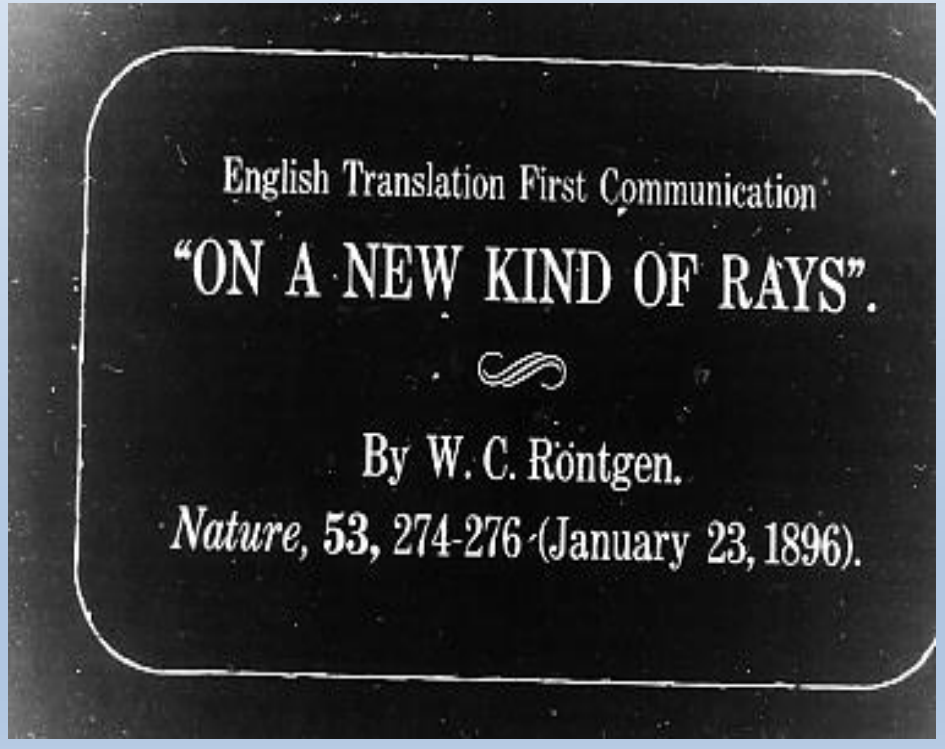
History of the Radiology Department St. Luke's Hospital of Kansas City

Gerhard Schottman, MD

David Dixon, MD

News of the discovery of x-rays in 1896 was known worldwide within a few days but the dangers of radiation took over 20 years to become apparent.



In 1902 St. Joseph Hospital was one of the first hospitals in Kansas City to install x-ray facilities. The early unprotected gas tube with an induction coil for high voltage is here demonstrated by Dr. John D. Scott with his nurse assistants. Dr. Scott died from overexposure to radiation 15 years later.

In 1914 St. Luke's had a total of 50 beds after the addition behind the converted dwelling was completed. It had moved to this location 8 years earlier. X-ray facilities were added along with the addition in 1914.

1914

The x-ray facilities were added at a cost of $800 according to minutes of the hospital board.

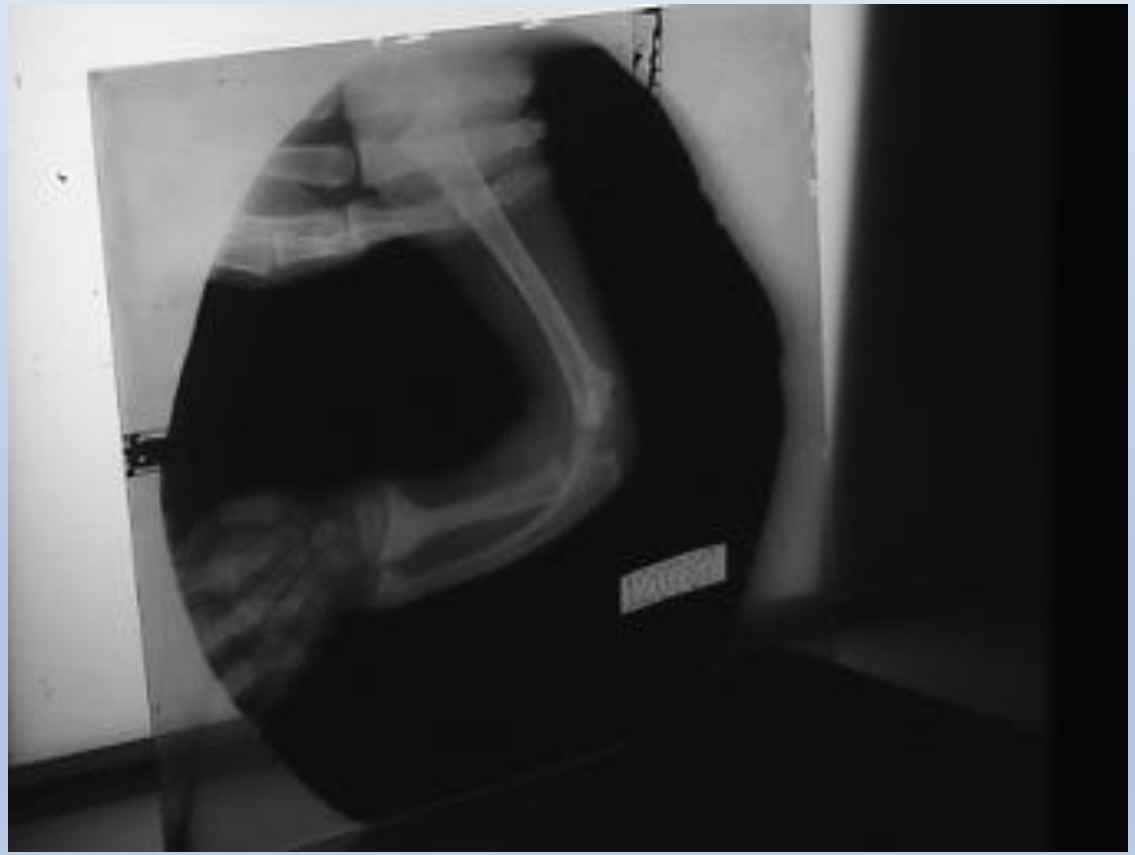
The unprotected gas tube was attached to a Snook interrupterless generator similar to the one demonstrated here.

Portable x-ray fluoroscope

The portable x-ray fluoroscope shown here was developed by Thomas Edison shortly after the discovery of x-rays. However, it was still a dim image, especially if the operator did not accommodate for peripheral vision in a darkened room.

With the unprotected tube the operator received as much radiation as the patient. Edison shortly thereafter discontinued work with x-rays when he realized the early dangers of radiation.

Glass plates were used for photography so these heavy plates were also used for x-ray images. However, exposure time was a minute or more depending on the output of the gas tube. Early radiologists put their hands in the beam to determine the amount of radiation. This is one of the reasons many early radiologists lost some of their fingers. This plate was in the radiology library for a number of years.

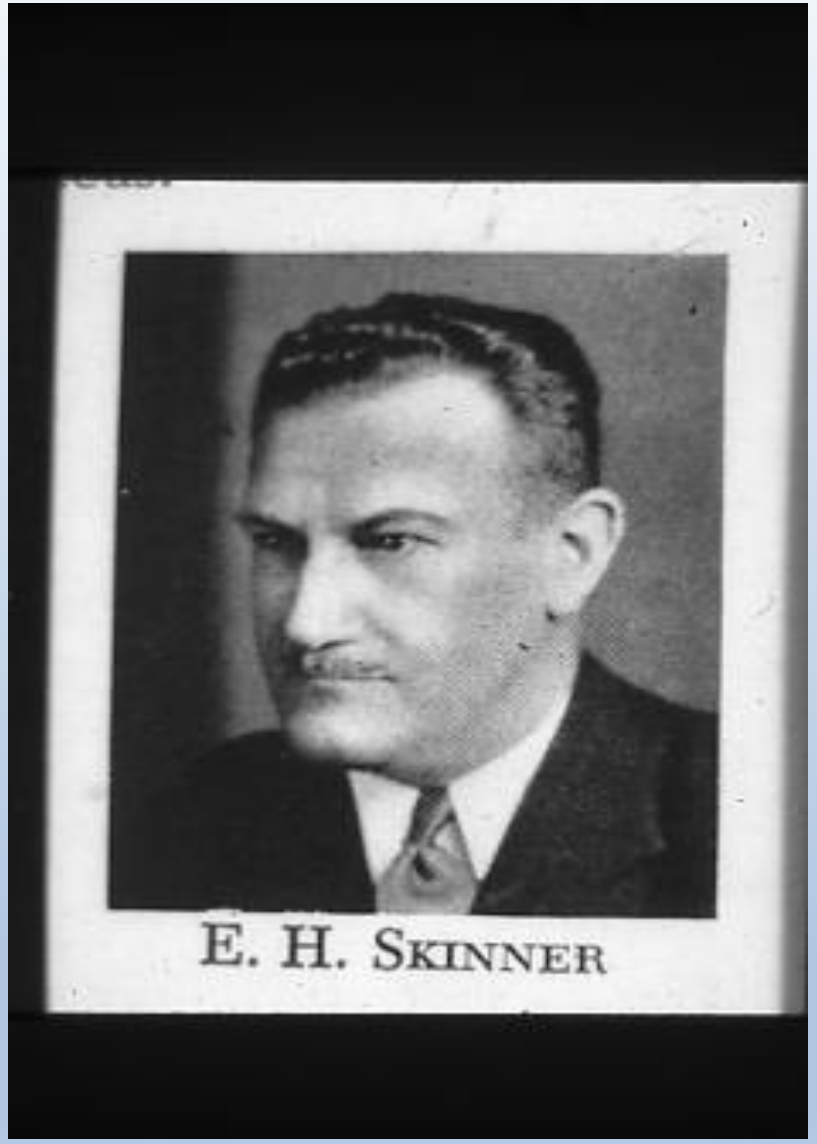


Dr. Edward H. Skinner
First Radiologist at
St. Luke's

Dr. Skinner graduated from St. Louis University in 1906 and moved to Kansas City that same year.

In 1909 the Jackson County Medical Bulletin stated that "he has been in Europe for several months studying in the Roentgen laboratories and will return about February 1 and re-establish his x-ray laboratory in Kansas City."

In 1919 he was appointed "the official x-ray doctor" by the Board of Directors. He helped to found the American Board of Radiology, the American College of Radiology, the Roentgen Ray Society as well as other organizations.

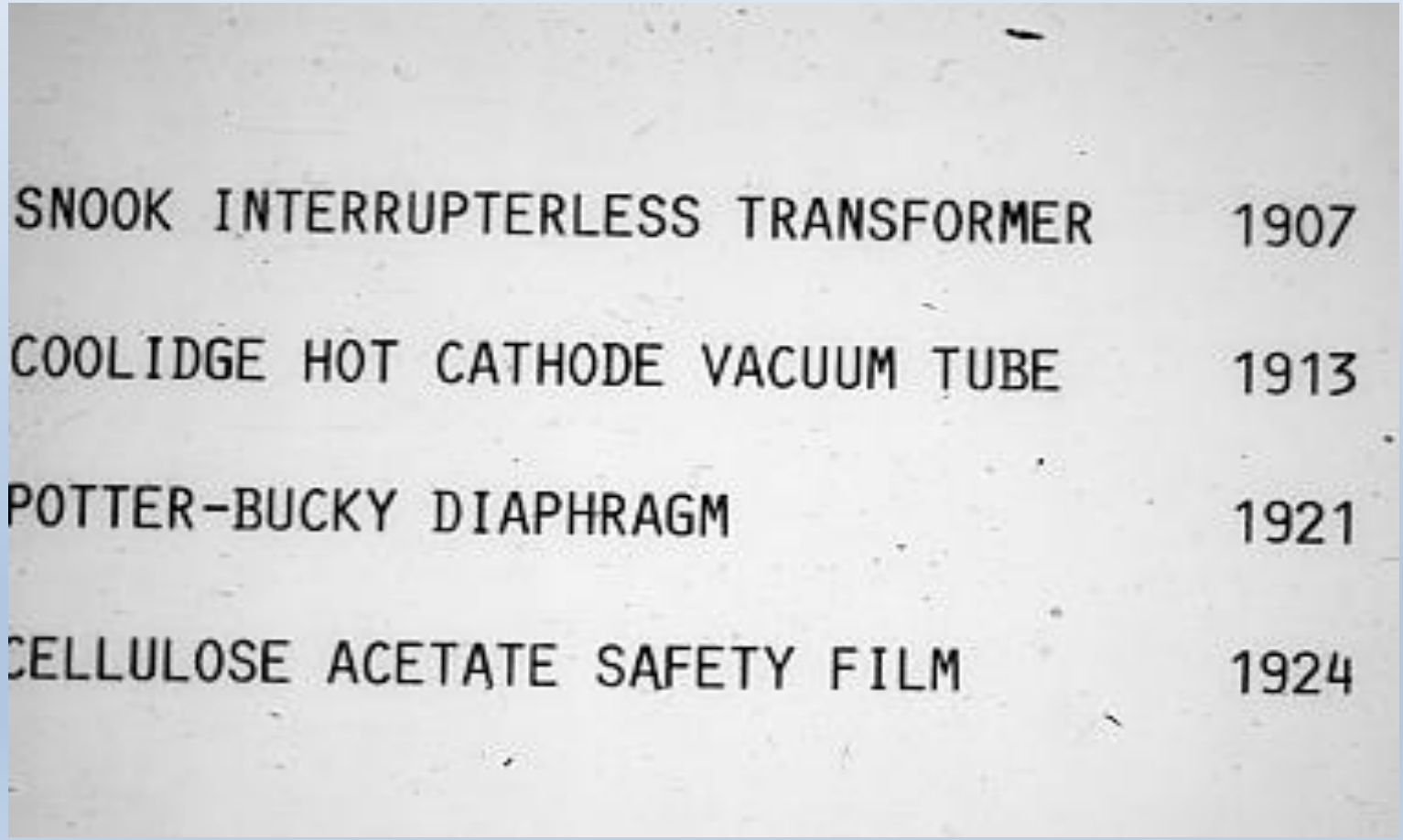


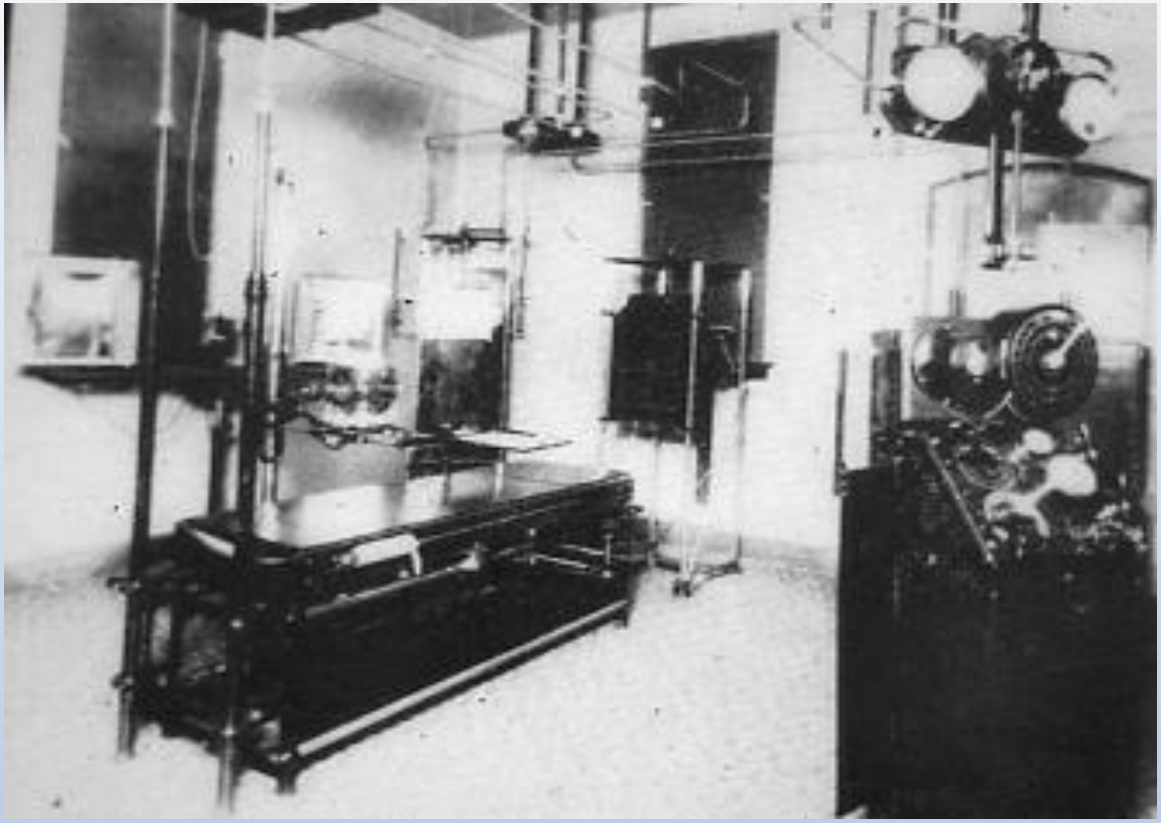
In 1923, St. Luke's moved to 43rd & Mill Creek (now J.C. Nichols Parkway) after completing a new 150 bed hospital. According to the Hospital Board minutes, "Dr. Skinner presented a plan for x-ray services suggesting that the hospital own the equipment to be purchased at a cost of $4,000 and that charges for services be divided between the x-ray physician and the hospital."

Medical Staff 1923

Among the doctors on the 1923 medical staff were several who had a national reputation. Dr. Arthur Hertzler wrote The Horse and Buggy Doctor which was a national bestseller in the 1930's. He founded the Halsted Clinic where he worked on weekends then took the train to Kansas City where he taught at KU and did surgery at St. Luke's during the week. He was the first president of the medical staff. Dr. Logan Clendenning wrote a nationally syndicated column as well as several books. Dr. Peter Bohan was considered the outstanding teacher of his day as well as an accomplished practitioner.

These are some of the important innovations in the early development of radiology.



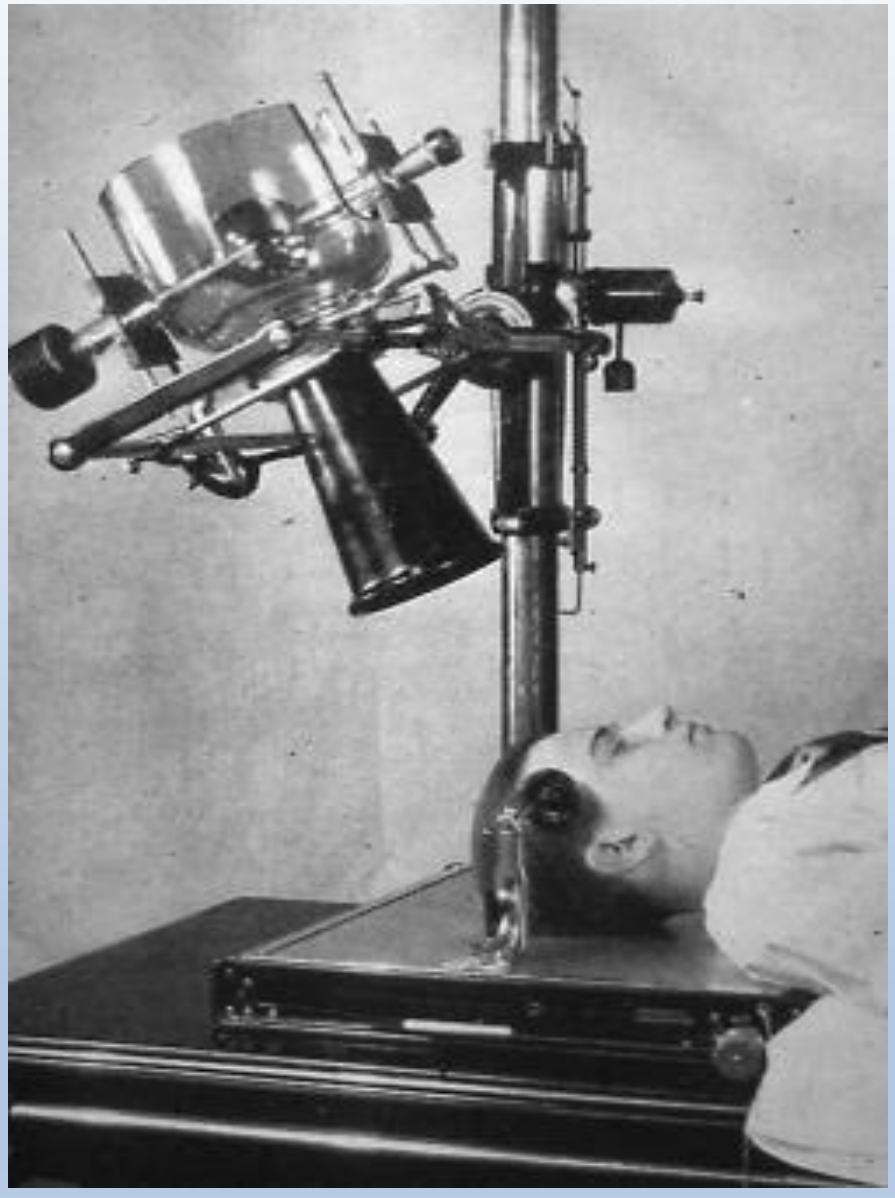


1923 Victor x-ray unit

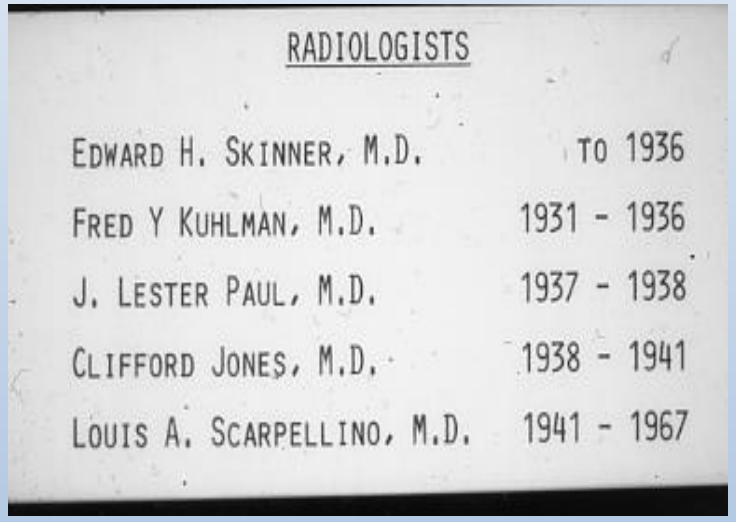
This Victor (later bought by G.E.) x-ray unit with a mechanical rectifier was installed in 1923. The rod suspended from the ceiling provided the high voltage to the x-ray tube. You could smell the ozone in the room. Shockproof high voltage cables and valve tube rectification would not be available until the 1930's. At that time, the x-ray department was in the hospital basement. In the 1930's a 500ma Westinghouse fluoroscopic unit was installed.

Coolridge hot cathode x-ray tube

The new Victor unit included the Coolridge hot cathode x-ray tube. This tube was encased in a lead glass shield with a collimation device to provide protection from the x-rays. Beneath the patient is a moving grid to eliminate imaging of scattered x-rays and to provide a sharper image on the new cellulose acetate safely film.



Early radiologists at St. Luke's



RADIOLOGISTS

EDWARD H. SKINNER, M.D.	TO 1936
FRED Y KUHLMAN, M.D.	1931 - 1936
J. LESTER PAUL, M.D.	1937 - 1938
CLIFFORD JONES, M.D.	1938 - 1941
LOUIS A. SCARPELLINO, M.D.	1941 - 1967

- In his obituary Dr. Skinner was described "as a vigorous, forthright, jaunty figure whose hard-boiled attitude on controversial matters belied other traits. He applied this principles aggressively to the problems of medicine, urging fellow doctors to organize to meet health needs in changing times. His death came from complications caused by exposure through many years to x-rays.

- Dr. Skinner was succeeded by Dr. Fred Kuhlman. A year later, Dr. Lester Paul was appointed radiologist. The next year he moved to the University of Wisconsin where he wrote the classic book: *Paul and Juhl's Essentials of Roentgen Interpretation*, the most widely used text for a generation of radiology residents.

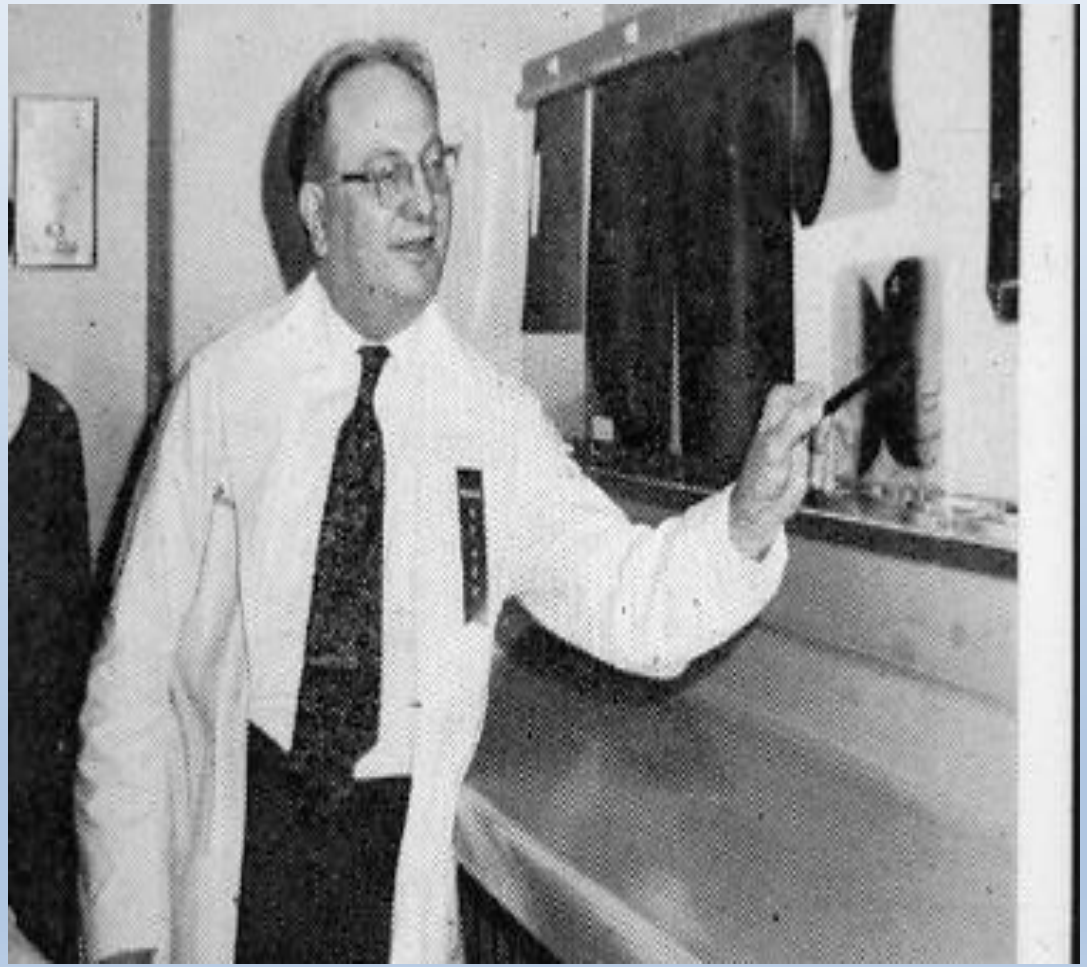
- For three years, Dr. Cliff Jones served as the radiologist before moving to Santa Clara, CA.

Dr. Louis A. Scarpellino

Dr. Louis Scarpellino graduated from Washington University Medical School in 1930. From there he took a preceptorship with Dr. Wendall Holmes in Boston and later with Dr. David Dann at Kansas City General Hospital where he became the Director of Radiology. He became the Director of Radiology at St. Luke's in 1941.

Dr. Scarpellino's motto was twofold: service to the patient and find what others miss.

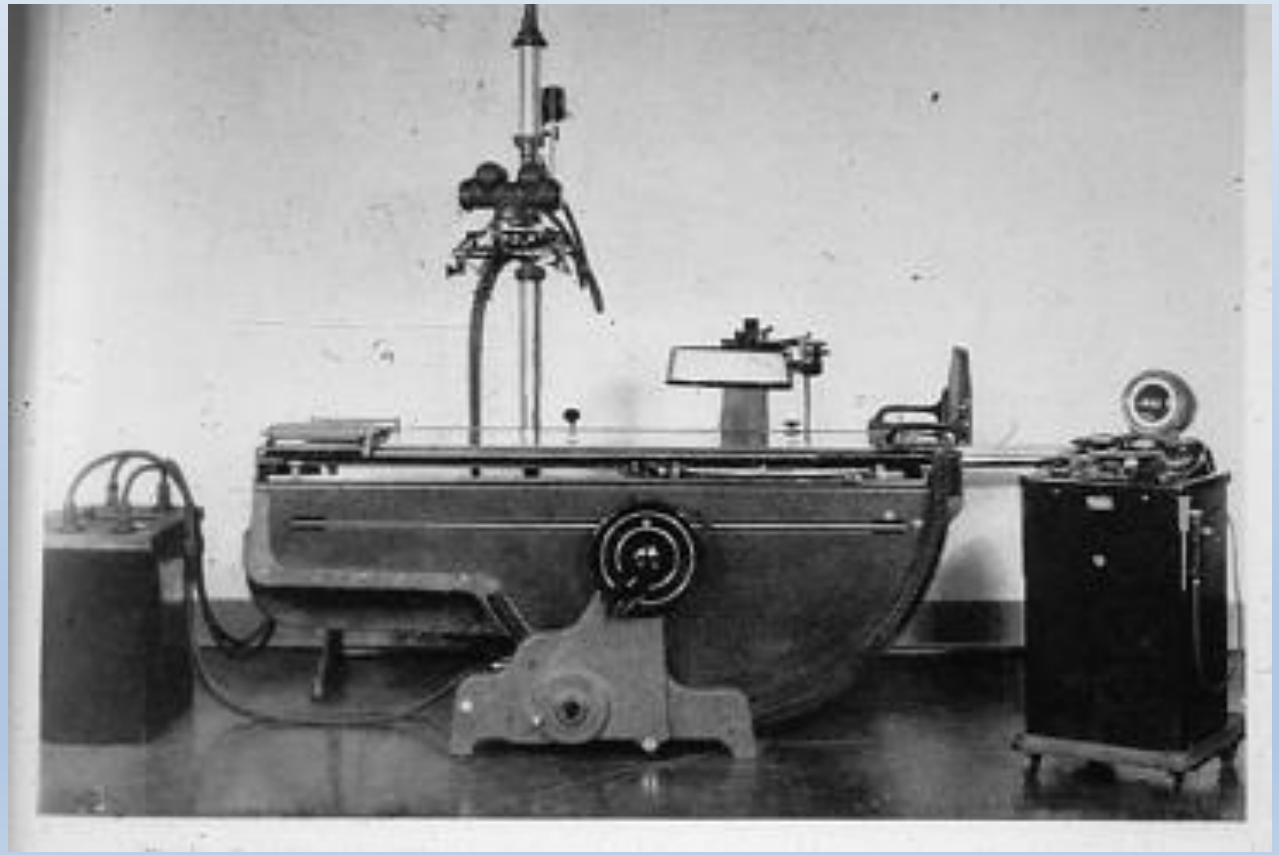
He was concerned about the cost of x-rays and would frequently make discounts when he thought the patients couldn't afford the charges.



Dr. Scarpellino seen with the students and entire staff of the x-ray department in 1944. About 6,500 x-ray procedures (20/day) were performed that year as compared to about 2,000 (6/day) in 1934. During the depression many patients were unable to pay their bills and the hospital was only able to stay open with generous donations from Mr. A.W. Peet and other members of the hospital board.

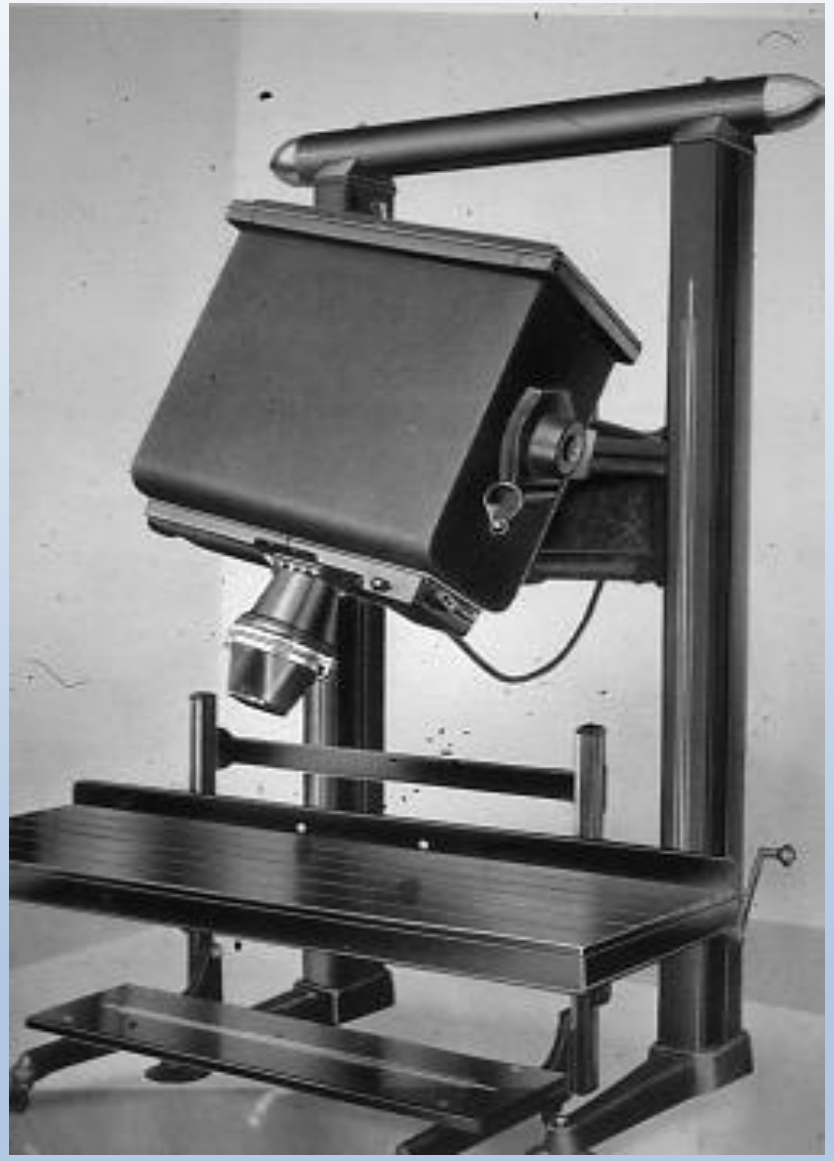
This G.E. radiographic fluoroscopic unit installed in 1945 at a cost of $9,000. Later a spot film device was added.

In the 1940's the x-ray department was located in the hospital basement.

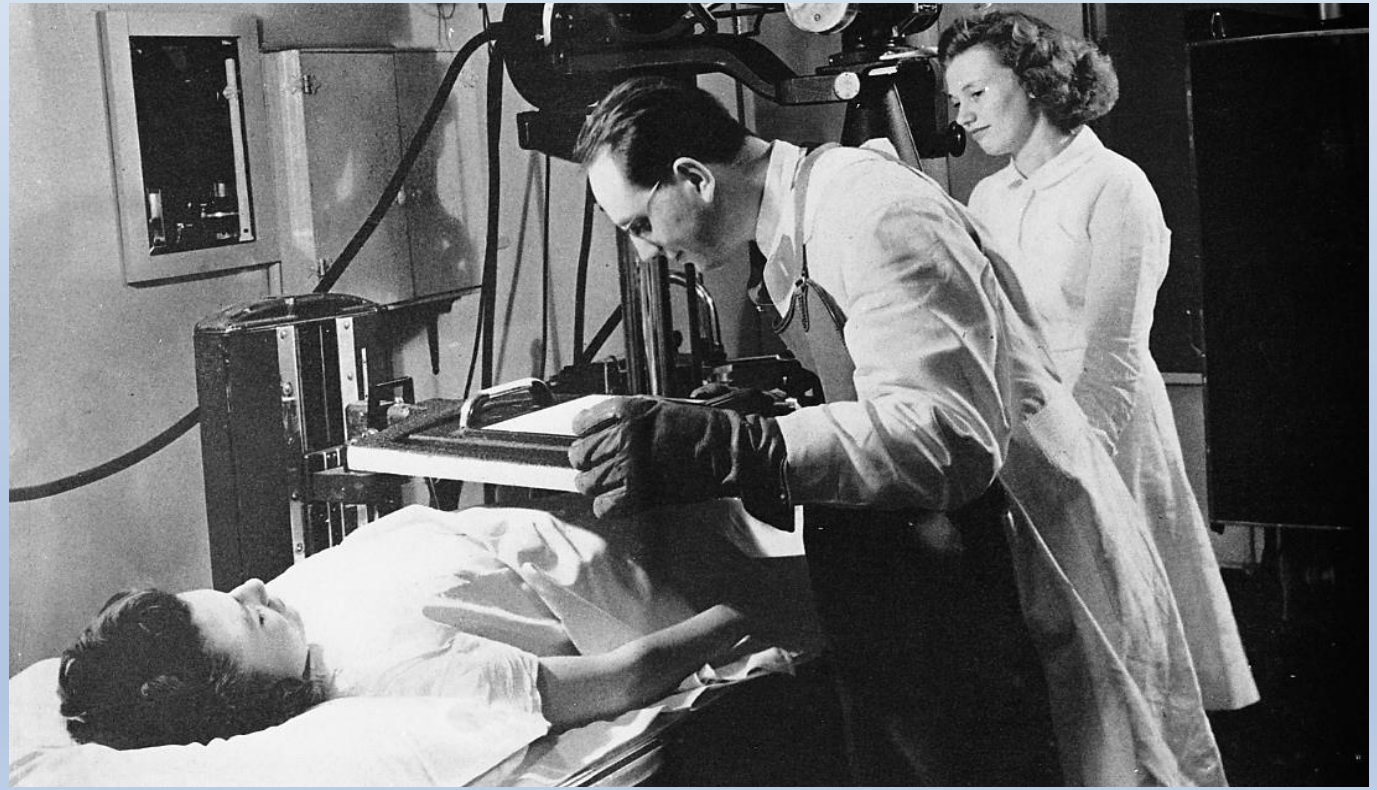


X-ray therapy unit
1945

A G.E. KV x-ray therapy was purchased at a cost of $6,000. This replaced an earlier unit located in the pathology department.



Dr. Scarpellino is seen here examining a patient in the old department located in the hospital basement. Note the lead gloves and apron he is wearing. The x-ray technician behind him is not so well protected because the hospital had limited funds for buying lead aprons. This was corrected when the department moved to the 5th floor.

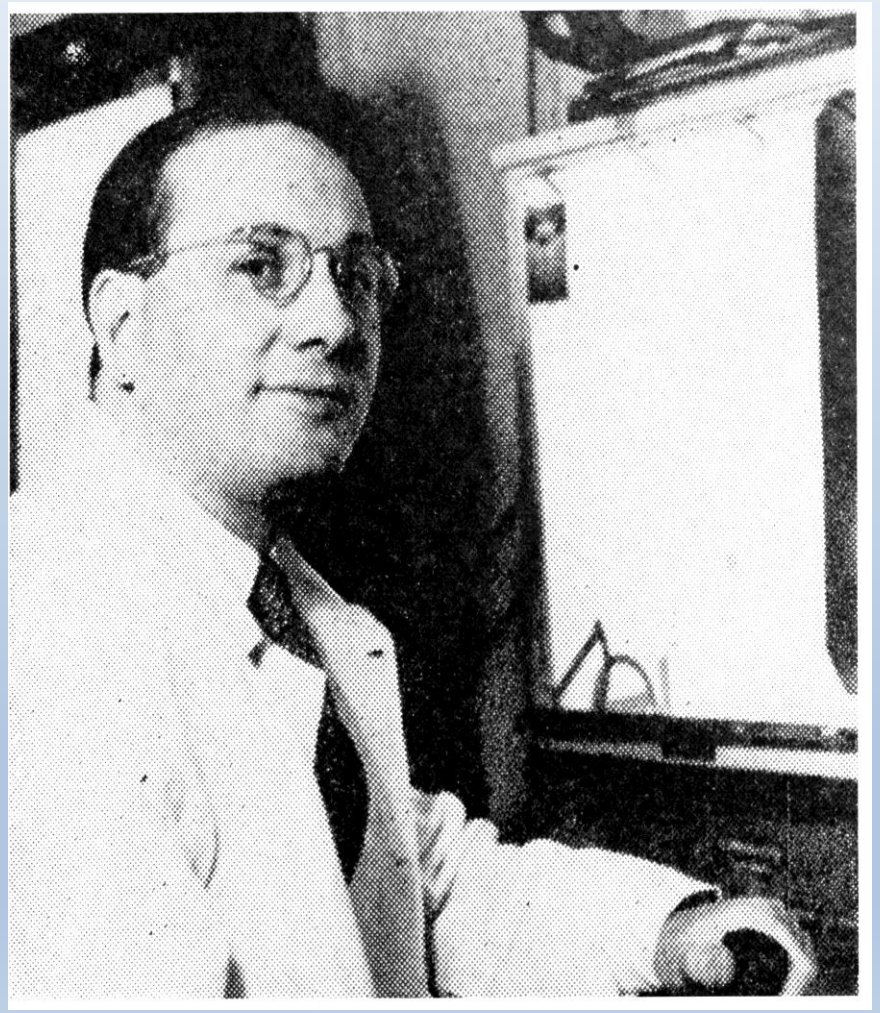


In 1953, with the help of funds from Hill-Burton, the north wing of the hospital was finally completed. At this time the main department was relocated to the 5th floor. Four radiographic fluoroscopic rooms and two therapy rooms were added. Two radiographic fluoroscopic diagnostic rooms were placed in the annex where 25% of the patients were housed.

Early 1950's – a need for more radiologists

- By 1953 16,000 x-ray procedures were being performed each year and additional radiologists were needed. Dr. Scarpellino had not taken a day off for thirteen years nor did he feel it necessary to take time off for medical meetings.

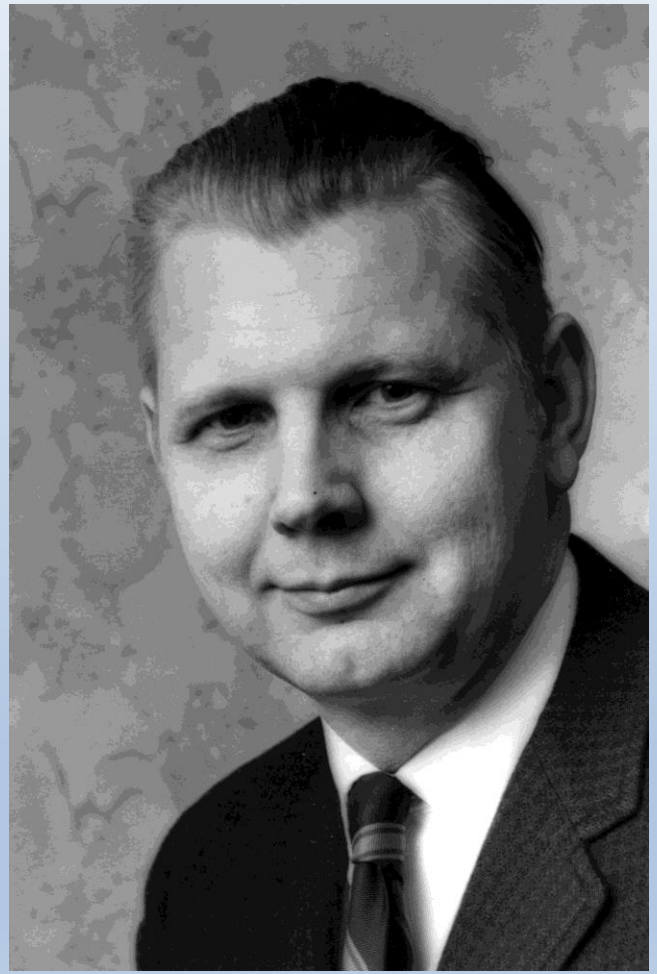
- A couple of radiologists trained at KC General Hospital were recruited but, after a few months in the department, they felt that there were better opportunities and working conditions elsewhere.



1953
Mr. Smiley finds a radiologist

Mr. John Smiley served as hospital administrator from 1923-1953. Since they were having difficulties attracting radiologists, he suggested to Dr. Scarpellino that his niece's husband, Gerhard Schottman, might be available as soon as he completed his army service.

Dr. Gerhard Schottman



- Dr. Schottman graduated from the University of Illinois College of Medicine in Chicago in 1947 and completed 5 years of postgraduate and residency training at University of Illinois affiliated hospitals. During the Korean War he served at MASH and evacuation hospitals in the war zone and later at the Tokyo Army Hospital.

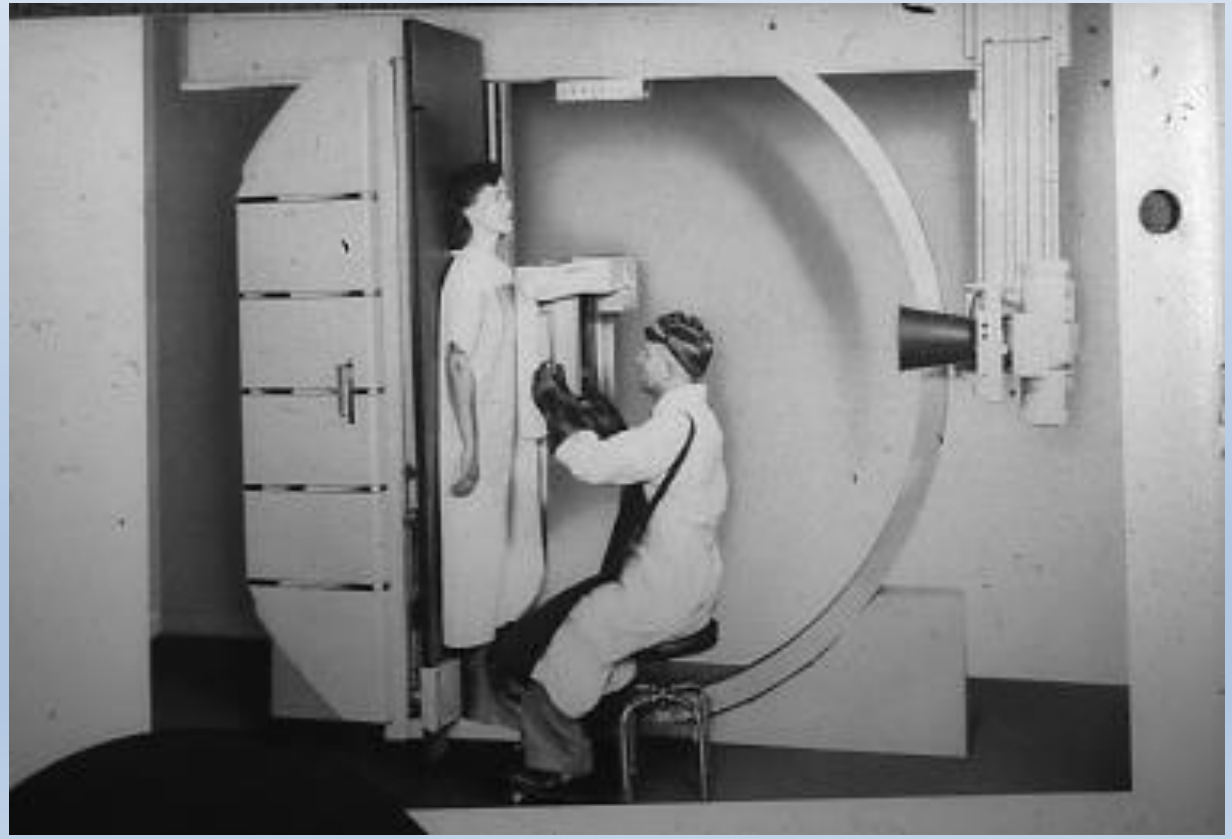
After correspondence with Dr. Scarpellino, he agreed to come to Kansas City.

1954

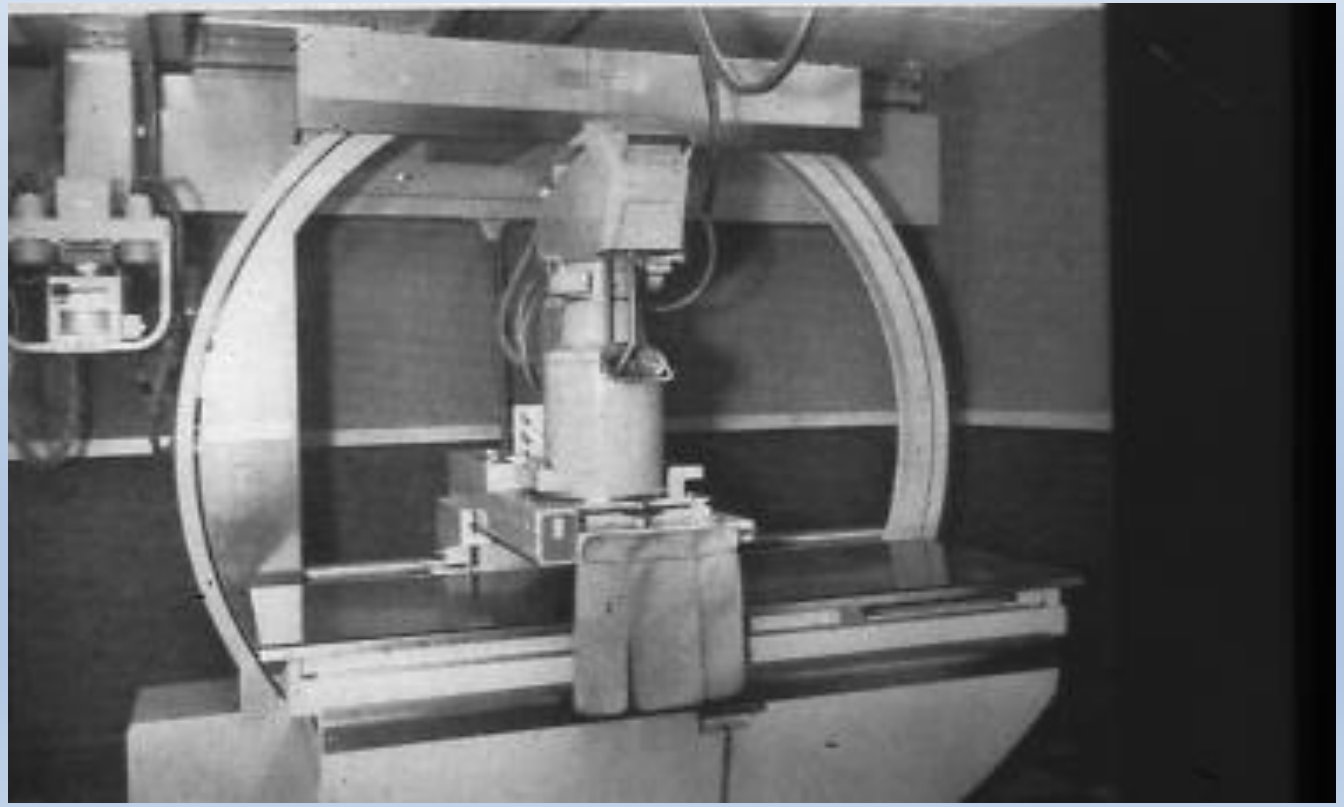
Dr. Schottman joined the Radiology Department in 1954 and a year later was designated as the Associate Director. Having had training in nuclear medicine during his residency, he developed the isotope section, initially for the diagnosis and treatment of thyroid conditions. Later, with the acquisition of a rectilinear scanner, the diagnosis of brain and other organ conditions was initiated.

1954

The new 5th floor contained this GE Imperial x-ray unit which was not only used for routine fluoroscopic procedures but was also especially adaptable for myelographic examinations which required the patient to be positioned in a 45 degree head-down position. With the conventional fluoroscopic screen, the image was still rather dim which required the examination to be conducted in a dark room. The radiologist had to wear red goggles so his eyes would adjust to the darkness of the fluoroscopic room.



Here is a new image intensifier has been added to the GE Imperial x-ray unit after a gift from Mr. Roy Roberts, publisher of the Kansas City Star. Mr. Roberts was quite obese and when Dr. Schottman presented the x-ray films to him and his doctor, he was told that they needed an intensifier to better demonstrate the fluoroscopic image for a patient of his size. He asked what the cost would be and was told $6,000. He immediately wrote out a check for that amount.



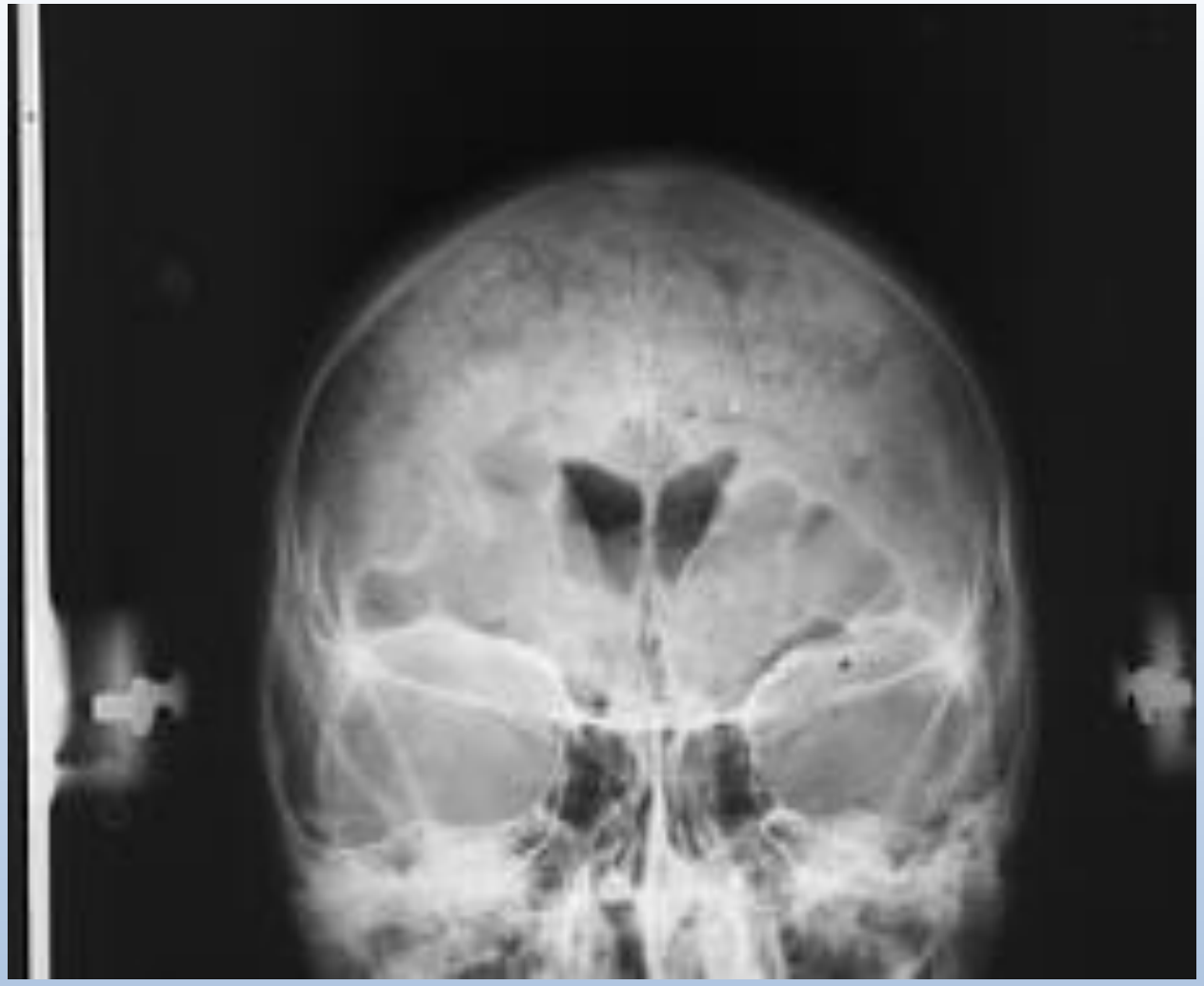
Air Conditioning 1955

- In the summer of 1955 a Mrs. Thompson, whose husband was a board member, complained about how hot the x-ray therapy room was while she was receiving treatment. She decided that the department needed air conditioning so she went to the administration and told them they would pay for it.

- The air conditioning was installed that summer.

In the 1950's and 60's a common neurosurgical procedure for brain abnormalities or tumors was a pneumoencephalogram. This was sometimes performed under general anesthesia because it occasionally caused severe headaches. This made x-ray examination difficult so Dr. Schottman built a chair so these examinations could be performed under x-ray control using smaller amounts of air and without anesthesia.

After this was published in Radiology there were many requests for plans for the chair. A copy of it was used at the Mayo Clinic for years and a local manufacturer produced a number of them.



Pneumoencephalographic study

Shown here is the air filled ventricle of the brain in a pneumoencephalographic study. With the development of the computerized tomogram (CT) in the 1970's, these air studies became obsolete.

Recruiting Radiologists

With the growth of the department, Dr. Scarpellino continued to recruit additional radiologist but he found it difficult to attract radiologists of above average qualifications.

Dr. Cameron Day and Dr. Joe Rector

- Dr. Cameron Day graduated from the University of Tennessee Medical School in 1951 and did his residency in radiology in St. Louis
- While in the army he was awarded a purple heart.
- He joined the radiology staff in 1955 and moved to Birmingham, AL in 1963.
- Dr. Joe Rector graduated from the University of Arkansas School of Medicine in 1943 and, after service in the army, had a residency with the Lockwood Group in Kansas City.
- He joined the radiology staff in 1958 and devoted most of his time at St. Luke's to radiation therapy.
- He retired in 1983.

Speeding up the processing x-rays

The manual processing of x-ray films took about two hours in a darkroom to produce a dry film. However, emergency room patients could not wait that long, so it was arranged that after development of the films the washing of the films could be done in daylight by arranging for a pass-through out of the darkroom.

Many films were read while still wet. This led to the term “a wet read.”

Dr. Carl Ambler is shown here working with one of the new fluoroscopic units with the new TV image intensifier which eliminated the need for the radiologist to wear the red night vision goggles.

Dr. Ambler graduated from the KU Medical School in 1961 and completed his residency at St. Luke's in 1966. He remained on the staff for a couple of years after his residency.

- Only a few residents were trained at St. Luke's while Dr. Scarpellino was chairman. Some of them completed their training at KU.

- In 1967 Dr. Scarpellino discontinued the residency program as he thought there were too many requirements for maintaining an approved program.

Construction plans 1962

In the early 1960's the hospital made plans to add a 9 story east wing which would include new radiographic and therapy facilities. The addition was completed in 1966 and included 9 x-ray rooms including 4 fluoroscopy rooms with TV image intensifiers, a special procedures room, mammography facilities as well as film filing rooms, offices, and classrooms on A-level.

On B-level were new therapy facilities including a Co-60 rotational unit, a 300 kv x-ray therapy unit, radium facilities as well as a new, expanded nuclear facility including nuclear cameras and ultrasound.

Two new 90 second film processors were installed in the new facility (the first in the nation) completely changing the department's operations, especially for emergency patients. The emergency room was across the hall and the two departments cooperated closely. The advent of full time emergency room physicians changed the relationship of the hospital to the community.

1967

Dr. Scarpellino dies

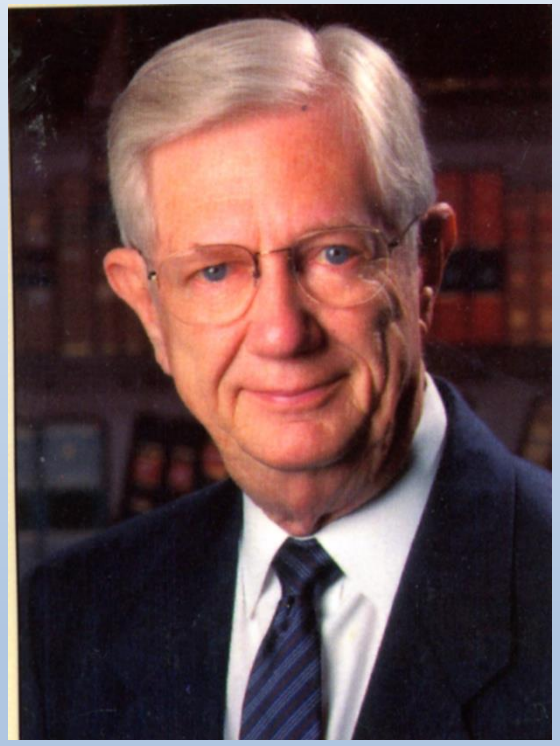
After Dr. Scarpellino died of a massive coronary occlusion at age 64, his wife created an endowment for the radiology library and donated this painting of him.

1967 Dr. Schottman appointed director

- Dr. Schottman was given the following directions when he was appointed Director of Radiology:
- 1. Radiologists must be of extremely high caliber
- 2. The department must develop and expand when new technology becomes available.
- 3. There must be an approved residency program.
- 4. The department will continue to provide approved training in x-ray technology.

- When Dr. Schottman retired in 1992 he had completed 38 years at St. Luke's. In his years at St. Luke's he was:
  - President of the Medical Staff in 1973
  - President of the Missouri Radiological Society in 1970
  - Member of the Council of the American College of Radiology
  - Member of the Council of the Radiological Society of North America
  - Clinical professor at the UMKC School of Medicine

Dr. Donald Germann



- Dr. Germann joined the Radiology Group in 1968
- He graduated from the University of Kansas Medical School in 1947 and completed his residency there. After 2 years overseas with the Air Force Medical Corps, he joined the KU medical school faculty where he was professor and acting department chairman. He had an outstanding academic record and was a pioneer in the development of nuclear medicine.
- In 1968 he was designated as the program director of the residency program at St. Luke's and, over the next 25 years, was responsible for training over 70 residents.
- His interest in pediatrics was especially significant. On a pro bono basis he and his residents provided services to Children's Mercy Hospital when they would otherwise have been without coverage.
- He served as an examiner for the American Board of Radiology and was a Clinical Professor at the UMKC School of Medicine.

Dr. Kendrick Davidson

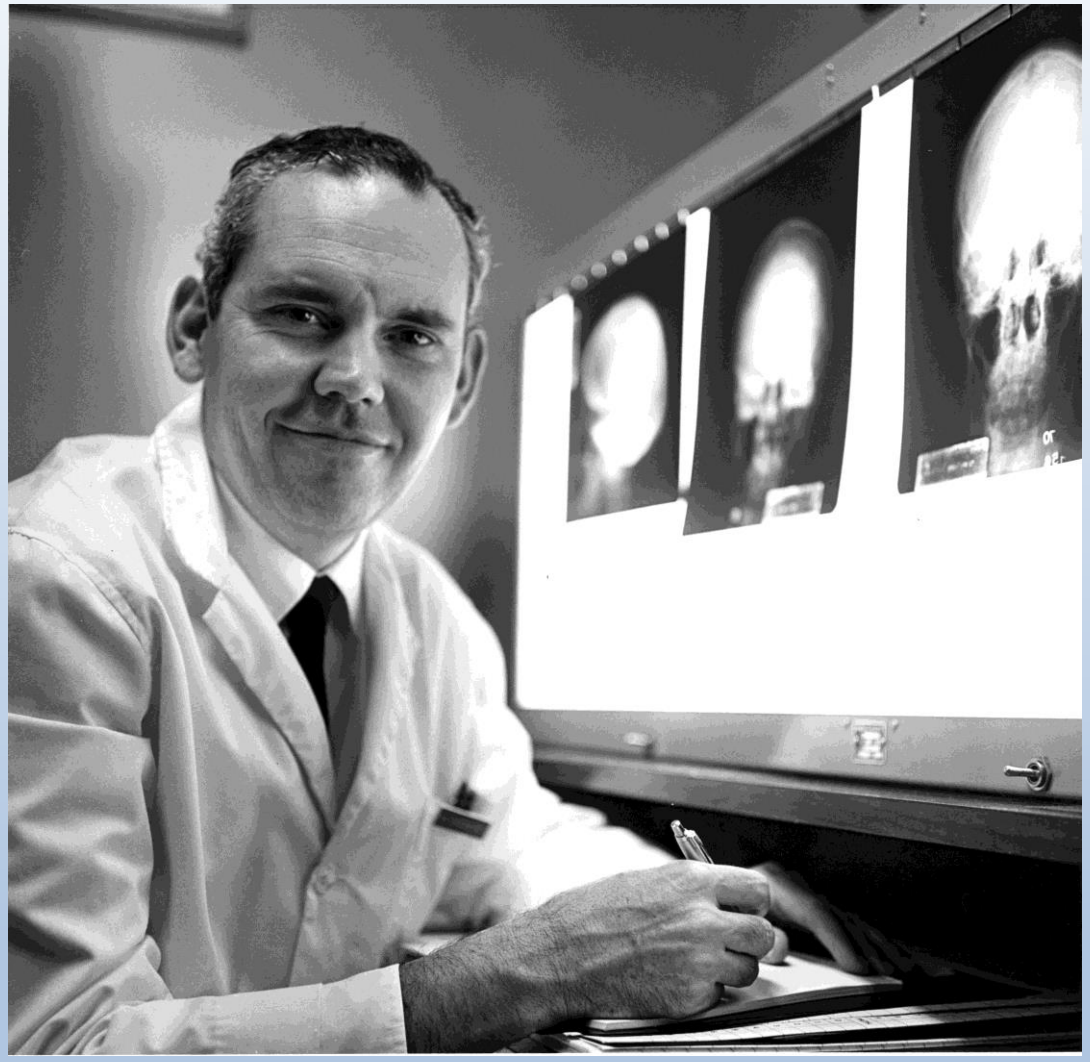
Dr. Davidson graduated from the University of Kansas School of Medicine in 1956 and completed his residency there.

After serving in the Army Medical Corps, he joined the KU faculty as a professor of radiology.

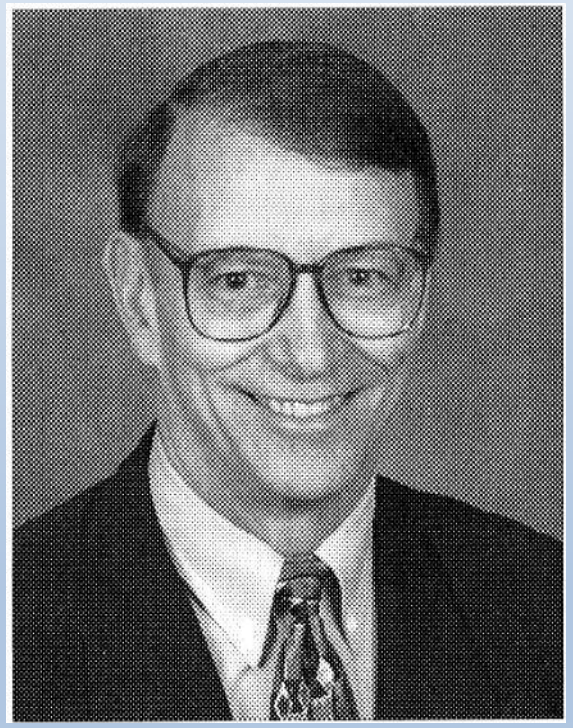
In 1970 he joined the St. Luke's radiology group where he developed the special and interventional sections which later included the computerized tomography and the MRI.

He was the author of several scientific articles.

He served as Chairman of the Radiology Department from 1989 to 1994 and was Clinical Professor at UMKC Medical School.



Dr. David Dixon
1970 - 2010



- Dr. Dixon attended Tulane University Medical School, graduated in 1961 and went on to the Mayo Clinic for his residency training in radiology.
- He served in the Vietnam War at the 24th Evacuation Hospital.
- At. St. Luke's he developed the GU section and helped develop the interventional radiology program.
- He served as President of the Medical Staff in 2005 and was elected to Fellowship of American College of Radiology and the Society of Interventional Radiology.
- He was a Clinical Professor and interim Program Director of the UMKC radiology residency.
- He retired in 2010 after 40 years at St. Luke's.

Pictured here are residents at a daily teaching conference supervised by staff radiologists. Pointing to the x-ray is Dr. Alan McLeod (KU 1979) who joined the Radiology Group in 1983. After serving on staff at St. Luke's for a number of years, he moved to Memphis, TN where he became Chairman of Radiology at a major hospital.

Medicare 1967

Medicare creates a need for more radiologists

- After Medicare was instituted in 1967 there was a marked increase in the demand for radiological procedures. In 1966 there were approximately 30,000 exams at St. Luke's ; in 1978 there were 90,000.

- Several outstanding residents were invited to join the group after completing military duty:

- Dr. James Fitzsimmons (KU 1969) 1973-- specialized in nuclear medicine and ultrasound.
- Dr. Thomas Waddell (KU 1969) 1973- specialized in interventional radiology
- Dr. F. David Fortin (KU 1970) 1974- specialized in interventional radiology
- Dr. James K. Fisher (KU 1969) 1976- specialized in GI radiology and later served as program director
- Dr. William C. Koury (KU 1970) 1977- specialized in interventional radiology

Billing for Medicare

Medicare required that the professional component of radiological procedures be billed separately from the technical portion so a billing office was established in the Medical Plaza to handle this.

In the 1980's billing became even more complicated when Medicare established a fee schedule and required more detailed information on the radiological reports, including code numbers for the reason for the exam and the diagnosis.

1974

Seven new radiology procedure rooms

The new additions to the department included a second special procedures room (pictured here) to help with the marked increase in such studies. Cardiac procedures were performed elsewhere but many neurovascular and peripheral vascular studies required these new facilities.

The new high definition TV monitors enabled the performance of more interventional studies.

Also, as part of this new addition, it was possible to provide four GU (genitourinary) rooms with two shared generators for IVP tomographic studies. It was possible to complete twenty or more examinations of patient genitourinary systems each day. The development of CT replaced these procedures and the area was later changed to mammographic facilities and then to ultrasound.

1975
computerized tomography unit installed

The new CT unit was one of the first of such units in Kansas City and was for the head only. Two slices were taken at the same time but a total of eight slices required an hour or more. A separate room was required for the computers.

1980
Whole Body CT

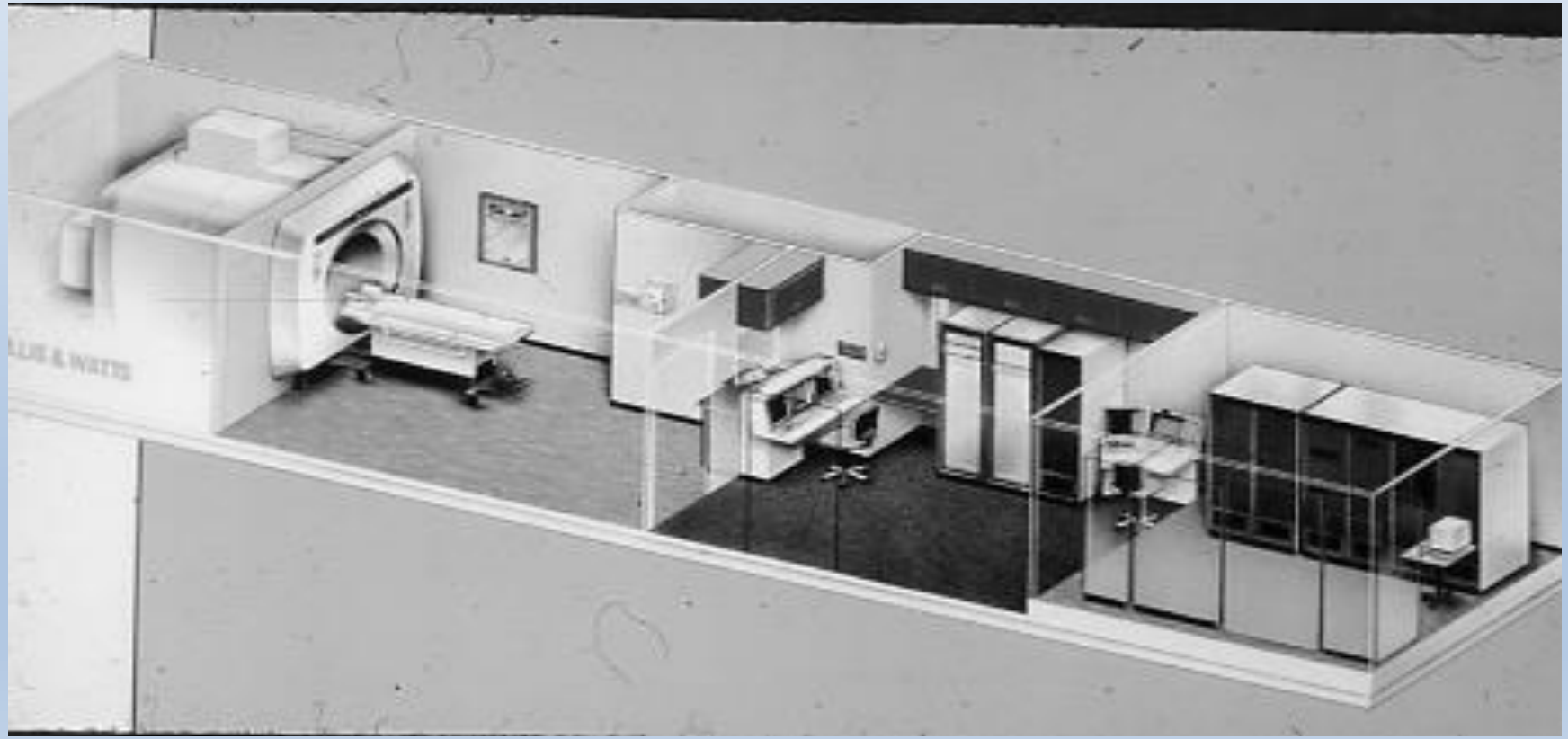
In 1980 the department gained a whole body CT unit. These early units required a good deal of space which is diagrammed here. A couple of years later a second whole body unit was installed to replace the head unit which was now obsolete. These studies have revolutionized the practice of radiology but have also had an affect on the current cost of health care.

July 17, 1981 The Hyatt Skywalks Fall

The radiology department was hosting a dinner at the Hyatt Hotel to honor graduating residents when the skywalks collapsed killing 114 and injuring twice as many. Several staff members helped rescue the injured at the hotel; others returned to work at the hospital.

In 1985 an MRI unit was installed in a trailer in the parking lot north of the Spencer Center for Education (since replaced by the new Heart Institute). The layout of the trailer is shown here.

It was necessary to construct a fence around the trailer and limit access because the strong magnetic forces could damage personnel. For two years patients were sent to this facility.



1987
The Peet Center

The new Peet Center contained a permanent facility for the MRI and a complete new radiation center including a 20 MEV linear accelerator and state of the art radiation simulation equipment.

Dr. Arthur Elman was recruited from Massachusetts General Hospital to direct the new facility. He was later joined by Dr. Bruce Hoskins, also from MGH.

1990's – the need for a new outpatient facility

- The changing health care environment made it possible for more studies to be done on an outpatient basis so the radiology department recommended that a new outpatient facility be built in the Medical Plaza building.

- A rival group of physicians with an imaging center already in the Medical Plaza mounted an effort to stop the new center.
-
- The end result was a joint venture between the two groups.

- In ten years the hospital would assume management of the imaging center and merge outpatient staff with the hospital inpatient department.

In 1990 St. Luke's combined its residency programs with the programs at Truman Medical Center and Children's Mercy Hospital under the umbrella of the UMKC Medical School. This would lead to a total of 30 residents in a 5 year radiology program.

This picture was taken at the retirement party for Drs. Schottman and Germann in 1992. Dr. Schottman is on the left, Dr. Ken Davidson in the middle, and Dr. Donald Germann on the right.

Dr. Davidson retired from St. Luke's two years later but continued to teach at KU and MU.

Directors of the Department of Radiology

- Dr. Ken Jacobs
- 1994-1999

- Dr. Mark Reddick
- 1999-2007

The 2000 Medical Directory of Greater Kansas City listed these radiologists for St. Luke's.

- Baron Adkins, D.O.
- Naveed Akhtar, M.D.
- Gwendolyn Arnett, M.D.
- Richard Cronemeyer, M.D.
- Pablo Delgado, M.D.
- David Dixon, M.D.
- James Fisher, M.D.
- James FitzSimmons M.D.
- Bertrand Gallet, M.D.
- David Hazulka, M.D.
- Kenneth Jacobs, M.D.
- Stephen Kunz, M.D.
- Mark Lavin, M.D.
- Christie Phelan, M.D.
- Mark Redick, M.D.
- Belinda Sun, M.D.
- Robert Thompson, M.D.
- Thomas Waddell, M.D.
- Dennis Wilcox, M.D.

The End of Film

- After 2000 most hospitals converted from the use of x-ray film to digital radiography so that images could be transmitted directly to the patient floor or referring physician's office.
- This eliminated the need for the referring doctor to go to the radiology department daily.
- It also allowed for images to be sent over the internet so that images from remote locations could be interpreted at St. Luke's.

- The early 21st Century saw doctors moving from the independent practice model to hospital employment. This included most surgical and medical specialties including radiology and cardiology.

In 2007 the hospital elected to develop a Neuroscience Institute in the remodeled Mid-America Heart Institute.

- The Neuroscience Institute would have a separate staff. Since this would affect the operation of the special procedures section and the training programs, a majority of the radiologists decided to practice at other hospitals.

- Dr. Jeffrey Kunin was designated chairman of the department of radiology with responsibility for recruiting new members.

In 2010 these radiologists were on staff at St. Luke's

- Naveed Akhtar, M.D.
- Kelli Andresen, M.D.
- Shayta Ansari, M.D.
- Veeral Bhoot, M.D.
- Thomas Boden, M.D.
- Paul Chesis, M.D.
- Brendan Coleman, M.D.
- Mark Davis, M.D.
- Pablo Delgado, M.D.
- William Holloway, M.D.
- Jeffrey Kunin, M.D.
- Jon Madera, M.D.
- Santiago Martinez-Jimenez, M.D.
- Ruby Meierotto, M.D.
- Marc Paul, M.D.
- Julia Prescotte-Focht, D.O.
- Mohammad Riaz, M.D.
- Melissa Rosado de Christianson, M.D.
- Julie Shaffrey, M.D.
- Amy Soetaert, M.D.
- Margaret Stull, M.D.
- Jennifer Theoharis, M.D.
- Ann Tran, M.D.
- Tom Whang, M.D.
- Brandt Wible, M.D.