 50:50 time basis and be the head of the to be formed section on experimental radiation therapy. I accepted and we swam back to shore. Several months later G. Fletcher was in Washington and confirmed the invitation.

I moved there in July 1957 and was assigned to work with Paul Chau in Gyn. Also close clinical colleagues were L. DelClos, E. Montague, R. Martin, W.O. Russell, and others. After about 2 years, I proposed studying the role of radiation for mesenchymal tumors based on the work of T. Puck, viz., showing that a wide spectrum of human tumor cell lines in vitro had similar radiation sensitivities. Thus, sarcomas might not have a different inherent sensitivity.

As a starter, the patients were those with extremity lesions and were treated under conditions of tourniquet hypoxia, to minimize the role of hypoxic cells. Due to the impressive success rate, this approach was extended to proximal extremity and torso sarcomas under conditions of normal blood flow. As a function of volume, TCPs of non-superficial sarcomas and epithelial tumors are now known to be similar. The time in the laboratory was extremely pleasant both in terms of the problems investigated and the people with whom I interacted, viz., R. Sedlacek, R. Withers, L. Milas, W. Dewey, Ian Tannock, A. Howes, and many others. Of special pleasure were the two Ph.D. students: Larry Thompson and Helen Stone. Fletcher was a highly effective leader and I really enjoyed working with him. See Chapter 4 re lab research while at MDACC.

After 11 years at MDACC, I had the excellent luck to be recruited to MGH and commenced work in 1970. To state that I have enormously enjoyed my years in medicine and at such incredibly fine institutions would be a serious understatement.

My wisest decision was to propose marriage to Joan and to have had the marvelous good fortune of her acceptance. We have had an extremely happy time together and are planning to celebrate our 50th anniversary this coming November (2010).



**Fig. 9** Jay S Loeffler

I was born on December 27, 1955, in Carlisle – a lovely college town in south central Pennsylvania. My father was the first pediatrician in this region of the state and my mother was an English teacher in the public school system. I was the “baby” of the family with an older brother (John) and sister (Jan). While sports were my first love in life, I cannot remember a time when I was not interested in following my father’s path into medicine. Even at a very young age, I would accompany dad to his office and observe him seeing patients and reviewing x-rays. On weekends, I would often round with him seeing neonates and children on the floor of our local hospital. At the age of 16, I was offered a job in the hospital laboratory drawing blood from patients and performing blood chemistries and hematology tests. When I would return from work in the evening, dad would explain how these tests were used in the management of patients. These lectures soon transformed into discussions of human physiology, endocrinology, pathology, pharmacology, biochemistry. This very early introduction into the field of medicine has had a profound effect on my career as a physician.

In ninth grade, I went off to boarding school following my brother’s footsteps. I attended The Hill School in Pottstown, Pennsylvania, from 1970 until graduation in 1974. My main interests were in mathematics and biology and sports. I received 10 varsity letters during my time at The Hill and was the captain of the soccer and baseball team and received the coach’s cup in both sports. I received two prizes at graduation for excellence in advanced placement biology and chemistry. I was accepted to Williams College early decision – again following my brother’s path. At Williams, I immediately declared my major to be biology and began my pre-medical studies. I graduated with honors from Williams and was elected to the Purple Key Society – Williams’ honors “club.” Between my junior and senior year at Brown University School of Medicine, I was accepted to a summer fellowship program at the National Cancer Institute and was assigned to the Radiation Oncology Branch (ROB) under the leadership of Dr. Eli Glatstein. Other members of the ROB were Joel Tepper, Tim Kinsella, Allen Lichter,

Jim Schwade, Liz Travis, Jim Mitchell, and Dick Fraass. I was immediately impressed with the clinical and research talents I encountered and I decided to concentrate my efforts on seeking a career in radiation oncology. When I returned to Brown, I worked for Dr. Arvin Glicksman on several clinical projects as well as a lab project with Dr. John Leith. By the time I applied to residency programs, I had three peer-reviewed publications resulting from the work I had done at NCI and Brown. I applied to four residency programs – University of Pennsylvania, Yale, Joint Center for Radiation Therapy (JCRT), and the MGH. This was the time before the match and admissions were rolling in nature. By August of my senior year, I was accepted by Penn, Yale, and JCRT. I had only 2 weeks to make up my mind and I chose the JCRT based on my very favorable impression of Dr. Sam Hellman. Ironically, I never heard a word from the MGH until late October when Dr. Munzenrider invited me for an interview. I informed him that I had already accepted a position 2 months earlier at the JCRT.

Three months before I was to matriculate at the JCRT, Jay Harris sent me a letter announcing that Sam was leaving to become the physician-in-chief at Memorial Sloan-Kettering Cancer Center. Dr. Bob Goodman called me from the University of Pennsylvania later that week and offered me a “transfer” position explaining that it may take years for Harvard to replace Sam and my residency could be quite “disruptive.” During my first 2 years at the JCRT, Jim Belli, Bob Cassady, Joel Greenberger, Les Botnick, Chris Rose, Bill Bloomer, Arnold Malcolm, Ralph Weichelbaum, and Itzak Goldberg all left to accept leadership positions at other institutions. This left only two senior attending physicians, Jay Harris and Peter Mauch, and a first year attending – Nancy Tarbell. During my residency, I spent a year in the laboratory of radiobiology at the Harvard School of Public Health under the leadership of Dr. Jack Little. I concentrated my efforts on mutagenesis research on TK6 lymphocytes after exposure to commonly used chemotherapeutic agents and radiations. I was involved in another project evaluating the intrinsic radiosensitivity of human fibroblasts derived from patients who demonstrated extreme acute reactions to modest doses of radiation – and showed a correlation. I also attended a molecular biology and genetics course at Harvard Medical School. Jack was a great mentor for me personally and professionally and remains a dear friend. I was awarded a Farley Prize from Children’s Hospital that provided funds for me to travel to UCSF and spend time in neuro-oncology with the late Glen Sheline and Steve Leibel as well as neurosurgeons Phil Gutin, Mark Rosenbaum, and Charles Wilson. This was the period of my life when I clearly decided to enter the field of radiation neuro-oncology. I began my faculty time at the Brigham and Women’s Hospital with the charge of building a neuro-oncology program. I was named the director of the Brain Tumor Center of Children’s Hospital, Brigham and Women’s Hospital, and the Dana-Farber Cancer Institute and Peter Black and I had the fortunate experience of recruiting Howard Fine from medical oncology, Patrick Wen from neurology, Eben Alexander and Phil Stieg from neurosurgery, and Malcolm Rodgers from psychiatry to build one of the largest and most respected brain tumor centers in the USA. At the same time, I was involved with the early development of stereotactic radiosurgery and stereotactic radiotherapy which shortly would change the practice of radiation neuro-oncology worldwide. As the principal clinical radiation oncologist involved in the development of stereotactic radiation, we analyzed the results of radiosurgery in the treatment of a wide variety of vascular, benign, and malignant brain lesions as well as an extensive analysis of factors (both clinical and physical) associated with acute and late effects. After the completion of these studies, it was clear to me that fractionated stereotactic delivery would be preferable for the treatment of larger and critically located lesions. The development of immobilization and delivery systems for stereotactic radiotherapy (SRT) was an enormous task. The result, however, was a significant reduction in toxicity. A great example was hearing preservation following the treatment of >2 cm acoustic neuromas – a feat not achievable with radiosurgery.

In 1996, after many attempts, Herman Suit successfully recruited me to the MGH to serve as the medical director of the Northeast Proton Therapy Center. I began my time at the MGH on 12/1/96. My best friend, greatest supporter, closest colleague, mentor, wife, mother of my two children joined us from Children’s Hospital in the spring of 1997 to direct both the pediatric

proton project and the first Director of Office of Women's Careers at MGH. In August 2000, I was chosen by the search committee chaired by Kurt Isselbacher to replace Dr. Herman Suit as chair of the department and the Andreas Soriano Professor of Radiation Oncology at Harvard Medical School. In retrospect, my decision to come to the MGH was second only to marrying Nancy as the wisest move of my life.

Boston, MA

Herman D. Suit  
Jay S. Loeffler



<http://www.springer.com/978-1-4419-6743-5>

Evolution of Radiation Oncology at Massachusetts  
General Hospital

Suit, H.D.; Loeffler, J.S.

2011, XIX, 214 p., Hardcover

ISBN: 978-1-4419-6743-5